~~FOUO~~

May 30,2006

TO: GEN Pete Schoomaker

CC: Gen Pete Pace
Fran Harvey

FROM: Donald Rumsfeld DR.

SUBJECT: Market for Soldiers

I notice you are looking at just the male market for soldiers. I would have thought we would be looking at male and female.

Attach: Slide "Primary Market"

DHR.ss
053006-04

Please Respond By 06/15/06

11-L-0559/OSD/57913

OSD 09488-06

6/13/2006 10:48:01 AM

~~FOUO~~

Algeria

April 19,2006

TO: Steve Cambone

CC: Gen Pete Pace

FROM Donald Rumsfeld DR.

SUBJECT: Intel Sharing Agreement

Why don't we have a formal intel sharing agreement between EUCOM and Algeria? They have been very cooperative.

Thanks.

DHR.ss
041906-30

Please Respond By 05/03/06

19 Apr 06

11-L-0559/OSD/57914

OSD 09581-06

6/14/2006 10:49:14 AM

~~FOUO~~

May 30,2006

TO: Eric Edelman

FROM: Donald Rumsfeld

SUBJECT Ambassador Vacancy Rate at State Department

Please find out what the vacancy rate is for ambassadors worldwide, on an average over the last five years. The State Department must know.

In terms of DoDs Presidential appointees-Senate confiied, we are running about 25 percent vacant if you take each day of the year since the President was sworn in and factor in how many days there were vacancies in each one of the 47 jobs.

I would like to see the same calculation for ambassadors. I think the "gapping" is serious and is causing us a problem. If it is true, we might want to combine the two, and see what we could do about getting the Congress and the White House to fix it.

Thanks.

DHR dh
052206-42

Please Respond By 06/29/06

~~FOUO~~

OSD 09615-06
6/14/2006 1 50 01 PM
11-L-0559/OSD/57915

~~FOUO~~

INFO MEMO

DSD_____

FOR SECRETARY OF DEFENSE

FROM: Eric S. Edelman, Under Secretary of Defense for Policy JUN 1 9 2006

SUBJECT: Ambassador Vacancy Rate at State Department

- You asked about the vacancy rate for U.S. ambassadors on average over the last five years (note next under). I spoke with Under Secretary of State Henrietta Fore about the vacancy issue. She says State has been plagued with chronic "gapping" problems as well.

- Henrietta has been tasked specifically to take up the matter with the White House on behalf of State. She was receptive to the idea of State and DoD working together to address the problem.

- She will gather the data you requested on position vacancy rates for ambassadors and presidential appointees at State.

- We will provide that data to you and will work with State to develop a plan to engage the White House and Congress on this issue.

OSD 09615-06

6/14/2006 1 50 37 PM

~~FOUO~~

11-L-0559/OSD/57916

~~FOUO~~

May 30, 2006

TO: Eric Edelman

FROM Donald Rumsfeld

SUBJECT Ambassador Vacancy Rate at State Department

Please find out what the vacancy rate is for ambassadors worldwide, on an average over the last five years. The State Department must know.

In terms of DoDs Presidential appointees-Senateconfirmed, we are running about 25 percent vacant if you take each day of the year since the President was sworn in and factor in how many days there were vacancies in each one of the 47 jobs.

I would like to see the same calculation for ambassadors. I think the "gapping" is serious and is causing us a problem. If it is true, we might want to combine the two, and see what we could do about getting the Congress and the White House to fix it.

Thanks.

DHR dh
05220662

Please Respond By 06/29/06

~~FOUO~~

~~FOUO~~

INFO MEMO

DSD____

FOR SECRETARY OF DEFENSE

FROM: Eric S. Edelman, Under Secretary of Defense for Policy JUL 10 2006

SUBJECT: Ambassador Vacancy Rate at State Department

- You asked about the vacancy rate for U.S. ambassadors on average over the last five years (note next under).

- I have been working with Under Secretary of State Henrietta Fore, who has informed me that the ambassadorial vacancy rate over the last four years has been 8%.

    - I asked Henrietta to array the data by region to see if there were any statistically significant variations. (Tab A) While the vacancy rate ranges from 4-10%, there is nothing statistically significant to report

- Henrietta also supplied the following data:

    - In terms of Presidential appointees/Senate confirmed slots, the State Department has had 9,754 vacant days, which amounts to about **13.2%** of the entire tenure of this administration.

    - These numbers are for Assistant Secretaries and Under Secretaries only, of which there are 37 positions in total.

- We continue to work with State to develop a plan to engage Congress and the White House on this issue.

OSD 09615-06
7/11/2006 10:14:57 AM

11-L-0559/OSD/57918

~~FOUO~~

May 30,2006

TO: Eric Edelman

FROM: Donald Rumsfeld

SUBJECT Ambassador Vacancy Rate at State Department

Please find out what the vacancy rate is for ambassadors worldwide, on an average over the last five years. The State Department must know.

In terms of DoD's presidential appointees-Senateconfirmed, we are running about 25 percent vacant if you take each day of the year since the President was sworn in and factor in how many days there were vacancies in each one of the 47 jobs.

I would like to see the same calculation for ambassadors. I think the "gapping" is serious and is causing us a problem. If it is true, we might want to combine the two, and see what we could do about getting the Congress and the White House to fix it.

Thanks.

DHR dh
052206-42

Please Respond By 06/29/06

~~FOUO~~

Chief of Mission Vacancy Percentanes by Region

As of June 30, 2006, there had been 2006 days since 01/01/2001.
These figures were compiled from 162 Chief of Mission positions.

For all COM positions, vacant days accounted for 8% of all days since 2001.
The attached worksheets have the percentages broken down by region.

	DAYSVACANT
Angola	0
Benin	169
Botswana	155
Burkina Faso	224
Burundi	283
Cape Verde	70
Chad	111
Cornoros	239
Congo-Brazzaville	281
Congo-Kinshasa	19
Cote Divoire	76
Djibouti	176
Equatorial Guinea and Cameroon	0
Eritrea	0
Ethiopia	75
Gabon and Sao Tome and Principe	221
Gambia	0
Ghana	173
Guinea	136
Kenya	0
Lesotho	70
Liberia	9
Madagascar	96
Malawi	439
Mali	208
Mauritania	0
Mauritius and Seychelles	7
Mozambique	0
Namibia	173
Niger	216
Nigeria	280
Rwanda	513
Senegal and Guinea Bissau	175
Sierra Leone	0
South Africa	0
Swaziland	99
Tanzania	898
Togo	149
Uganda	221
Zambia	150
Zimbabwe	981
TOTAL DAYS VACANT:	7,092
Percentage of Total Days:	**9%**

East Asian and Pacific Affairs	DAYS VACANT SINCE 2001
Australia	123
Brunei	76
Cambodia	180
China	72
East Timor	0
Fiji Islands, Kiribati, Nauru, Tuvalu, Tonga	500
Indonesia	65
Japan	80
Kiribati	0
Korea	374
Laos	15
Malaysia	131
Marshall Islands	0
Micronesia	0
Mongolia	81
New Zealand/Samoa	198
Papua New Guinea Solomon Islands, Republic of Vanuatu	0
Philippines	291
Singapore	155
Thailand	0
Vietnam	123
TOTALDAYSVACANT:	2,464
Percentage of *Total* Days:	6%

European and Eurasian Affairs	**DAYS VACANT SINCE 2001**
Albania	293
Armenia	9
Austria	151
Azerbaijan	25
Belarus	0
Belgium	395
Bosnia and Herzegovina	34
Bulgaria	20
Croatia	0
Cyprus	136
Czech Republic	227
Denmark	199
Finland	485
France	426
Georgia	272
Germany	148
Great Britain	488
Greece	3
Holy See	397
Hungary	42
Iceland	181
Ireland	286
Italy	259
Latvia	0
Lithuania	0
Luxembourg	443
Macedonia	124
Malta	323
Moldova	25
Netherlands	135
Norway	0
Poland	37
Portugal	463
Romania	242
Russia	30
Serbia and Montenegro	457
Slovak Republic	179
Slovenia	0
Spain and Andorra	304
Sweden	209
Switzerland and Liechtenstein	263
Tajikistan	74
Turkey	177
Ukraine	82
TOTAL DAYS VACANT:	**8,043**
Percentage of Total Days:	**9%**

Near Eastern Affairs	DAYS VACANT SINCE 2001
Algeria	0
Bahrain	18
Egypt	154
Iraq	55
Israel	0
Jordan	473
Kuwait	0
Lebanon	0
Morocco	241
Oman	375
Qatar	28
Saudi Arabia	57
Syria	142
Tunisia	206
United Arab Emirates	0
Yemen	54
TOTAL DAYS VACANT:	1,803
P tag f Total Days:	6%

South	DAYSVACANT
Afghanistan	109
Bangladesh	206
India	131
Kazakhstan	22
Nepal	63
Pakistan	64
Sri Lanka and Maldives	0
Tajikistan	74
Turkmenistan	0
Uzbekistan	150
TOTAL DAYS VACANT:	819
Percentage of Total Days	4%

Miscellaneous	DAYS VACANT SINCE 2001
African Union	106
NATO	105
OECD	59
OSCE	318
UN -Geneva	21
USVIE, IAEA	340
USUN, UNGA	336
TOTAL DAYS VACANT:	1,285
Percentage of Total Days:	9%

~~FOUO~~

JUN 16 2006

TO: **Fran Townsend**

CC: Honorable Joshua Bolten
Honorable Michael Chertoff
Gordon England
General Pete Pace
Eric Edelman
Paul McHale
ADM Tim Keating

FROM Donald **Rumsfeld**

SUBJECT: DoD Preparations for Disaster Relief

I have had good meetings with Admiral Tim Keating at NORTHCOM about preparations DoD has undertaken for natural or man-made disasters.

I am generally satisfied with DoD's readiness, which includes:

- Pre-identified force packages that can be put into action immediately upon a request from DHS, including capabilities such as:
  - Active, Reserve and Guard manpower
  - Communications
  - Sensors for situational awareness
  - Medical and mortuary affairs
  - Engineers
  - Publicaffairs

OSD 09732-06

6/16/2006 10:16 AM

~~FOUO~~

11-L-0559/OSD/57927

DoD is also actively working with other agencies to help in developing planning capabilities. Our goal is to get their planning capabilities up to a higher level, so they can take over and do a good job of both planning and executing.

It is important for you to be clear that many of the state Governors may well not be forthcoming with persmision for Federal forces, as opposed to National Guard forces, to be involved early in an emergency. DoD will be ready to do so, and we are aware that the President might see a need to send in Federal forces. However, I see a need to think through, early on, what kind of authorities and/or arrangements might be needed, including memoranda of agreement that set forth responsibilities and commandcontrol arrangements. It would be much better to think these issues through now, prior to an incident.

Thanks.

DHR:dh
060106-15 (TS).doc

11-L-0559/OSD/57928

JUN 16 2006

TO: Fran Townsend

CC: Honorable Joshua Bolten
Honorable Michael Chertoff
Gordon England
General Pete Pace
Eric Edelman
Paul McHale
ADM Tim Keating

FROM Donald Rumsfeld

SUBJECT: DoD Preparations for Disaster Relief

I have had good meetings with Admiral Tim Keating at NORTHCOM about preparations DoD has undertaken for natural or man-made disasters.

I am generally satisfied with DoD's readiness, which includes:

- he-identified force packages that can be put into action immediately upon a request from DHS, including capabilities such as:
  - Active, Reserve and Guard manpower
  - Communications
  - Sensors for situational awareness
  - Medical and mortuary affairs
  - Engineers
  - Public affairs

OSD 09732-06
6/16/2006 10:10:14 AM

11-L-0559/OSD/57929

DoD is also actively working with other agencies to help in developing planning capabilities. Our goal is to get their planning capabilities up to a higher level, so they can take over and do a good job of both planning and executing.

It is important for you to be clear that many of the state Governors may well not be forthcoming with persmision for Federal forces, as opposed to National Guard forces, to be involved early in an emergency. DoD will be ready to do so, and we are aware that the President might see a need to send in Federal forces. However, I see a need to think through, early on, what kind of authorities and/or arrangements might be needed, including memoranda of agreement that set forth responsibilities and command/control arrangements. It would be much better to think these issues through now, prior to an incident.

Thanks.

DHR:dh
060106-15(TS).doc

11-L-0559/OSD/57930

JUN 16 2006

TO: Fran Townsend

CC: Honorable Joshua Bolten
Honorable Michael Chertoff
Gordon England
General Pete Pace
Eric Edelman
Paul McHale
ADM Tim Keating

FROM. Donald Rumsfeld

SUBJECT DoD Preparations for Disaster Relief

I have had good meetings with Admiral Tim Keating at **NORTHCOM** about preparations DoD has undertaken for natural or man-made disasters.

I am generally satisfied with DoD's readiness, which includes:

- Pre-identified force packages that *can* be put into action immediately upon a request from **DHS,** including capabilities such as:
  - Active, Reserve and Guard manpower
  - Communications
  - Sensors for situational awareness
  - Medical and mortuary affairs
  - Engineers
  - Public affairs

OSD 09732-06
6/16/2006 10:10:14 AM

11-L-0559/OSD/57931

DoD is also actively working with other agencies to help in developing planning capabilities. Our goal is to get their planning capabilities up to a higher level, so they can take over and do a good job of both planning and executing.

It is important for you to be clear that many of the state Governors may well not be forthcoming with persmision for Federal forces, as opposed to National Guard forces, to be involved early in an emergency. DoD will be ready to do so, and we are aware that the President might see a need to send in Federal forces. However, I see a need to think through, early on, what kind of authorities and/or arrangements might be needed, including memoranda of agreement that set forth responsibilities and command/control arrangements. It would be much better to think these issues through now, prior to an incident.

Thanks.

DHR:dh
060106-15 (TS).doc

11-L-0559/OSD/57932

June 16,2006

TO: Phil Zelikow

FROM: Donald Rumsfeld

SUBJECT: Meeting with Mr. Stephen Herbits

Attached is an information sheet on the World Jewish Congress. The Secretary General is Steve Herbits, with whom I have worked several times over the past three decades. He is a smart, creative thinker and is very engaged in international events via the World Jewish Congress.

I think it might be interesting for you to hear from him, especially on some of the work they are doing relating to Iran. If you are interested in meeting him, let the folks in my office know and we can arrange it.

Attach Background Sheet on The World Jewish Congress

DHR.ss
SF061606-05

000,115

16 Jun 06

OSD 09795-06
6/19/2006 9:48:01 AM

BACKGROUNDER

The World Jewish Congress

June 14,2006

Mission

The World Jewish Congress (WJC) is the political and diplomatic arm of the Jewish people.

Founded in 1936 to alert the world to the impending Holocaust, the WJC led the negotiations for reparations after the war; conducted the diplomatic campaign for the release of Jews living in the former Soviet Union, including pressuring Eastern block governments; led the negotiations in the 1990s through the present for restitution from governments, banks, and insurance companies for their various roles during the Holocaust; conducted the long-term and delicate negotiations with the Vatican during Pope John Paul IIs tenure, establishing new norms for Catholic-Jewish and Vatican-Israel relations; continued its role of protecting small, isolated Jewish communities anywhere in the world; and addressed global and regional governmental and non-governmental institutions on the subject of anti-Semitism.

Today the WJC has as its primary missions the expansion of inter-religious dialogues and trialogues (with the Muslims and Catholics); the Jewish response to threats from Iran; and its traditional roles of closing the remaining restitution issues, fighting anti-Semitism, and protection of small communities.

Organization

Nearly 100 national Jewish communities from around the world elect their own leaders. These leaders become part of 5 regional bodies: North America, Latin America, Europe, EuroAsia and Israel. These regional entities form the governing bodies of the WJC and elect its officers.

structure

The WJC's top governance body is a quadrennial Plenary Assembly – a body of some 500 delegates from around the world. A subsidiary Governing Board of about 80 – 90 delegates meets about every 6 to 8 months. The operating leadership is a 10 person Steering Committee, consisting of the five Regional Presidents, the four officers of the WJC, and the President of the Jewish Agency/World Zionist Organization. The President of the World Jewish Congress is former Seagram Co. Ltd. Chairman, Edgar M. Bronfman.

Its operating arm is led by a Secretary General elected by the Plenary Assembly. (Stephen Herbits). Headquarters operates out of New York, Brussels and Jerusalem.

11-L-0559/OSD/57934

Notes

The annual budget of the WJC (after fundraising costs) is about $8 million. It does not undertake social programs, although it gives grants to bolster its information and articulation of issues for the purpose of educating Jewish communities around the world and facilitating discussions with governments.

Funds are raised from private donors through major gifts, estates, direct mail and occasionally events in various countries and foundation grants.

Iran

Jewish leaders and communities around the world are clamoring for the WJC to act in its diplomatic and political role in response to President Ahmadinejad's declarations of the desire to "wipe Israel off the map," of denying the Holocaust, and that "Jews are infidels in the eyes of Muslims."

The WJC has recently begun publishing a short newsletter – Iran Update – which is distributed electronically to its community and organizational members and anyone who wishes to receive it. It is published on its website – www.worldjewishconpress.org. The goal is to become the primary source of information for Jewish communities around the world on developments with Iran, what the best commentators are saying, what various Jewish communities are doing, and is likely to begin offering a WJC viewpoint on what Jewish communities might be saying to their own governments

In addition, the Jewish Community of Iran has formally asked to become a member community of the EuroAsia Jewish Congress and the WJC – an activity which has broad implications within the Jewish world and perhaps outside.

11-L-0559/OSD/57935

~~FOUO~~

May 10, 2006
051006-20

To: Paul McHale

CC: Eric Edelman
Dan Dell'Orto

FROM: Donald Rumsfeld DR.

SUBJECT: AG's Opinion on DoD Functioning in US

Please work with Dan Dell'Orto to figure at how to make sure we understand fully the Attorney General's opinion with respect to our ability to function in the United States relative to the Department of Homeland Security.

Thanks.

DHR dh
051004-20

[redacted]

Please Respond By 05/25/06

~~FOUO~~

OSD 09850-06

6/19/2006 12:48:36 PM

11-L-0559/OSD/57936

HOMELAND DEFENSE

ASSISTANT SECRETARY OF DEFENSE
2600 DEFEN PENTAGON
WASHINGTON, DC 20301-2600

INFO MEMO

JUN 9 2006

USDP

FOR SECRETARY OF DEFENSE

JUN 16 2006

FROM: Paul McHale, Assistant Secretary of Defense (Homeland Defense)

Peter F. Verga
Principal Deputy

SUBJECT: Attorney General's Opinion on DoD Functioning in U.S.

- You requested that I work with the General Counsel regarding the Attorney General's opinion on a draft Homeland Security Presidential Directive (HSPD) that would have assigned responsibility to the Secretary of Defense for managing aspects of the Federal response to certain domestic catastrophic incidents (TAB A).

- In the opinion of the Department of Justice, the draft HSPD in coordination last month was in conflict with Title 6, U.S.C., section 312(3)(A), which assigns responsibility for managing the Federal response to all terrorist and domestic natural disaster incidents to the Secretary of Homeland Security (TAB B).

- The Homeland Security Council (HSC) staff has revised the draft HSPD to eliminate the apparent statutory conflict. The revised draft HSPD would direct the Secretary of Defense and the Secretary of Homeland Security to "establish contingency plans should the President direct the Secretary of Homeland Security to assign to the Secretary of Defense significant, comprehensive responsibilities in the Federal response to a domestic catastrophic incident." (TAB C)

- We have reviewed the revised draft HSPD and proposed language to eliminate any potential statutory conflict and clarified the relationship, roles, and responsibilities between the Secretary of Defense and the Secretary of Homeland Security (TAB D). We believe these changes resolve the concerns expressed by the Department of Justice.

- According to the HSC Staff, a final draft of the HSPD will be issued in two weeks.

COORDINATION: TAB E

Attachments:
As stated

Prepared by: Mr. Sims, OASD(HD)/HLSI, (b)(6)

'OS 1066-20'

15-06-06 12:32 IN

12-06-06 15:05 IN

11-L-0559/OSD/57937

OSD 09850-06

6/19/2006 12:49:27 PM

06/005984

TAB

A

~~FOUO~~

May 10, 2006
051006-20

TO: Paul McHale

CC: Eric Edelman
Dan Dell'Orto

FROM: Donald Rumsfeld DR.

SUBJECT: AG's Opinion on DoD Functioning in US

Please work with Dan Dell'Orto to figure out how to make sure we understand fully the Attorney General's opinion with respect to our ability to function in the United States relative to the Department of Homeland Security.

Thanks.

DHR.db
051006-20

Please Respond By 05/25/06

~~FOUO~~

OSD 09850-06

11-L-0559/OSD/57940

6/19/2006 12:48:36 PM

TAB

B

SECTION 312(3) OF TITLE 6, U.S. CODE

[The Secretary, acting through the Under Secretary for Emergency Preparedness and Response, shall include—] providing the Federal Government's response to terrorist attacks and major disasters, including—

(A) managing such response;

(D) coordinating other Federal response resources, including requiring deployment of the Strategic National Stockpile, in the event of a terrorist attack or major disaster;

TAB

C

Homeland Security Presidential Directive/HSPD-XX

Subject: Role of the Secretary of Defense in the Response to Certain Domestic Catastrophic Incidents

Purpose

(1) To enhance the ability of the United States to respond to and recover from domestic catastrophic incidents by directing Federal departments and agencies to plan for the possible assignment to the Secretary of Defense, at the direction of the President, of significant, comprehensive responsibilities in the provision and management of the Federal Government's response to such incidents.

Definitions

(2) In this directive:

(a) the term "Federal departments and agencies" means those executive departments enumerated in 5 U.S.C. 101 and the Department of Homeland Security; independent establishments as defined by 5 U.S.C. 104(1); government corporations as defined by 5 U.S.C. 103(1); and the United States Postal Service; and

(b) the term "response" means activities that address the short-term, direct effects of an incident, including immediate actions to save lives, protect property, and meet basic human needs, and the execution of emergency operations plans and of incident mitigation activities designed to limit the loss of life, personal injury, property damage, and other harms.

Policy

(3) The Secretary of Homeland Security is responsible for domestic incident management. Pursuant to the Homeland Security Act of 2002, the Secretary is responsible for providing the Federal Government's response to terrorist attacks and major disasters, including managing such response and coordinating Federal response resources.

(4) The Secretary of Defense has traditionally provided essential assistance in support of the response to domestic incidents, and the Department of Defense possesses unique assets and capabilities necessary to conduct and manage the large-scale operations that might be required in the aftermath of a catastrophic incident. In particular, the Department of Defense has established multiple, robust, and survivable command centers from which Federal Government response efforts could be coordinated. To enhance the ability of the United States to respond to and recover from extraordinary

catastrophic incidents and thereby protect the American people, it is prudent to establish coordinated and exercised contingency plans for the Secretary of Defense to provide such assistance without undue delay.

(5) Therefore, the President, pursuant to his authority under the Constitution and the laws of the United States, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 USC 5121-5206) (Stafford Act), may direct the Secretary of Homeland Security, in accordance with applicable law, to assign to the Secretary of Defense significant, comprehensive responsibilities in the provision and management of the Federal response to a domestic catastrophic incident. Such direction will be communicated to the Secretaries of Defense and Homeland Security and other appropriate heads of Federal departments and agencies.

(6) Factors for consideration prior to issuance of such a presidential directive include, but are not limited to, the following:

(a) the status and effectiveness of the State, local, and private sector response;

(b) the effectiveness of coordination among the Federal departments and agencies and State and local governments in the affected jurisdictions;

(c) the existence of requests for Federal military or disaster relief assistance from the Governor of the affected State(s), and the status of the implementation of the National Response Plan and emergency authorities; and

(d) the need for the involvement of active duty U.S. military forces in the response to the incident, and the need for an integrated or coordinated command structure among the Federal military forces, State National Guard forces under the Adjutant General, the Governor(s), and other Federal and State personnel and assets.

(7) No later than 90 days after the effective date of this directive, the Secretaries of Defense and Homeland Security, in consultation with appropriate heads of other Federal departments and agencies, shall develop, and shall jointly submit to the President for approval through the Assistant to the President for Homeland Security and Counterterrorism, a comprehensive and systematic contingency plan for immediately implementing any Presidential direction made in accordance with this directive. Such plan shall include appropriate mechanisms for cooperation and coordination

between the Departments of Defense and Homeland Security and provision for periodic exercises.

(8) This directive shall be implemented in a manner consistent with applicable law and subject to the availability of appropriations.

(9) Nothing in this directive shall be construed to alter, or impede the ability to carry out, the authorities of the principal officers of Federal departments and agencies as heads of their respective agencies. Without limiting the foregoing, nothing in this directive shall be construed to impair or otherwise affect (a) the authority of the Secretary of Defense with respect to the Department of Defense, including the chain of command for the armed forces of the United States under section 162(b) of title 10, United States Code, and the authority of the Secretary of Defense with respect to the Department of Defense under section 113(b) of that title, or (b) the authority of the Secretary of Homeland Security with respect to the Department of Homeland Security or pursuant to the Stafford Act.

(10) The heads of all Federal departments and agencies shall cooperate with the Secretaries of Homeland Security and Defense in carrying out their respective obligations under this directive.

(11) This directive is intended only to improve the internal management of the executive branch of the Federal Government and is not intended to, and does not, create any right or benefit, substantive **or** procedural, enforceable at law or in equity by a party against the United States, its departments, agencies, instrumentalities, or other entities, its officers, employees, or agents, or any other person.

TAB

D

HSPD ON DOD ROLE IN CATASTROPHIC DISASTERS
DOD COMMENTS
May 22,2006

1. Modify the sentence in para (1) "..the Secretary of Defense, at the direction of the President, of significant, comprehensive responsibilities in the provision and management of the Federal Government'sresponse to such incidents." to read "..the Secretary of Defense, at the direction of the President, of significant, comprehensive responsibilities in the Federal Government's response to such incidents." Justification: Leaving operant the word "management" in this HSPD seems contrary to the need to relieve DOJ OLC's concerns about a statutory conflict between 6 U.S.C. 312(3)(A) and provision by the President of incident management responsibilities to the Secretary of Defense. The revised language eliminates any vestige of this statutory conflict, increases the clarity of the HSPD, and would not require a change if, at a future date, Congress agrees to amend 6 U.S.C. 312(3)(A) in a manner that would permit the President to temporarily assign another Federal department or agency head the responsibility for managing an incident.

2. Delete the sentence in para (4) that reads "In particular, the Department of Defense has established multiple, robust, and survivable command centers from which Federal Government response efforts could be coordinated." Justification: This sentence was rendered unnecessary by the elimination of the management role of the Secretary of Defense.

3. Modify in para (4) "...the Secretary of Defense to provide such assistance without undue delay." to read "...the Secretary of Defense to rapidly provide such assistance when directed to do so by the President." Justification: The original language could be interpreted as a pejorative against DoD and its response to disasters.

4. Delete in para (5) "...direct the Secretary of Homeland Security, in accordance with applicable law, to..." and "...the provision and management of..." from "...may direct the Secretary of Homeland Security, in accordance with applicable law, to assign to the Secretary of Defense significant, comprehensive responsibilities in the provision and management of the Federal response to a domestic catastrophic incident." With this change, this sentence would read "*(5)* Therefore, the President, pursuant to his authority under the Constitution and the laws of the United States, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 USC 5121-5206)(Stafford Act), may assign to the Secretary of Defense significant, comprehensive responsibilities in the Federal response to a domestic catastrophic incident." Justification: The President has the authority to assign responsibilities, in accordance with applicable law, to the Secretary of Defense and does not need to make such an assignment through the Secretary of Homeland Security.

5. Modify in para (6) subpara (d), "Adjutant" to read "Adjutant(s)". Justification: Since the HSPD refers to "Governor(s)" vice "Governor," the HSPD should refer to "Adjutant(s) General" vice "Adjutant General".

Homeland Security Presidential Directive/HSPD-XX

Subject: Role of the Secretary of Defense in the Response to Certain Domestic Catastrophic Incidents

Purpose

(1) To enhance the ability of the United States to respond to and recover from domestic catastrophic incidents by directing Federal departments and agencies to plan for the possible assignment to the Secretary of Defense, at the direction of the President, significant, comprehensive responsibilities in the Federal Government's response to such incidents.

Definitions

(2) In this directive:

(a) the term "Federal departments and agencies" means those executive departments enumerated in 5 U.S.C. 101 and the Department of Homeland Security; independent establishments as defined by 5 U.S.C. 104(1); government corporations as defined by 5 U.S.C. 103(1); and the United States Postal Service; and

(b) the term "response" means activities that address the short-term, direct effects of an incident, including immediate actions to save lives, protect property, and meet basic human needs, and the execution of emergency operations plans and of incident mitigation activities designed to limit the loss of life, personal injury, property damage, and other harms.

Policy

(3) The Secretary of Homeland Security is responsible for domestic incident management. Pursuant to the Homeland Security Act of 2002, the Secretary is responsible for providing the Federal Government's response to terrorist attacks and major disasters, including managing such response and coordinating Federal response resources.

(4) The Secretary of Defense has traditionally provided essential assistance in support of the response to domestic incidents, and the Department of Defense possesses unique assets and capabilities necessary to conduct and manage the large-scale operations that might be required in the aftermath of a catastrophic incident. To enhance the ability of the United States to respond to and recover from extraordinary catastrophic incidents and thereby protect the American people, it is prudent to establish coordinated and

contingency plans to the Secretary of Defense to rapidly provide such assistance when directed to do so by the President.

(5) The President, pursuant to his authority under the Constitution and the laws of the United States, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 USC 5121-5206) (Stafford Act), may assign to the Secretary of Defense significant, comprehensive responsibilities in the Federal response to a domestic catastrophic incident. Such direction will be communicated to the Secretaries of Defense and Homeland Security and other appropriate heads of Federal departments and agencies.

(6) Factors for consideration prior to issuance of such a presidential directive include, but are not limited to, the following:

(a) the status and effectiveness of the State, local, and private sector response;

(b) the effectiveness of coordination among the Federal departments and agencies and State and local governments in the affected jurisdictions;

(c) the existence of requests for Federal military or disaster relief assistance from the Governor of the affected State(s), and the status of the implementation of the National Response Plan and emergency authorities; and

(d) the need for the involvement of active duty U.S. military forces in the response to the incident, and the need for an integrated or coordinated command structure among the Federal military forces, State National Guard forces under the Adjutant(s) General, the Governor(s), and other Federal and State personnel and assets.

(7) No later than 90 days after the effective date of this directive, the Secretaries of Defense and Homeland Security, in consultation with appropriate heads of other Federal departments and agencies, shall develop, and shall jointly submit to the President for approval through the Assistant to the President for Homeland Security and Counterterrorism, a comprehensive and systematic contingency plan for immediately implementing any Presidential direction made in accordance with this directive. Such plan shall include appropriate mechanisms for cooperation and coordination between the Departments of Defense and Homeland Security and provision for periodic exercises.

(8) This directive shall be implemented in a manner consistent with applicable law and subject to the availability of appropriations.

(9) Nothing in this directive shall be construed to alter, or impede the ability to carry out, the authorities of the principal officers of Federal departments and agencies as heads of their respective agencies. Without limiting the foregoing, nothing in this directive shall be construed to impair or otherwise affect (a) the authority of the Secretary of Defense with respect to the Department of Defense, including the chain of command for the armed forces of the United States under section 162(b) of title 10, United States Code, and the authority of the Secretary of Defense with respect to the Department of Defense under section 113(b) of that title, or (b) the authority of the Secretary of Homeland Security with respect to the Department of Homeland Security or pursuant to the Stafford Act.

(10) The heads of all Federal departments and agencies shall cooperate with the Secretaries of Homeland Security and Defense in carrying out their respective obligations under this directive.

(11) This directive is intended only to improve the internal management of the executive branch of the Federal Government and is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by a party against the United States, its departments, agencies, instrumentalities, or other entities, its officers, employees, or agents, or any other person.

TAB

E

POLICY COORDINATION SHEET

Subject: Attorney General's Opinion on DoD Functioning in the U.S.
Control Number: 051006-20

Title/Organization	Name	Date
General Counsel	Mr. Dell'Orto	**June** 1,2006
PDUSDP		14JUN06

~~FOUO~~

May 01, 2006

TO: David Chu

FROM: Donald Rumsfeld DR

SUBJECT: "Senior Corps"

Attached is a thoughtful e-mail I received through a friend.

Please take a look at it and come back to me with a proposal.

Thanks.

Attach. 4/7/06 McGowan e-mail to Henderson: SD response

DHR.dh
050106-10

OSD 09888-06

11-L-0559/OSD/57954

6/19/2006 5:09:15 PM

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND
READINESS

INFO MEMO

June 16,2006, 1700

FOR SECRETARY OF DEFENSE

FROM: David S. C. Chu, USD(P&R) David S. C. Chu 16 June 06

SUBJECT: Senior Corps -- SNOWFLAKE

- You asked that we look at the feasibility of recruiting senior Americans to potentially serve in non-combat roles, an idea presented by Mr. Richard McGowan.

- The Department has received many letters from citizens beyond our recruiting age limits who have expressed a desire to serve in some capacity since 9/11. **All** claim above average fitness.

- Services have removed many of the non-combatjobs from military structure, however. Many of those are now performed by civilians, either government employees or civilian contractors.

- We have encouraged the Services to establish volunteer registries to try to take advantage of post – 9/11 volunteerism. Each of the Services was also directed to establish a central point of contact for military retiree volunteers. But there is a reluctance to benefit from this volunteerism.

- In 2004, we proposed legislation that would authorize the establishment of auxiliaries similar to the Coast Guard Auxiliary and the Civil Air Patrol. Such organizations could provide useful support to the military services, potentially freeing-up other personnel resources for combat and combat-related missions. Congress declined to act on our proposal.

RECOMMENDATIONS: (1) Direct the Service Secretaries each to forward a plan to use retired military volunteers each to relieve stress on the force. (2) Reinitiate for FY08 the voluntary auxiliary legislation previously proposed to Congress; task each Service to develop proposals for their respective auxiliaries.

Prepared By: Mr. Rich Krimmer, OASD/RA(M&P), (b)(6)

11-L-0559/OSD/57955

OSD 09888-06
6/19/2006 5:08:45 PM

~~FOUO~~

May 26,2006

TO: David Chu

CC: Gen Pete Pace
Gordon England
Eric Edelman

FROM: Donald Kumsfeld D.R.

SUBJECT: Cultural/Language Training

I was struck at the DSLC by the disparity between the various Service approaches to the issues of language training. cultural awareness. and foreign area officer corps creation. It seems that each of them is doing things. hut -- as usual -- they are going off in different directions.

Should we have a more centralized approach, perhaps standardizing the way we do each of these things? Should we make each of the Services a joint "executive agent" for one of them. e g. put the Army overall in charge of a DoD-wide FAO program? Let the Navy be the executive agent for cultural awareness? Should we perhaps consider dividing the program up into regions, and putting different Services in charge of an area. e.g. Army focuses and leads the joint program for the Middle East. the Navy does so for the Pacific, etc? Lots of good language training could be done on-line with programs like Rosetta Stone that he Army and Marines are using, but the Navy and Air Force evidently are not. Who could be in charge of a joint on-line effort like that?

Please get the Services together. have a conversation about this, and come forward with some proposals. We don't need lots of duplication and unnecessary effort.

Thanks

~~FOUO~~

OSD 09889-06
6/19/2006 5 15 40 PM
11-L-0559/OSD/57956

DHR ss
052606-07

Please Respond By 06/27/06

11-L-0559/OSD/57957

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON. D.C. 20301-4000

PERSONNEL AND
READINESS

INFO MEMO

June 14,2006 10:00 PM

FOR SECRETARY OF DEFENSE

FROM: David S. C. Chu, Under Secretary of Defense (P&R)

SUBJECT: Cultural/Language Training – Transformation Has Occurred!
SNOWFLAKE (TAB A)

- What you saw at the Defense Senior Leader Conference was the Services' responses to our continued push for foreign language and regional expertise as a core competency.
- We deliberately chose a strategy of centralized oversight, decentralized execution.
  - The Defense Language Program Directive provides direction for Services to build and execute "joint-focused" programs.
  - A Revised Foreign Area Officer Program Directive establishes joint policies, training standards, and oversight of Services' programs.
  - A new Language Readiness Index provides senior leaders a snapshot of current capability against growing requirements.
    - Self-reported" screening 85% complete for military; 247,000 reported language capability -- 17,000 in Arabic, Chinese, Farsi, Urdu, and Hindi.
    - Combatant Commanders are identifying linguistic and translator needs in planning documents using a planning tool published by the Joint Staff.
  - Established metrics will allow us to monitor all program facets and ensure joint strategic direction.
  - It is important to let Services build their programs – through innovation we will be able to identify proven "best practices" to maximize efficiencies. Programs are being tailored to the Services' unique operating environments and missions.
- The Defense Language Transformation Roadmap directs Components and Agencies toward common results and institutionalizes language and culture as operational skills.
  - The annual Strategic Language List conveys current and future foreign language needs based on a 10-year projection and provides guidance for personnel accession systems.
  - The Services are building heritage recruiting plans to increase organic language and culture capability within the Department.
  - Regional area content is being built into language training, professional military education development and pre-deployment training using common guidelines.

11-L-0559/OSD/57958

OSD 09889-06
6/19/2006 5:15:08 PM

- It is important to let Services build their programs – through innovation we will be able to identify proven "best practices" to maximize efficiencies. Programs are being tailored to the Services' unique operating environments and missions.

- We are also supporting long term change in the American education system through the President's National Security Language Initiative announced on January 6,2006.

- Executive Agents have been appointed.

    - The Army is executive agent for contract language support to deployed forces.
    - The Army is also executive agent for foreign language training at the Defense Language Institute Foreign Language Center, Monterey CA.
    - The Air Force is executive agent for English language training at the Defense Language Institute English Language Center, San Antonio TX.

- Executive Agency does not work well for all activities, however:

    - A result is fragmented, often conflicting, channels for DoD policy and funding, with policy going directly to training institutions and funding going through a multi-layered organizational structure.
    - We are looking at those practices.

Prepared by: Nancy Weaver, nancy.weaver@osd.pentagon.mil, (b)(6)

TAB

A

~~FOUO~~

May 26,2006

TO: David Chu

CC: Gen Pete Face
Gordon England
Eric Edelman

FROM: Donald Rumsfeld DR.

SUBJECT: Cultural/Language Training

I was struck at the DSLC by the disparity between the various Service approaches to the issues of language training, cultural awareness, and foreign area officer corps creation. It seems that each of them is doing things, but -- as **usual** -- they are going off in different directions.

Should we have a more centralized approach, perhaps standardizing the way we do each of these things? Should we make each of the Services a joint "executive agent" for one of them, e.g. put the Army overall in charge of a DoD-wide FAO program? Let the Navy be the executive agent for cultural awareness? Should we perhaps consider dividing the program up into regions, and putting different Services in charge of an area, e.g. Army focuses and leads the joint program for the Middle East, the Navy does so for the Pacific, etc? Lots of good language training could be done on-line with programs like Rosetta Stone that he Army and Marines are using, but the Navy and Air Force evidently are not. Who could be in charge of a joint on-line effort **like** that?

Please get the Services together, have a conversation about this, and come forward with some proposals. We don't need lots of duplication and unnecessary effort.

Thanks.

~~FOUO~~

OSD 09889-06
6/19/2006 5:15:40 PM
11-L-0559/OSD/57961

DHR:ss
052606-07

Please Respond By 06/27/06

11-L-0559/OSD/57962

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND
READINESS

INFO MEMO

June 14,2006 10:00 PM

FOR: SECRETARY OF DEFENSE

FROM: David S. C. Chu, Under Secretary of Defense (P&R)

SUBJECT: Strategic Language Training – Transformation Has Occurred!

- What you saw at the Defense Senior Leader Conference was the Services' responses to our continued push for foreign language and regional expertise as a core competency.
- We deliberately chose a strategy of centralized oversight, decentralized execution.
  - The Defense Language Program Directive provides direction for Services to build and execute "joint-focused" programs.
  - A revised Foreign Area Officer Program Directive establishes joint policies, training standards, and oversight of Services' programs.
  - A new Language Readiness Index provides a snapshot of current capability against growing requirements.
  - Metrics provide oversight of all program facets and ensure joint strategic direction.
  - It is important to let the Services build their programs – through innovation we will be able to identify proven "best practices" to maximize efficiencies. Programs are being tailored to the Services' unique operating environments and missions.
- The Defense Language Transformation Roadmap directs Components and Agencies toward common results and institutionalizes language and culture as operational skills.
  - The annual Strategic Language List conveys current and future language needs on a 10-year projection and provides guidance for personnel management programs.
  - Regional area content is being built into language training, professional military education development and pre-deployment training using common guidelines.
- Executive Agents have been appointed.
  - The Army is executive agent for contract language support to deployed forces and for foreign language training at the Defense Language Institute Foreign Language Center, Monterey CA.
  - The Air Force is executive agent for English language training at the Defense Language Institute English Language Center, San Antonio TX.

Prepared by: Nancy Weaver, nancy.weaver@osd.pentagon.mil, (b)(6)

11-L-0559/OSD/57963

OSD 09889-06

7/5/2006 11:59:51 AM

TAB

A

May *26,2006*

TO: David Chu

CC: Gen Pete Pace
Gordon England
Eric Edelman

FROM: Donald Rumsfeld DR.

SUBJECT: Cultural/Language Training

I was struck at the DSLC by the disparity between the various Service approaches to the issues of language training, cultural awareness, and foreign area officer corps creation. It seems that each of them is doing things, but -- as usual -- they are going off in different directions.

Should we have a more centralized approach, perhaps standardizing the way we do each of these things? Should we make each of the Services a joint "executive agent" for one of them, e.g. put the Army overall in charge of a DoD-wide FAO program? Let the Navy be the executive agent for cultural awareness? Should we perhaps consider dividing the program up into regions, and putting different Services in charge of an area, e.g. Army focuses and leads the joint program for the Middle East, the Navy does so for the Pacific, etc? Lots of good language training could be done on-line with programs like Rosetta Stone that the Army and Marines are using, but the Navy and Air Force evidently are not. Who could be in charge of a joint on-line effort like that?

Please get the Services together, have a conversation about this, and come forward with some proposals. We don't need lots of duplication and unnecessary effort.

Thanks

11-L-0559/OSD/57965

May 08,2006

TO: Gen Pete Pace

CC: Gordon England

FROM: Donald Rumsfeld

SUBJECT: The Guard and Decision Making

What has been done to include the Guard in future strategic resource decision making in a timely manner?

Thanks.

DHR ss
050806-16

Please Respond By 05/24/06

11-L-0559/OSD/57966

OSD 09901-06

6/20/2006 9:10:19 AM

CHAIRMAN OF THE JOINT CHIEFS OF STAFF

WASHINGTON, D.C. 20318-9999

INFO MEMO

CM-0350-06
19 June 2006

FOR SECRETARY OF DEFENSE

FROM: General Peter Pace, CJCS 18 June 06

SUBJECT: The Guard and Decision Making (SF 050806-16)

In response to your question (TAB A), the National Guard Bureau participates in strategic resource decision making through the following routine and specific activities.

- The Army actively coordinates with the National Guard Bureau and Army National Guard staff to ensure appropriate input to applicable Army plans, programs, and policies.
- The *Air* Force integrates Air National Guard leaders within its top three levels of corporate resource decision making.
- The National Guard Bureau is represented on the Deputy's Advisory Working Group, which is focused on Quadrennial Defense Review decisions and their implementation.
- The Assistant to the CJCS for National Guard and Reserve Matters routinely provides a balanced perspective concerning the principles, processes, policies, and systems needed for full Guard integration and best return on investment.
- The Joint Staff uses Service program and budget submissions to conduct analysis for Chairman's Program Recommendations and Assessments and, through my staff, can solicit the National Guard for information to supplement its analysis.

COORDINATION: TAB B

Attachments:
As stated

Prepared By: Vice Admiral E. M. Chanik, USN; Director, J-8; (b)(6)

OSD 09901-06

6/20/2006 9:06:18 AM

~~FOR OFFICIAL USE ONLY~~

TAB

A

May 08,2006

TO: Gen Pete Pace

CC: Gordon England

FROM: Donald Rumsfeld

SUBJECT The Guard and Decision Making

What has been done to include the Guard in future strategic resource decision making in a timely manner?

Thanks.

DHR:ss
050806-16

Please Respond By 05/24/06

11-L-0559/OSD/57969

OSD 09901-06

6/20/2006 9:10:19 AM

TAB

B

TAB B

COORDINATION

USD(Comptroller)	Mr. Patterson	22 May 2006
USD(P&R)	Dr. Chu	12 June 2006
USA	COL Strong	18 May 2006
USAF	Col Venable	30 May 2006

11-L-0559/OSD/57971

~~FOUO~~

April 10,2006

TO: Gen Pete Pace

CC: Gordon England
Fran Harvey
Donald Winter
Michael Wynne

FROM: Donald Rumsfeld

SUBJECT Variance in Cultural Sensitivity Training

Attached is a response I got from David Chu on cultural sensitivity training. It notes that there is a "wide variance in approach and extent across the Services."

Do you have any thoughts on whether that is acceptable?

Thanks.

Attach. USD(P&R) 3/31/06 memo to SD (OSD 05272-06) response to SF#020606-09

DHR.dh
041006-15

Please Respond By *May 18, 2006*

~~FOUO~~

OSD 09904-06
6/20/2006 9:23:46 AM
11-L-0559/OSD/57972

~~FOUO~~

February 06, 2006

TO. David Chu

C C Gen Pete Pace

FROM; Donald Rumsfeld DR.

SUBJECT Sensitivity Training

If you think of what happened with the lie about the Koran causing riots in Pakistan – including deaths, and what is now happening as a result of the Prophet Mohammed cartoons causing riots *in Lebanon and elsewhere*, I *wonder if there* ought to be some special program for the military where our folks are taught about the damage that can be &ne – including lives lost, if something like that triggers riots.

There is a good deal of training about sexual assault, violence, etc., but I don't know how much training there is on this subject. *Please* look into it *and* let *me* h o w .

Thanks.

DHR.ss
020606-09

Please Respond By 03/07/06

APR 0 3 2006

SNOWFLAKE RESPONSE ATTACHED

~~FOUO~~

OSD 05272-06

11-L-0559/OSD/57973

3/31 ✓
1540

PERSONNEL AND READINESS

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

2006 MAR 31 PM 1:59

INFO MEMO

March 31,2006 - 12:00 A.M.

Robert Ranger
3/31

FOR: SECRETARY OF DEFENSE

FROM: DR. DAVID S. C. CHU, USD(P&R) David S.C. Chu 03/31/06

SUBJECT Cultural Sensitivity Training - SNOWFLAKE (Attached)

- Each Military Service is embedding cultural sensitivity training in the range of training activities it conducts (on-line web based courses, formal classroom instruction, pre-deployment seminars, and theater of operations briefings). Even the Defense Equal Opportunity Management Institute now includes cultural sensitivity training in its curriculum.

- There is wide variance in approach and extent across the Services. We will incorporate metrics to track cultural training in our quarterly Status of Forces review, in which we evaluate the performance of personnel programs with the Military Departments. This will also give us the opportunity to exchange views on best practices.

- The Quadrennial Defense Review mandates that cultural training be included in the war colleges' curricula. This is beginning, and we will likewise track it.

Attachment:
As stated

Prepared by: Clarence A. Johnson, Principal Director, OUSD (EO)

MA SD		SMA DSD	
SA SD	3/31	SA DSD	
EXEC SEC	M3/31	1540	
USR MA		STF DIR	

OSD 05272-06

CHAIRMAN OF THE JOINT CHIEFS OF STAFF

WASHINGTON, D.C. 20318-9999

INFO MEMO

CM-0351-06
19 June 2006

FOR: SECRETARY OF DEFENSE

FROM: General Peter Pace, CJCS 18 JUN 06

SUBJECT: Variance in Cultural Sensitivity Training (SF 041006-15) and Cultural/Language Training (SF 052606-07)

In response to your questions (TAB A), the following is provided as an interim response.

- I reviewed the cultural sensitivity training programs conducted by the Services, USJFCOM, and USCENTCOM (TAB B). While the training targets specific requirements and scenarios our troops face during deployments and throughout their careers, I believe that we can do more to standardize and consolidate training.
- I fully support Dr. Chu's recommendation to incorporate metrics, track cultural training, and include results in the quarterly status of forces review. This should be the first step to developing a more standardized approach.
  - My staff is working with Dr. Chu in his efforts to develop an appropriate training plan for the Department.
- Additionally, the Joint Staff is conducting a review of cultural and regional awareness training across the Services to improve training and professional military education. The Deputy Secretary of Defense will receive our findings for consideration in preparing the FY 08 President's budget submission and the FY 08-13 Future Years Defense Program.

COORDINATION: TAB C

Attachments:
As stated

Prepared By: RADM Donna L. Crisp, USN, Director, J-1; (b)(6)

OSD 09904-06
6/20/2006 9:23:06 AM

~~FOR OFFICIAL USE ONLY~~

TAB

A

~~FOUO~~

April 10,2006

TO: Gen Pete Pace

CC: Gordon England
Fran Harvey
Donald Winter
Michael Wynne

FROM: Donald Rumsfeld

SUBJECT: Variance in Cultural Sensitivity Training

Attached is a response I got from David Chu on cultural sensitivity training. It notes that there is a "wide variance in approach and extent across the Services."

Do you have any thoughts on whether that is acceptable?

Thanks.

Attach. USD(P&R) 3/3 1/06 memo to SD (OSD 05272-06) response to SF#020606-09

DHR.dh
041006-15

Please Respond By May 18, 2006

OSD 09904-06
6/20/2006 9 23 46 AM
11-L-0559/OSD/57977

~~FOUO~~

1:59 February 06, 2006

TO David Chu

CC Gen Pete Pace

FROM: Donald Rumsfeld DR.

SUBJECT: Sensitivity Training

If you think of what happened with the lie about the Koran causing riots in Pakistan – including deaths, and what is *now* happening as a result of the Prophet Mohammed cartoons causing riots in Lebanon and elsewhere, I wonder if there ought to be some *special* program for the military where our folks are taught about the damage that can be done – including lives lost, if something like *that* triggers riots.

There is a good deal of training about sexual assault, violence, etc., but I don't know how much training there is on this subject. Please *look* into it and *let me* know.

Thanks.

DHR.ss
020606-09

Please Respond By 03/07/06

4/10

APR 0 3 2006

SNOWFLAKE RESPONSE ATTACHED

MR. Col Lengyel

~~FOUO~~

DSD 05272-06

11-L-0559/OSD/57978

3/31 ✓ 1540

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND READINESS

INFO MEMO

March 31,2006 – 12:00 A.M.

Robert Ranger 3/31

FOR: SECRETARY OF DEFENSE

FROM DR. DAVID S. C. CHU, USD(P&R) David S.C. Chu 31/3/06

SUBJECT: Cultural Sensitivity Training – **SNOWFLAKE** (Attached)

- Each Military Service is embedding cultural sensitivity training in the range of training activities it conducts (on-line web based courses, formal classroom instruction, pre-deployment seminars, and theater of operations briefings). Even the Defense Equal Opportunity Management Institute now includes cultural sensitivity training in its curriculum.

- There is wide variance in approach and extent across the Services. We will incorporate metrics to track cultural *training* in our quarterly Status of Forces review, in which we evaluate the performance of personnel programs with the Military Departments. This will also give us the opportunity to exchange views on best practices.

- The Quadrennial Defense Review mandates that cultural training he included in the war colleges' curricula. This is beginning, and we will likewise track it.

Attachment:
As stated

Prepared by: Clarence A. Johnson, Principal Director, OUSD (EO)

MA SD		SMA DSD	
SA SD	3/31	SA DSD	
EXEC SEC	M3/31	1540	
ESR MA		STF DIR	

OSD 05272-06

11-L-0559/OSD/57979

~~FOUO~~

May 26,2006

TO: David Chu

CC: Gen Pete Pace
Gordon England
Eric Edelman

FROM: Donald Rumsfeld DR

SUBJECT: Cultural/Language Training

I was struck at the DSLC by the disparity between the various Service approaches to the issues of language training, cultural awareness. and foreign area officer corps creation. It seems that each of them is doing things, but -- as usual --they are going off in different directions.

Should we have a more centralized approach, perhaps standardizing the way we do each of these things? Should we make each of the Services a joint "executive agent" for one of them. e.g. put the Army overall in charge of a DoD-wide FAO program? Let the Navy be the executive agent for cultural awareness? Should we perhaps consider dividing the program up into regions, and putting different Services in charge of an area. e.g. Army focuses and leads the joint program for the Middle East. the Navy does so for the Pacific. etc? Lots of good language training could be done on-line with programs like Rosetta Stone that he Army and Marines are using, hut the Navy and Air Force evidently are not. Who could be in charge of ajoint on-line effort like that?

Please get the Services together, have a conversation about this, and come forward with some proposals. We don't need lots of duplication and unnecessary effort.

Thanks.

~~FOUO~~

OSD 09889-06
11-L-0559/OSD/57980
6/20/2006 9:16:15 AM

~~FOUO~~

DHRss
052606-07

Please ***Respond By*** *06/27/06*

~~FOUO~~

TAB

B

23 May *06*

TAB B

INFORMATION PAPER

Subject: Cultural Sensitivity Training

1. Purpose. To provide additional information regarding cultural sensitivity training.

2. Key Points

- US Army provides comprehensive training to officers and enlisted personnel. All junior officers receive cultural training at basic and advanced courses; NCO education includes cultural training at every level; and combat training centers' curriculum incorporates cultural training.

- US Navy provides classes to all Sailors and deploying DOD civilians on foreign cultures (cultural sensitivity) and focused cultural awareness and language training aligned to mission requirements and assignments.

- US Air Force uses a tailored approach tied to an Airman's lifecycle and their mission requirements and utilization. Cultural familiarity education will be incorporated into commissioning and NCO curriculums. Training will be conducted for all Airmen in concert with deployed operations and into Air War College studies for institutional leaders.

- US Marine Corps teaches operational culture -- those aspects of cultural understanding and knowledge that will make Marines more effective in planning and executing operations, particularly with indigenous cultures. All Marines deploying in support of OIF, OEF, and other global commitments receive integrated pre-deployment training.

- USCENTCOM requires all personnel deployed to the area of responsibility to receive cultural awareness training and believes the level of cultural sensitivity training members possess as a unit upon arrival is acceptable. USCENTCOM did express concern over training of some individual augmentees; however, USCENTCOM augments training for all members on arrival.

- USJFCOM includes cultural sensitivity training in Joint Staff training (at the Joint Staff trainer level) by including role play (Iraqi people); subject matter experts [from theater, DOS, USAID, DOJ, and DOD); and scenarios that include cultural and religious challenges.

3. Recommendation. None, provided for information only.

Prepared by: RADM Donna L. Crisp, USN; Director, J-1; (b)(6)

11-L-0559/OSD/57983

TAB

C

TAB C

COORDINATION

USA	GEN Schoomaker	2 May 2006
USN	CAPT Wode	9 May 2006
USAF	Col Venable	10 May 2006
USMC	Col Dunahoe	10 May 2006
USJFCOM	Col Thompson	9 May 2006
USCENTCOM	Col Ellinger	9 May 2006

TAB A

~~FOUO~~

May 03,2006

Nicaragua

TO: Gen Pete Pace

CC: Eric Edelman

FROM: Donald Rumsfeld DR.

SUBJECT Nicaragua's Help in Iraq

The MoD of Nicaragua said they would be willing to help in Iraq if they could get the necessary financial support.

Thanks.

DHR dh
050206-07

3 May 06

Tab A

~~FOUO~~

OSD 09905-06

11-L-0559/OSD/57986

6/2012006 10:09:20 AM

JUN 2 0 2006

TO: Dr. Eliot Cohen

CC: Gen Pete Pace
Fran Harvey

FROM: Donald Rumsfeld

SUBJECT: Army Divorce Rates

I have asked the Secretary of the Army to get in touch with you about divorce rates. I think the data you were looking at may be old. There was a peak of officer divorce rates in FY '04, but it dropped down in FY '05. We don't have the data for FY '06 yet. It looks to me as though Army officer divorce rates were actually lower in '05 than they were in '03 or '04.

It looks as though there has been an increase in enlisted Army divorce rates for women, but not for men. As for the Army officer divorce rates, the male and female both rose in '04, but both were down in '05.

In any event, I would like you to talk to Fran Harvey, so that whatever data you use is accurate and up-to-date.

Thanks.

Attach: Army divorce rate charts

DHR.ss
SF061906-21

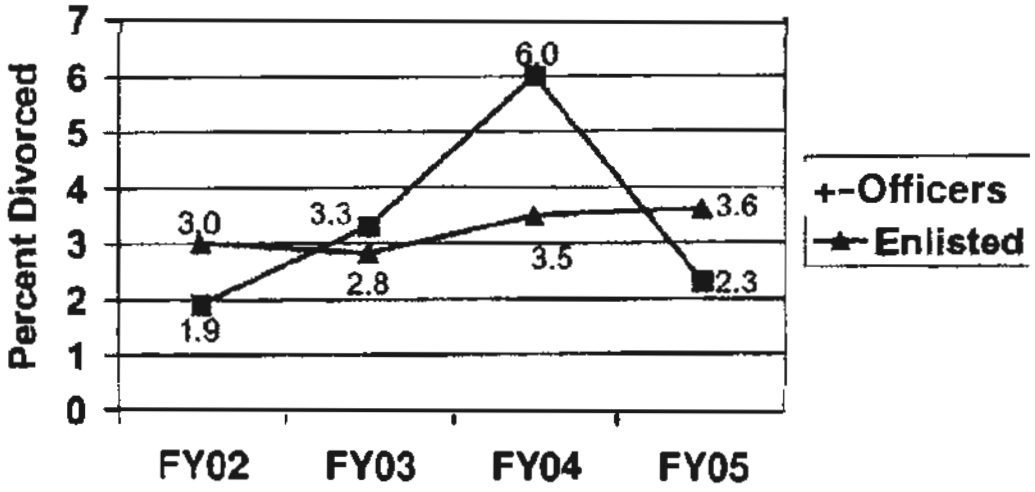
292

20Jun06

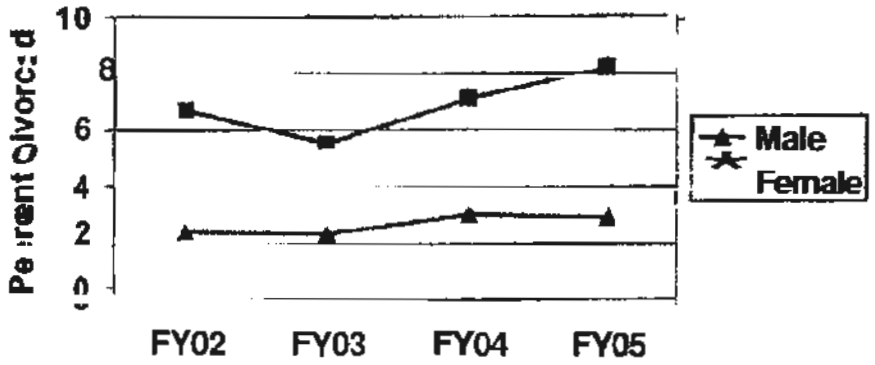
OSD 09907-06
6/20/2006 1:11:05 PM

11-L-0559/OSD/57987

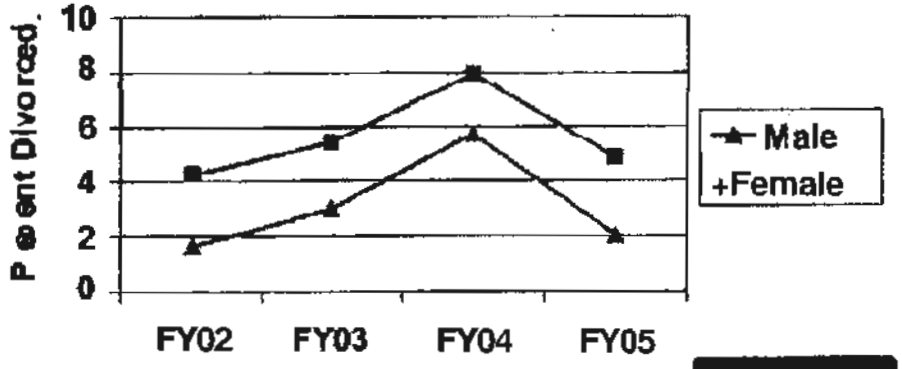
Army Divorces by Rank FY02-FY05



Enlisted Army Divorces by Gender FY02-FY05



Officer Army Divorces by Gender FY02-FY05



.TAB B

11-L-0559/OSD/57988

THE SECRETARY OF DEFENSE
WASHINGTON

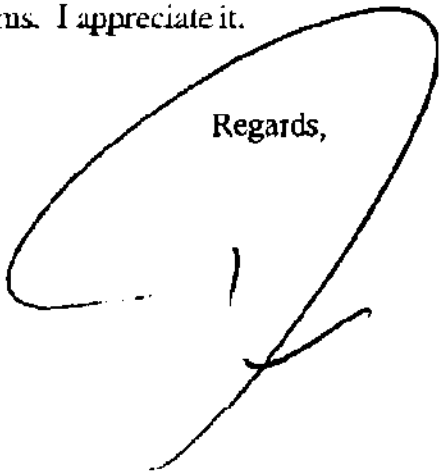
JUN 26 2006

Dr. Eliot A. Cohen
Robert E. Osgood Professor
Johns Hopkins SAIS
1619 Massachusetts Ave., NW
Washington, DC 20036

Dear Eliot,

Thanks for your note. I will look into each one of those items. I appreciate it.

Regards,



OSD 09907-06

11-L-0559/OSD/57989

DHR 6/23

23 June 2006

Dear Secretary Rumsfeld:

Thanks for the note about divorce rates in the Army officer corps. You're right: I must have been looking at the 2004 rates, and I am glad that the numbers went down sharply in 2005. My apologies. I hope that that remains true when the numbers for 2006 are available: I know that the Army has made a big push in this area but I also suspect that there are limits to what extensive counseling can do. Common sense tells me that periodic one year separations, particularly when one spouse is in a combat zone, just cannot be good for marriages.

Let me pursue this matter a bit further, though, just to make myself clear, and perhaps to raise issues you may wish to explore further. My view is that the Army is under a lot of stress, and is fraying – not that it is in a 1971-type situation of semi-collapse, but that the strain is there, and is cumulative. Divorce rates are only one indicator. Here are some others:

-- changing standards for enlistment (including increasing acceptance, even by small margins, of lower intelligence standards, higher ages, and more records of petty crime or misdemeanor);

-- I have been told that there is a higher rate of officers turning down battalion or brigade command; I have not been able to find the statistics on that point, however;

-- the continued use of stop loss about which I have heard many complaints. In particular, many officers and NCO's have assured me that a lot of the bigh re-enlistment rate reflects a calculation that one will have another tour in Iraq or Afghanistan regardless, because of stop-loss, and that therefore one should take the bonus that goes along with re-enlistment. I would recommend a study of "stop loss-induced re-enlistment," if that has not already been done.

-- increases in drug or alcohol abuse rates, as well as PTSD in various forms (again, I haven't seen the latest statistics, but there is a powerful recent Journal of the American Medical Association article, using 2004 data).

-- I do not know the figures on senior captains trying to get out; worth looking at, as is the promotion rate to major, which is at 98% instead of a more normal 80% or less.

Beyond this, I freely confess that much of what I think is driven by a pretty extensive network of former students and friends at the company- and field-grade levels, and what they report back. Uniformly they describe a force under considerable stress. Two days ago, one infantry major who will be sticking it out for the long haul said to me, "a few more years of this and we'll be in really serious trouble," or as a lieutenant colonel said, 'The wheels aren't coming off yet, but eventually, if this keeps up, they will." This is one of those cases, it seems to me, where the full picture does not show up in the statistics. I

1

think there is also the problem of clutching on to the pieces of good news while not taking in the full picture, which is more troubling.

I don't have solutions: I would have liked a larger force a few years ago, but it seems to me its too late to hope for a large pool of high quality recruits, and its more important to keep quality high than to go for numbers. But I do think its important to be candid with ourselves about the strain our soldiers are experiencing.

Finally, on a not-entirely related point, I am very concerned by the perceptions of military advisory service in Iraq by field grade officers that I know. They do not believe that the system will reward them for this important and dangerous duty, they believe that they are under-resourced and manned (ten per battalion just is not enough, they tell me), and that although there are good and able officers and NCO's in this mission, too many are recalled reservists and the second string. Greg Jaffe's reporting in the Wall Street Journal was, I believe, entirely sound on this point; by coincidence, I know some of the officers in the unit he described.

I do hope that this is helpful to you.

Eliot Cohen

Life-Saving Iraqi Night Mission Encourages Fledgling Military

By GREG JAFFE
June 17,2006

CAMP TAJI, Iraq -- In late May, Lt. Col. Charles Payne, who served as a U.S. adviser to the Iraqi Army here, began pushing the Iraqis to take a more aggressive approach to hunting down insurgents. It didn't take long before the new strategy produced harrowing results.

Col. Payne laid out his new plan for his Iraqi counterpart, Col. Saad, one evening in late May. (The Iraqi colonel, whose family has been threatened by insurgents, asked that his full name not be used.) It was just after 11 p.m., and the generator providing electricity to Col. Saad's small office had been broken for hours, so Col. Saad was working by the light of a flashlight and a half dozen glow sticks that he got from Col. Payne. A large plate of rice and charred goat sat half-eaten on Col. Saad's desk. The smells of cigarette smoke, goat and sweat hung in the air.

Col. Payne told Col. Saad that the U.S. forces were too hunkered down on the U.S. side of Camp Taji to have a sense for what was happening in big swaths around Camp Taji. "They are just totally removed from the battlefield," be said.

SEE A PHOTO SLIDESHOW

Greg Jaffe

Col. Payne and Col. Saad's *troops* met at Camp Taji before their crucial mission.

To throw the enemy off balance, Iraqi troops needed to get out into the countryside where the enemy was active, Col. Payne said. He suggested a series of night patrols involving a dozen Iraqi soldiers and three or four U.S. advisers. The first patrol took place May 16. For eight stultifying hours the Iraqis and the Americans slogged through dense palm groves, swatted away at ravenous mosquitoes and hiked across muddy fields. They found nothing.

Three days later, Col. Saad chose a mostly unpopulated area a few miles northwest of Camp Taji for the second night mission. The Iraqis had received a vague tip that insurgents had set up a small roadside-bomb-making cell in the region. At about 6:45 p.m., 10 Iraqi and three U.S. soldiers from Col. Payne's advisory team left Camp Taji.

A few hours into the foot patrol, soldiers from the team say they noticed a white Daewoo sedan turn down a dirt road into a dense palm grove. The car, which was out in violation of the province's 9 p.m. curfew, rolled to a stop by a small shack. The Iraqi and American soldiers decided to search it and detain the driver and sole passenger for questioning.

Master Sgt. John McFarlane and three Iraqi soldiers handcuffed the men from the car and started to question them. Staff Sgt. Howard "Skippy" Hughes, who was standing about 15 yards away, flipped down his night-vision goggles and began scanning the palm grove for the enemy. He says he thought he saw something that looked like a man squatting. Slowly and cautiously, he recalls walking toward the mysterious shape. As he drew closer, the squatting man rose up. Sgt. Hughes says he heard him chamber a round in his rifle.

"Hit the deck!" he screamed.

Milliseconds later, the enemy unleashed a torrent of rifle and machine-gun fire. One of the Iraqi soldiers was hit in his upper thigh and was bleeding badly. Cpl. Tyler Christensen, a medic on Col. Payne's advisory team, rushed over to tie a tourniquet around his leg. Soon he was drenched in the Iraqi's blood.

The other Iraqi and American soldiers say they emptied their weapons into the palm grove, killing three men and driving off the rest. The firefight, which lasted about two minutes, was so intense. Sgt. McFarlane says, that when he closed his eyes shortly after the fight he could still see the red streaks of tracer fire coming at him.

When the battle was done, the Americans and the Iraqi soldiers jumped into their vehicles to head back to base with the two men from the car. As they were pulling away, the terrifying night took a bizarre turn.

A man stumbled from the palm grove. His hands were tied behind his back and a blindfold hung loosely around his neck.

"Mister. Mister. Come mister. I am problem," he sobbed in broken English.

Fearing another ambush, the American and Iraqi soldiers approached cautiously. When they realized he wasn't a threat, they freed his hands and took him back to Camp Taji. It was 2 a.m. when they arrived at the base.

The kidnap victim, a 50-year-old employee of the Iraqi Ministry of Defense, told an interrogator back at Camp Taji that had been sitting at a tea stand a half mile from the base when four men carrying rifles pushed him into the back of their car and drove him to the small shack in the palm grove. They then beat him with a metal cable, he says.

"We have been watching you and know where you work," the man says his kidnappers screamed.

The kidnappers had just begun to set up a video camera to film his execution when they heard the Iraqi and American patrol questioning the two men in the white Daewoo sedan just outside the shack. They grabbed their guns and headed into the palm grove. A few seconds later, the kidnap victim says he heard a sustained volley of gunfire.

When the shooting stopped, he realized he was alone and began to search for help. He scratched his face against a wall until his blindfold slipped down low enough for him to see and then walked out in the palm grove.

After his interview with the interrogator, the kidnapping victim met with Col. Payne, Col. Saad and the other Iraqi and American soldiers who had saved his life. He lifted up his sweat-stained shirt and showed them the welts and bruises covering his back.

"God sent you to save me," he said as tears streamed down his face.

Col. Payne and Col. Saad finally fell off to sleep around 5:30 a.m. When they woke up they immediately met to start planning the next three night missions. Both men were still giddy. "Every time I think about what happened last night I get a lump in my throat," Col. Payne said.

The American colonel asked Col. Saad what he wanted to name the next night mission. "Operation Candy Rabbit," Col. Saad suggested. A few weeks earlier Col. Payne had given Col. Saad a chocolate Easter rabbit mailed to him in a care package from home.

"Operation Candy Rabbit it is," Col. Payne replied.

Write to Greg Jaffe at greg.jaffe@wsj.com

Wall Street Journal
June 17, 2006
Pg. 1

A Camp Divided

As U.S. tries to give Iraqi troops more responsibility, clash of two American colonels shows tough road ahead.

By Greg Jaffe

Camp Taji, Iraq--This sprawling military base is divided down the middle by massive concrete barriers, a snaking fence and rifle-toting guards. On one side, about 10,000 U.S. Army soldiers live in air-conditioned trailers. There's a movie theater, a swimming pool, a Taco Bell, and a post exchange the size of a Wal-Mart, stocked with everything from deodorant to DVD players.

On the other side are a similar number of Iraqi soldiers whose success will determine when U.S. troops can go home. The Iraqi troops live in fetid barracks built by the British in the 1920s, ration the fuel they use to run their lights and sometimes eat spoiled food that makes them sick.

The only soldiers who pass regularly between the two worlds are about 130 U.S. Army advisers, who live, train and work with the Iraqis.

For many of these advisers, the past six months have been a disorienting experience, putting them at odds with their fellow U.S. soldiers and eroding their confidence in the U.S. government's ability to build an Iraqi force that can stabilize this increasingly violent country.

Army commanders back in the U.S. "told us this was going to be the most thankless and frustrating job we have ever held, and boy, were they right," says Lt. Col. Charles Payne, who until last month oversaw about 50 Army advisers.

He and fellow advisers say U.S. troops on the American side of the base saddle Iraqis with the least-desirable missions and often fail to provide them with the basics they need to protect themselves against insurgent attacks. "They treat the Iraqis with utter scorn and contempt," Col. Payne says. "The Iraqis may not be sophisticated, but they aren't stupid. They see it."

Col. James Pasquarette, who commands most of the soldiers on the U.S. side of Camp Taji, calls those claims "totally ridiculous." He says he's proud of what the Iraqi units have achieved in the region and has made supporting them his top priority, after ensuring his own troops have the protection they need. But he worries that if the Iraqis are given too much latitude to execute challenging missions too quickly, they will alienate Iraqi civilians with heavy-handed tactics.

He says Col. Payne and his fellow advisers have "gone native."

Though the divide here at Camp Taji is extreme, it reflects a growing fiction throughout this war-torn country. No one on either side of the divide expects the Iraqi troops to be trained, equipped or housed to U.S. standards. But if U.S. troops are going to go home, U.S. commanders must allow Iraqis to take a far greater role in planning operations and taking the fight to the enemy, senior military officers say.

Right now, Iraqi Commanders and some of their U.S. advisers say that isn't happening enough. Part of the reason, U.S. officials say, is that widespread Iraqi corruption has made it hard for the fledgling Iraqi government to supply their troops with basics like good food, batteries arid fuel. But Iraqi soldiers and their U.S. advisers say the problem extends beyond basic supply issues. They complain that U.S. troops, bunkered down on large, fortified bases, treat Iraqi forces more like a problem than a partner. U.S. forces "don't talk to us," says Col. Saad, a senior Iraqi commander on Camp Taji. The Iraqi colonel, whose family has been threatened by insurgents, asked that his full name not be used.

U.S. commanders counter that there are huge risks to giving the Iraqi army too big a role right now. They worry some Iraqis will leak word of impending operations to the enemy or use military force to settle sectarian scores. Many U.S. commanders say Iraqi forces aren't as disciplined as U.S. troops and are too prone to abuse civilians and detainees.

The debate raises difficult questions for U.S. commanders, as they plot the way forward in Iraq: Should Iraqi units be held to the same standards as U.S. units? What happens when the Iraqis' solution is at odds with the American commander's strategy?

Earlier this spring, the tension between the two sides at Camp Taji reached the breaking point when the Iraqi army brigade that Col. Payne was advising leveled two dozen roadside kiosks. The Iraqi soldiers said insurgent snipers, who had killed and wounded Iraqi troops, used the kiosks for cover.

Col. Pasquarette thought destroying the kiosks would only enrage locals and drive them to support the insurgents. "This was a great day for the terrorists," he recalls telling Col. Payne on the day that the Iraqi army flattened the fruit and vegetable stands.

Col. Payne says the Iraqi army bulldozed the kiosks -- consisting mostly of palm fronds suspended by bamboo poles -- to protect Iraqi soldiers. "When I first heard what they had done, my initial response was, 'I am all for it,' " Col. Payne says. "This is not a law and order situation. This is a war."

Late last month, Col. Pasquarette asked that Col. Payne be dismissed from his position, just four months after the two men started working together. Col. Payne was then assigned to a deskjob in Baghdad.

The unit Col. Payne headed is at the leading edge of a major shift in U.S. strategy. Until last summer, the U.S. military saw its primary mission as fighting insurgents. With pressure mounting to bring the 130,000 U.S. troops in Iraq home, President Bush decided the military's main effort should instead focus on training Iraqis to take its place.

To speed development of Iraqi army forces, about 3,000 U.S. soldiers were placed with Iraqi units throughout the country. The teams live and work with Iraqi soldiers in places such as Camp Taji.

In November 2005, Col. Payne came back from retirement to lead his team. The colonel had served 28 years in the Army, fought in the Grenada invasion and taught history at West Point. He retired in July 2001. A few weeks later, terrorists struck the Pentagon and the World Trade Center. Col. Payne called the Army and volunteered to return. "There was a chuckle on the end of the phone," he says. The Army told him he wasn't needed.

Four years later, with the Army stretched thin by the war, the 50-year-old soldier, who was teaching at Virginia Polytechnic Institute, called again. This time, the Army was eager to send him to Iraq. In November, he was told he had 23 days to report to Fort Carson, Colo., and link up with his unit. His Wife was "very unhappy," he says. Col. Payne says he was determined to go. "The nation is at war and

all real soldiers want to be where the action is."

Col. Pasquarette, a former college basketball player, took command of his 6,000-soldier brigade in June 2005. Before that, the 45-year-old had attended Harvard's Kennedy School of Government, worked for the Joint Chiefs of Staff in the Pentagon and served as an aide-de-camp to a four-star general.

The two men's troops arrived in Iraq in December 2005 and settled on opposite sides of Camp Taji, a sprawling former Iraqi army base, about 20 miles north of Baghdad. Col. Payne's group consisted of 50 U.S. soldiers, assigned to advise the Iraqi military. His team was one of the few at Camp Taji that didn't report to Col. Pasquarette.

The 2,500-soldier Iraqi brigade that Col. Payne was advising had formed 11 months earlier and had been fighting nonstop. The Iraqis had scrounged all of their tanks and armored personnel carriers -- most of which were at least 30 years old -- from a massive junkyard on the Iraqi side of Camp Taji. When something broke, Iraqi soldiers retreated to the scrapyard where they would pillage rusting hulks for spare parts. Of the $260 billion spent on the Iraq war since 2003, about $10 billion has gone to build Iraqi army and police forces.

The U.S. officers bonded quickly with their Iraqi counterparts. In January, Maj. Michael Jason, who leads one of the advisory teams, was on patrol with a 42-year-old Iraqi colonel when a terrified farmer told them he had found bodies in a field. He then led them to the corpses of 11 Iraqi army soldiers who had been headed home on leave. Each had been beaten, blindfolded and shot in the head. Their Iraqi army identification cards had been taken from their wallets and pinned to their shirts by insurgents who regularly target Iraqi forces.

Maj. Jason, a Roman Catholic, and his Iraqi counterpart, Col. Khalid, a Muslim, kneeled next to the bodies and prayed. The U.S. Army asked that Col. Khalid's full name be withheld for his safety. That night, Maj. Jason, a 33-year-old West Point grad, wrote an email home describing his Iraqi colleague's bravery and sacrifice.

"Col. Khalid's children have to move constantly for fear of their lives. When he goes home on leave, he cannot tell anyone for security reasons. He just disappears. He drives 90 mph with a pistol tucked in the small of his back and his ID hidden. I love these guys, no s-t," he wrote. A month later, Col. Khalid's brother, also an army officer, was kidnapped. Insurgents killed him and dumped his body on his parents' doorstep. Col. Khalid couldn't go to the funeral for fear that he would be assassinated. So Maj. Jason and soldiers in the unit mourned with him at Camp Taji.

In March, Col. Khalid left the battalion for a safer assignment, which doesn't require him to leave the base.

As the U.S. advisers grew closer to the Iraqis, they also grew more frustrated with U.S. soldiers on the other side of the base.

Shortly after Col. Pasquarette arrived at Camp Taji, he beefed up the number of guards and armored vehicles at the gates separating the U.S. and Iraqi sides of the base. "Securing my [base] is my No. 1 mission. I am risk averse here," he says. The U.S. advisers to the Iraqis thought the additional guards and guns were unnecessary and only served to make U.S. soldiers more suspicious of the Iraqis.

When the advisers asked if they could bring an Iraqi colleague to eat with them on the American side of the base, they say they were shocked at the response. They were told that the presence of an Iraqi officer

in the dining hall might upset the U.S. soldiers.

"These kids go outside the gate and deal with a very hostile environment. They need a place where they can relax and let their guard down," says Lt. Col. Kevin Dixon, Col. Pasquarette's deputy commander. He says the policy was driven by the bombing of a dining facility in Mosul in 2004 by an Iraqi who had sneaked in.

The advisers felt differently. "We really believe there is a systemic contempt for Iraqi soldiers," says Master Sgt. John McFarlane, a senior enlisted adviser to the Iraqis at Camp Taji. The policy has since been amended to allow advisers to eat with Iraqi officers on the U.S. side if they file a letter in advance with the base's security office.

One of the Iraqi army's primary jobs in the Taji area is to guard water-purification substations that provide most of Baghdad's drinking water. Last summer, insurgents blew up one of the substations, cutting off water for two weeks. To ensure that didn't happen again, Iraqi army units were dispatched by the U.S. to guard the sites. Iraqi soldiers began to take regular sniper fire there.

In January, the U.S. advisers asked Col. Pasquarette for help installing barriers around one of the substations, to shield the Iraqis from snipers. Col. Pasquarette asked one of his units to help. Weeks passed, but help never came. American engineering units were too busy fortifying the U.S. side of Camp Taji and bases around it, says Maj. Martin Herem, who handled the request.

On Feb. 28, a sniper shot in the back one of the Iraqi soldiers at the water station. The soldier bled to death. Three weeks later, a sniper killed a second Iraqi soldier who was on patrol near the water station. Iraqi troops said that both times snipers used the small fruit and vegetable stands lining a nearby road for cover. The Iraqi army couldn't return fire without killing shopkeepers and customers.

When the Iraqi soldiers ran over to ask people who had been shooting at them, locals said they hadn't seen anything. It's dangerous for locals to be seen helping the U.S. Army or the Iraqi army.

The day after the second killing, Col. Saad, an Iraqi colonel in the unit Col. Payne was advising, ordered his men to tell the shopkeepers to empty the vegetable stands. The Iraqi soldiers then bulldozed the stands. Col. Saad says he destroyed the kiosks to protect his soldiers.

When Col. Pasquarette learned about the incident, he was furious. The Iraqis' actions ran completely counter to his strategy. He had told his soldiers to focus less on killing insurgents and more on reconstruction programs designed to win support of the people.

"When you go lethal or destroy property there may be a short-term gain, but there is a long-term loss," he says. He saw the move as a throwback to the Saddam Hussein era when the army was used to quell unrest and inflict mass punishment.

Because the Iraqi troops operate in his sector, Col. Pasquarette oversees them. He called Col. Payne into his office and demanded that he tell Col. Saad to have his soldiers apologize and pay reparations to the shop owners.

Col. Payne passed along the orders. But Col. Saad says he refused to follow them. "Here in Iraq if someone makes a mistake, you punish them," he says, referring to the shop owners' failure to give Iraqis information about the snipers. "If you give him money, he will repeat the mistake. And he will consider the person who gave him the gift an idiot."

11-L-0559/OSD/57998

The next day, Col. Pasquarette met with Col. Saad's Iraqi superior and told him about the dispute. The Iraqi general fired Col. Saad. Later that day, three low-ranking Iraqi soldiers, accompanied by about a dozen Americans, passed out the reimbursement forms.

The Iraqi officers in Col. Saad's brigade felt betrayed. On March 21, just before midnight, four senior officers stopped by Col. Payne's office and threatened to resign. "They were furious," says Col. Payne. Two days later, Col. Saad was quietly re-hired.

Col. Payne says he is still angry that neither Col. Pasquarette nor his subordinate commanders talked to Col. Saad to hear his side of the story. "This is a respect issue. These guys don't respect the Iraqis," Col. Payne says.

"Personally I don't think there was anything to discuss," Col. Pasquarette says.

In the days that followed, the relationship between Col. Payne and Col. Pasquarette grew more tense. In mid-March -- about the time the Iraqis flattened the vegetable stands -- insurgents attacked an Iraqi army patrol base in Tarmiyah, a city of about 50,000, a short drive from Camp Taji. One Iraqi soldier from Col. Saad's brigade was killed by a rocket-propelled grenade and another was shot in the head by a sniper. The next day, four of Col. Saad's soldiers died when their armored personnel carrier hit a roadside bomb. The blast threw the turret of the vehicle about 30 yards and lopped off the head of one of the Iraqi soldiers inside, U.S. and Iraqi officers say.

Senior Iraqi officials in the Ministry of Defense were convinced Tarmiyah was a hotbed of insurgent activity. Col. Pasquarette says he was told by his commander in Baghdad to clear the city of insurgents.

Col. Pasquarette and his team spent several days building a plan before he invited Col. Payne, Col. Saad and Col. Saad's commander to the U.S. side to explain it.

The two Iraqi officers were led through a 208-slide PowerPoint briefing, in which all the slides were written in English. The six areas the Iraqi troops were supposed to occupy were named for New England cities, such as Cranston, Bangor and Concord. The Iraqi officers, who spoke only Arabic, were dumbfounded. "I could see from their body language that both of them were not following what was going on," says Maj. Bill Taylor, Col. Payne's deputy.

Once the plan was explained to them through an interpreter, the Iraqis strongly disagreed with it. Col. Pasquarette planned to surround the city with razor wire and set up checkpoints to search all cars moving in and out of the city. U.S. and Iraqi soldiers would then begin regular foot patrols through the city to gain intelligence on insurgents. The centerpiece of the plan was $5 million in reconstruction projects.

Col. Pasquarette argued that the projects would help the U.S. win support of the city's powerful mayor, Sheik Sayid Jassem, who had been detained by U.S. forces in the early days of the occupation for supporting the insurgency. He also thought the projects would turn the people to the side of the new Iraqi government.

The Iraqis favored a harder-nosed approach. They wanted to conduct house-to-house searches and find a way to put pressure on the mayor, who they insisted was still supporting insurgents. They suggested shutting Tarmiyah's business district down for a week. Once the mayor had been cowed with the stick, they favored dangling the $5 million in reconstruction funds.

Col. Pasquarette says the Iraqi approach would have alienated the people in Tarmiyah. He rejected it and stuck to his plan. Although the operation hasn't netted any insurgents, he says people are out shopping and businesses that had been closed are bustling as a result of the checkpoints and foot patrols. The U.S. military is bankrolling a pipeline that will bring potable water into the city, building medical clinics and repairing the main road.

Attacks in the city are down substantially since March, though they have begun to climb of late, Col. Pasquarette says. Still, he says the operation was a success because residents feel safer. He doubts the city was ever really a major insurgent hotbed. "We were all wrong ahout Tarmiyah," he says.

Col. Saad and Col. Payne say the insurgents have simply moved outside the city's gates.

Gen. George Casey, the top military officer in Iraq, acknowledges it has often been hard for U.S. commanders to let Iraqis take over the fight. "We are so mission-oriented and so focused, we tend to want to do everything ourselves," he says. "It is a constant hattle ....I would hope that when the Iraqis have ideas we try to help them execute them."

Iraqi troops "have never betrayed their U.S. advisory teams," adds Lt. Gen. Martin Dempsey, who is overseeing the effort to train and equip Iraqi forces.

In their four months together, Col. Payne and Col. Saad became close. Col. Payne teased him about a poster on his office wall of *two* fluffy white kittens, nuzzling next to a dozen roses. "What in the world is the deal with the cat and the flowers?" Col. Payne asked.

"It reminds me of softness and women," Col. Saad replied. He often referred to Col. Payne as "my brother."

Col. Saad confided his womes ahout his country and his army to Col. Payne. His unit was constantly short of supplies. His soldiers often didn't have enough fuel for their armored vehicles and generators. They also lacked AA batteries to run the night-vision goggles the Americans had given them. He blamed corruption in the Iraqi system for supply shortages. "If you don't have the basics to survive, you cannot be great. You cannot win," he said one evening. Col. Payne threw his arm around the Iraqi colonel's shoulder. "No, but you can survive," he said.

The U.S. says it is helping the Iraqis fix problems that have led to shortages of equipment. The Iraqi government recently replaced the contractor responsible for serving troops spoiled food. Supplying the army is the responsihility of the Iraqi government and "there have heen a few cases of poor performance" among Iraqi contractors, says Lt. Col. Michael Negard, a senior spokesman in Iraq. "While the problems aren't huge, the issue's certainly of the highest priority," he says.

Col. Saad has also grown frustrated with the Americans on the other side of Camp Taji. Last month, Col. Pasquarette asked the Iraqis to provide a couple of dozen soldiers to man some checkpoints with U.S. soldiers. The U.S. soldiers showed up at the checkpoints for about a week. Then, without warning, they left the Iraqis to run them on their own, Col. Saad says. The Iraqis, who questioned the value of the checkpoints in the first place, were angry they had suddenly been abandoned.

"Why did they leave? Aren't they supposed to he helping us?" Col. Saad asked Col. Payne.

"I don't know what the hell they are doing," Col. Payne replied.

Col. Pasquarette says the Iraqis should have been informed that the U.S. soldiers were pulling out of those checkpoints.

In late May, Col. Payne began to push the Iraqi soldiers to get out on the offensive. "I am sick of sitting around and waiting to get attacked," Col. Payne told Col. Saad. He asked Col. Saad to cut loose 10 or 15 soldiers that he could pair up with three or four U.S. soldiers to venture out at night in search of the enemy. Col. Saad agreed.

On May 19, soldiers from Col. Payne's and Col. Saad's units set out on their second night patrol. After they stopped a car that was out in violation of curfew, the enemy opened fire on them from a surrounding palm grove. The soldiers fired back, killing three insurgents and dispersing the rest. When the shooting ended, a man stumbled out of a small shack deep in the palm grove. His hands were tied and a blindfold hung around his neck. "Come mister, I am problem," he sobbed in broken English.

The man said he worked as a legal adviser for Iraq's Ministry of Defense and had been kidnapped by men who told him they would slaughter him "like a sheep." The kidnappers were setting up a camera to film his execution, he said, when they heard the soldiers and left him. "God sent you to save me," the man said, as tears streamed down his face.

Col. Payne was elated. "The Iraqi army saved a life. It also demonstrated that it will go into the field to find and destroy the enemy," he said.

His victory, however, quickly gave way to crushing defeat. The next day, he was summoned to meet with his immediate supervisor. Col. Payne was relieved of his command and told to move to a headquarters position in Baghdad.

He says he was told that he removed because he was "ineffective" and "lacked the skills necessary to lead [his] team in this challenging environment." An Army spokesman in Baghdad said Col. Payne wasn't relieved for any single incident. He declined to comment further.

A few days before Col. Payne was fired, Col. Pasquarette said in an interview that he thought Col. Payne and his men had grown too close to the Iraqis they were advising and his decisions were too often guided by emotion. "From my perspective, the move was warranted," Col. Pasquarette wrote in an email after Col. Payne was dismissed.

The morning after he was fired, Col. Payne spent the day saying goodbye to Col. Saad and the U.S. soldiers on his team. That evening, he boarded a helicopter for Camp Victory, a massive U.S. base on the outskirts of Baghdad.

"I'm now here in Victory -- an alien environment to me and one I never wanted to be a part of," he wrote in an email. He was able to hold his emotions in check until his helicopter lifted off from Camp Taji. Then, he says, he began to sob. "I simply cannot tell you how much I will miss my team."

~~FOUO~~

June 26, 2006

TO *Gen* Pete Pace

CC: Fran Harvey
GEN Pete Schoomaker
David Chu

FROM: Donald Rumsfeld DR

SUBJECT Issues Raised by Eliot Cohen

Attached is Eliot Cohen's response to the memo I sent him concerning the Army officer divorce rates. He raises a series of issues he is concerned about.

Please address each of these, and come back to me with a coordinated answer from Fran Harvey, David Chu, and Pete Schoomaker.

Thanks so much.

Attach. 6/19/06 SD memo to Cohen, SF061906-21; 6/23/06 Cohen response w/Greg Jaffe articles: "Life-Saving Iraqi Night Mission Encourages *Fledgling* Military" and "A Camp Divided."

DHR.dh
SF062306-18

Please Respond By 08/03/06

~~FOUO~~

OSD 09907-06
7/10/2006 10:04:16 AM

11-L-0559/OSD/58002

SECRETARY OF THE ARMY
WASHINGTON

31-08-2006 A09:33

INFO MEMO

FOR: SECRETARY OF DEFENSE

FROM: Francis J. Harvey, Secretary of the Army

SUBJECT Issues Raised by Dr. Eliot Cohen

- This responds to Secretary of Defense's Snowflake dated June **26,2006,** subject as above (Tab A).

- Dr. Cohen is correct – the Army is under stress, not only from GWOT, but also from the ongoing transformation of the Army.

- However, the wheels are not coming off and we are not careening out of control. The Army has and is actively addressing the issues Dr. Cohen has raised as well as other related issues. I believe that we can successfully meet the challenges associated with these issues.

- Attached at Tab B is an information paper that addresses the issues raised by Dr. Cohen. Highlights of the attached paper include:

  - o Changing Standards:

    - The Army is in compliance with DoD recruiting quality guideline; this year, to date, the Army has enlisted under the **4%** Category IV guideline cap and will remain under 4% through the end of the fiscal year. In the 1990's and early **2000's** the number of Category IV recruits had been considerably less than 4% because of market conditions.

    - The percentage of personnel granted a moral waiver in the Active Component of the Army has fluctuated between **6%** and 9% for the last five years with FY05 at 9%. Moral waivers for Active Soldiers through July **2006** are at the same level as FY05 (9% or **5.6K** out of **62.4K);** however, the great majority **(87%** or 4.9K of the **5.6K)** are waivers for misdemeanors.

    - So far in **FY06,** the Regular Army has enlisted 399 Soldiers over **35** years of age or less than .06% of the year to date recruits **(67.1K).**

  - o Declination of Command

    - The Army places outstanding, motivated, highly experienced officers into command, and we have not seen any decrease in the quality of leadership as a result of either increases or decreases in the declination rate. Declination rates for Battalion and Brigade command selectees gradually increased from 4% (**28** officers) in FY03 to

OSD 09907-06

11-L-0559/OSD/58003

8/31/2006 1:04:27 PM

7% (50 officers) in FY04 to 10% (60 officers) in FY05. FY06 is showing a downward trend with 7% (42 officers) declining command to date.

- o Stop Loss:
  - From all indications the Stop Loss policy is not the reason for the high retention rates. The Active Component has achieved or exceeded the retention mission since FY98 and Stop Loss has only been in effect since 2002.
- o Drug/Alcohol Abuse Rates:
  - Drug positive rates show a slight decrease from FY03 (1.93%) to FY06 (1.68%) with a slight increase in alcohol abuse as reflected in the increase in number of Soldiers enrolled in outpatient rehabilitation from FY03 (6176) to FY05 (6463).
- o Captain Attrition and Major Shortage:
  - The Army is currently addressing the Major officer shortage problem by promoting both at a higher and faster rate without sacrificing quality, as well as offering a graduate education to pre-commissioning seniors in return for an extension of the Active Duty Service Obligation.
  - In N06, the attrition rate for company grade officers is projected to be at 8% which is less than the 7 year average of 8.4%.

- I had previously scheduled a meeting with Dr. Cohen to discuss the issues that he has raised. However, he had to cancel, so we are currently trying to reschedule. In the meantime, I will forward to him the attached information paper.

COORDINATION: Tab C

Attachments:
As stated

Copy Furnished
Under Secretary of Defense (Personnel and Readiness)
Chairman of the Joint Chiefs of Staff
Chief of Staff, Army

Prepared **By:** Lieutenant Colonel Doug Flohr, (b)(6)

11-L-0559/OSD/58004

Tab A

~~FOUO~~

June 26,2006

TO: Fran Harvey

CC: David Chu
Gen Pete Pace
GEN Pete Schoomaker

FROM Donald Rumsfeld D.R.

SUBJECT: Issues Raised by Eliot Cohen

Attached is Eliot Cohen's response to the memo I sent him concerning the Army officer divorce rates. He raises a series of issues he is concerned about.

Please address each of these, and come back to me with a coordinated answer from Fran Harvey, David Chu, and Pete Schoomaker.

Thanks so much.

Attach. 6/19/06 SD memo to Cohen, SF061906-21; 6/23/06 Cohen response w/Greg Jaffe articles: "Life-Saving Iraqi Night Mission Encourages Fledgling Military" and "A Camp Divided."

DHR.dh
SF062306-18

Please Respond By 08/03/06

~~FOUO~~

11-L-0559/OSD/58006

~~FOUO~~

ATTACHMENT
13 pages

June 19,2006

TO: Dr. Eliot Cohen

CC: Gen Pete Pace
Fran Harvey

FROM Donald Rumsfeld DR.

SUBJECT Army Divorce Rates

I have asked the Secretary of the Army to get in touch with you about divorce rates. I think the data you were looking at may be old. There was a peak of officer divorce rates in FY '04, but it dropped down in FY '05. We don't have the data for FY '06 yet. It looks to me as though Army officer divorce rates were actually lower in '05 than they were in '03 or '04.

It looks as though there has been an increase in enlisted Army divorce rates for women, but not for men. As for the Army officer divorce rates, the male and female both rose in '04, but both were down in '05.

In any event, I would like you to talk to Fran Harvey, so that whatever data you use is accurate and up-to-date.

Thanks.

Attach Army divorce rate charts

DHR.ss
SF061906-21

6/23

Sir,

Dr Cohen drafted a note to you in response to this note. The Wall Street Journal articles he references in his response are also attached.

V/R,

COL Grimsley

~~FOUO~~

6/23

23 June 2006

Dear Secretary Rumsfeld

Thanks for the note about divorce rates in the Army officer corps. You're right: I must have been looking at the 2004 rates, and I am glad that the numbers went down sharply in 2005. My apologies. I hope that that remains true when the numbers for 2006 are available: I know that the Army has made a big push in this area but I also suspect that there are limits to what extensive counseling can do. Common sense tells me that periodic one year separations, particularly when one spouse is in a combat zone, just cannot be good for marriages.

Let me pursue this matter a bit further, though, just to make myself clear, and perhaps to raise issues you may wish to explore further. My view is that the Army is under a lot of stress, and is fraying – not that it is in a 1971-type situation of semi-collapse, but that the strain is there, and is cumulative. Divorce rates are only one indicator. Here are some others:

-- changing standards for enlistment (including increasing acceptance, even by small margins, of lower intelligence standards, higher ages, and more records of petty crime or misdemeanor);

-- I have been told that there is a higher rate of officers turning down battalion or brigade command; I have not been able to find the statistics on that point, however;

-- the continued use of stop loss about which I have heard many complaints. In particular, many officers and NCO's have assured me that a lot of the high re-enlistment rate reflects a calculation that one will have another tour in Iraq or Afghanistan regardless, because of stop-loss, and that therefore one should take the bonus that goes along with re-enlistment. I would recommend a study of "stop loss-induced re-enlistment," if that has not already been done.

-- increases in drug or alcohol abuse rates, as well as PTSD in various forms (again, I haven't seen the latest statistics, but there is a powerful recent Journal of the American Medical Association article, using 2004 data).

-- I do not know the figures on senior captains trying to get out; worth looking at, as is the promotion rate to major, which is at 98% instead of a more normal 80% or less.

Beyond this, I freely confess that much of what I think is driven by a pretty extensive network of former students and friends at the company- and field-grade levels, and what they report back. Uniformly they describe a force under considerable stress. Two days ago, one infantry major who will be sticking it out for the long haul said to me, "a few more years of this and we'll he in really serious trouble," or as a lieutenant colonel said, "the wheels aren't coming off yet, but eventually, if this keeps up, they will." This is one of those cases, it seems to me, where the full picture does not show up in the statistics. I

1

think there is also the problem of clutching on to the pieces of good news while not taking in the full picture, which is more troubling.

I don't have solutions: I would have liked a larger force a few years ago, but it seems to me its too late to hope for a large pool of high quality recruits, and its more important to keep quality high than to go for numbers. But I do think its important to be candid with ourselves about the strain our soldiers are experiencing.

Finally, on a not-entirely related point, I am very concerned by the perceptions of military advisory service in Iraq by field grade officers that I know. They do not believe that the system will reward *them* for this important and dangerous duty, they believe that they are under-resourced and manned (ten per battalion just is not enough, they tell me), and that although there are good and able officers and NCO's in this mission, too many are recalled reservists and the second string. Greg Jaffe's reporting in the Wall Street Journal was, I believe, entirely sound on this point; by coincidence, I know some of the officers in the unit he described.

I do hope that this is helpful to you.

Eliot Cohen

11-L-0559/OSD/58009

Life-Saving Iraqi Night Mission Encourages Fledgling Military

By GREG JAFFE
June 17, 2006

CAMP TAJI, Iraq -- In late May, Lt. Col. Charles Payne, who served as a U.S. adviser to the Iraqi Army here, began pushing the Iraqis to take a more aggressive approach to hunting down insurgents. It didn't take long before the new strategy produced harrowing results.

Col. Payne laid out his new plan for his Iraqi counterpart, Col. Saad, one evening in late May. (The Iraqi colonel, whose family has been threatened by insurgents, asked that his full name not be used.) It was just after 11 p.m., and the generator providing electricity to Col. Saad's small office had been broken for hours, so Col. Saad was working by the light of a flashlight and a half dozen glow sticks that he got from Col. Payne. A large plate of rice and charred goat sat half-eaten on Col. Saad's desk. The smells of cigarette smoke, goat and sweat hung in the air.

Col. Payne told Col. Saad that the U.S. forces were too hunkered down on the U.S. side of Camp Taji to have a sense for what was happening in big swaths around Camp Taji. "They are just totally removed from the battlefield," he said.

SEE A PHOTO SLIDESHOW ▶

Greg Jaffe

Col. Payne and Col. Saad's troops met at Camp Taji before their crucial mission.

To throw the enemy off balance, Iraqi troops needed to get out into the countryside where the enemy was active, Col. Payne said. He suggested a series of night patrols involving a dozen Iraqi soldiers and three or four U.S. advisers. The first patrol took place May 16. For eight stultifying hours the Iraqis and the Americans slogged through dense palm groves, swatted away at ravenous mosquitoes and hiked across muddy fields. They found nothing.

Three days later, Col. Saad chose a mostly unpopulated area a few miles northwest of Camp Taji for the second night mission. The Iraqis had received a vague tip that insurgents had set up a small roadside-bomb-making cell in the region. At about 6:45 p.m., 10 Iraqi and three U.S. soldiers from Col. Payne's advisory team left Camp Taji.

A few hours into the foot patrol, soldiers from the team say they noticed a white Daewoo sedan turn down a dirt road into a dense palm grove. The car, which was out in violation of the province's 9 p.m. curfew, rolled to a stop by a small shack. The Iraqi and American soldiers decided to search it and detain the driver and sole passenger for questioning.

Master Sgt. John McFarlane and three Iraqi soldiers handcuffed the men from the car and started to question them. Staff Sgt. Howard "Skippy" Hughes, who was standing about 15 yards away, flipped down his night-vision goggles and began scanning the palm grove for the enemy. He says he thought he saw something that looked like a man squatting. Slowly and cautiously, he recalls walking toward the mysterious shape. As he drew closer, the squatting man rose up. Sgt. Hughes says he heard him chamber a round in his rifle.

"Hit the deck!" he screamed.

Milliseconds later, the enemy unleashed a torrent of rifle and machinegun fire. One of the Iraqi soldiers was hit in his upper thigh and was bleeding badly. Cpl. Tyler Christensen, a medic on Col. Payne's advisory team, rushed over to tie a tourniquet around his leg. Soon he was drenched in the Iraqi's blood

The other Iraqi and *American* soldiers say they emptied their weapons into the palm grove, killing three men and driving off the rest. The firefight, which lasted about two minutes, was so intense, Sgt. McFarlane says, that when he closed his eyes shortly after the fight he could still see the red streaks of tracer fire coming at him.

When the battle was done, the Americans and the Iraqi soldiers jumped into their vehicles to head back to base with the two men from the car. As they were pulling away, the terrifying night took a bizarre turn.

A man stumbled from the palm grove. His hands were tied behind his back and a blindfold hung loosely around his neck.

"Mister. Mister. Come mister. I am problem," he sobbed in broken English.

Fearing another ambush, the American and Iraqi soldiers approached cautiously. When they realized he wasn't a threat, they freed his hands and took him back to Camp Taji. It was 2 a.m. when they arrived at the base.

The kidnap victim, a 50-year-old employee of the Iraqi Ministry of Defense, told an interrogator back at Camp Taji that had been sitting at a tea stand a half mile from the base when four men carrying rifles pushed him into the back of their car and drove him to the small shack in the palm grove. They then beat him with a metal cable, he says.

"We have been watching you and know where you work," the man says his kidnappers screamed.

The kidnappers had just begun to set up a video camera to film his execution when they heard the Iraqi and *American* patrol questioning the two men in the white Daewoo sedan just outside the shack. They grabbed their guns and headed into the palm grove. A few seconds later, the kidnap victim says he heard a sustained volley of gunfire.

11-L-0559/OSD/58011

When the shooting stopped, he realized he was alone and began to search for help. He scratched his face against a wall until his blindfold slipped down low enough for him to see and then walked out in the palm grove.

After his interview with the interrogator, the kidnapping victim met with Col. Payne, Col. Saad and the other Iraqi and American soldiers who had saved his Life. He lifted up his sweat-stained shirt and showed them the welts and bruises covering his back.

"God sent you to save me," he said as tears streamed down his face.

Col. Payne and Col. Saad finally fell off to sleep around 5:30 a.m. When they woke up they immediately met to start planning the next three night missions. Both men were still giddy. "Every time I think about what happened last night I get a lump in my throat," Col. Payne said.

The American colonel asked Col. Saad what he wanted to name the next night mission. "Operation Candy Rahhit," Col. Saad suggested. A few weeks earlier Col. Payne had given Col. Saad a chocolate Easter rabbit mailed to him in a care package from home.

"Operation Candy Rabbit it is," Col. Payne replied.

Write to Greg Jaffe at greg.jaffe@wsj.com

11-L-0559/OSD/58012

Wall Street Journal
June 17,2006
Pg. 1

A Camp Divided

As U.S. tries to give Iraqi troops more responsibility, clash of two American colonels shows tough road ahead

By Greg Jaffe

Camp Taji, Iraq--This sprawling military base is divided down the middle by massive concrete barriers, a snaking fence and rifle-toting guards. On one side, about 10,000 U.S. Army soldiers live in air-conditioned trailers. There's a movie theater, a swimming pool, a Taco Bell, and a post exchange the size of a Wal-Mart, stocked with everything from deodorant to DVD players.

On the other side are a similar number of Iraqi soldiers whose success will determine when U.S. troops can go home. The Iraqi troops live in fetid barracks built by the British in the 1920s, ration the fuel they use to run their lights and sometimes eat spoiled food that makes them sick.

The only soldiers who pass regularly between the two worlds are about 130 U.S. Army advisers, who live, train and work with the Iraqis.

For many of these advisers, the past six months have been a disorienting experience, putting them at odds with their fellow U.S. soldiers and eroding their confidence in the U.S. government's ability to build an Iraqi force that can stabilize this increasingly violent country.

Army commanders back in the U.S. "told us this was going to be the most thankless and frustrating job we have ever held, and boy, were they right," says Lt. Col. Charles Payne, who until last month oversaw about 50 Army advisers.

He and fellow advisers say U.S. troops on the American side of the base saddle Iraqis with the least-desirable missions and often fail to provide them with the basics they need to protect themselves against insurgent attacks. "They treat the Iraqis with utter scorn and contempt," Col. Payne says. "The Iraqis may not be sophisticated, but they aren't stupid. They see it."

Col. James Pasquarette, who commands most of the soldiers on the U.S. side of Camp Taji, calls those claims "totally ridiculous." He says he's proud of what the Iraqi units have achieved in the region and has made supporting them his top priority, after ensuring his own troops have the protection they need. But he worries that if the Iraqis are given too much latitude to execute challenging missions too quickly, they will alienate Iraqi civilians with heavy-handed tactics.

He says Col. Payne and his fellow advisers have "gone native."

Though the divide here at Camp Taji is extreme, it reflects a growing friction throughout this war-torn country. No one on either side of the divide expects the Iraqi troops to be trained, equipped or housed to U.S. standards. But if U.S. troops are going to go home, U.S. commanders must allow Iraqis to take a far greater role in planning operations and taking the fight to the enemy, senior military officers say.

11-L-0559/OSD/58013

Right now, Iraqi commanders and some of their U.S. advisers say that isn't happening enough. Part of the reason, U.S. officials say, is that widespread Iraqi corruption has made it hard for the fledgling Iraqi government to supply their troops with basics like good food, batteries and fuel. But Iraqi soldiers and their U.S. advisers say the problem extends beyond basic supply issues. They complain that U.S. troops, bunkered down on large, fortified bases, treat Iraqi forces more like a problem than a partner. U.S. forces "don't talk to us," says Col. Saad, a senior Iraqi commander on Camp Taji. The Iraqi colonel, whose family has been threatened by insurgents, asked that his full name not be used.

U.S. commanders counter that there are huge risks to giving the Iraqi army too big a role right now. They worry some Iraqis will leak word of impending operations to the enemy or use military force to settle sectarian scores. Many U.S. commanders say Iraqi forces aren't as disciplined as U.S. troops and are too prone to abuse civilians and detainees.

The debate raises difficult questions for U.S. commanders, as they plot the way forward in Iraq: Should Iraqi units be held to the same standards as U.S. units? What happens when the Iraqis' solution is at odds with the American commander's strategy?

Earlier this spring, the tension between the two sides at Camp Taji reached the breaking point when the Iraqi army brigade that Col. Payne was advising leveled two dozen roadside kiosks. The Iraqi soldiers said insurgent snipers, who had killed and wounded Iraqi troops, used the kiosks for cover.

Col. Pasquarette thought destroying the kiosks would only enrage locals and drive them to support the insurgents. "This was a great day for the terrorists," he recalls telling Col. Payne on the day that the Iraqi army flattened the fruit and vegetable stands.

Col. Payne says the Iraqi army bulldozed the kiosks -- consisting mostly of palm fronds suspended by bamboo poles -- to protect Iraqi soldiers. "When I first heard what they had done, my initial response was, 'I am all for it,' " Col. Payne says. "This is not a law and order situation. This is a war."

Late last month, Col. Pasquarette asked that Col. Payne be dismissed from his position, just four months after the two men started working together. Col. Payne was then assigned to a desk job in Baghdad.

The unit Col. Payne headed is at the leading edge of a major shift in U.S. strategy. Until last summer, the U.S. military saw its primary mission as fighting insurgents. With pressure mounting to bring the 130,000 U.S. troops in Iraq home, President Bush decided the military's main effort should instead focus on training Iraqis to take its place.

To speed development of Iraqi army forces, about 3,000 U.S. soldiers were placed with Iraqi units throughout the country. The teams live and work with Iraqi soldiers in places such as Camp Taji.

In November 2005, Col. Payne came back from retirement to lead his team. The colonel had served 28 years in the Army, fought in the Grenada invasion and taught history at West Point. He retired in July 2001. A few weeks later, terrorists struck the Pentagon and the World Trade Center. Col. Payne called the Army and volunteered to return "There was a chuckle on the end of the phone," he says. The Army told him he wasn't needed.

Four years later, with the Army stretched thin by the war, the 50-year-old soldier, who was teaching at Virginia Polytechnic Institute, called again. This time, the Army was eager to send him to Iraq. In November, he was told he had 23 days to report to Fort Carson, Colo., and link up with his unit. His wife was "very unhappy," he says. Col. Payne says he was determined to go. "The nation is at war and

11-L-0559/OSD/58014

all real soldiers want to be where the action is."

Col. Pasquarette, a former college basketball player, took command of his 6,000-soldier brigade in June 2005. Before that, the 45-year-old had attended Harvard's Kennedy School of Government, worked for the Joint Chiefs of Staff in the Pentagon and served as an aide-de-camp to a four-star general.

The two men's troops arrived in Iraq in December 2005 and settled on opposite sides of Camp Taji, a sprawling former Iraqi army base, about 20 miles north of Baghdad. Col. Payne's group consisted of 50 U.S. soldiers, assigned to advise the Iraqi military. His team was one of the few at Camp Taji that didn't report to Col. Pasquarette.

The 2,500-soldier Iraqi brigade that Col. Payne was advising had formed 11 months earlier and had been fighting nonstop. The Iraqis had scrounged all of their tanks and armored personnel carriers -- most of which were at least 30 years old -- from a massive junkyard on the Iraqi side of Camp Taji. When something broke, Iraqi soldiers retreated to the scrapyard where they would pillage rusting hulks for spare parts. Of the $260 billion spent on the Iraq war since 2003, about $10 billion has gone to build Iraqi army and police forces.

The U.S. officers bonded quickly with their Iraqi counterparts. In January, Maj. Michael Jason, who leads one of the advisory teams, was on patrol with a 42-year-old Iraqi colonel when a terrified farmer told them he had found bodies in a field. He then led them to the corpses of 11 Iraqi army soldiers who had been headed home on leave. Each had been beaten, blindfolded and shot in the head. Their Iraqi army identification cards had been taken from their wallets and pinned to their shirts by insurgents who regularly target Iraqi forces.

Maj. Jason, a Roman Catholic, and his Iraqi counterpart, Col. Khalid, a Muslim, kneeled next to the bodies and prayed. The U.S. Army asked that Col. Khalid's full name be withheld for his safety. That night, Maj. Jason, a 33-year-old West Point grad, wrote an email home describing his Iraqi colleague's bravery and sacrifice.

"Col. Khalid's children have to move constantly for fear of their lives. When he goes home on leave, he cannot tell anyone for security reasons. He just disappears. He drives 90 mph with a pistol tucked in the small of his back and his ID hidden. I love these guys, no s-t," he wrote. A month later, Col. Khalid's brother, also an army officer, was kidnapped. Insurgents killed him and dumped his body on his parents' doorstep. Col. Khalid couldn't go to the funeral for fear that he would be assassinated. So Maj. Jason and soldiers in the unit mourned with him at Camp Taji.

In March, Col. Khalid left the battalion for a safer assignment, which doesn't require him to leave the base.

As the U.S. advisers *grew* closer to the Iraqis, they also grew more frustrated with U.S. soldiers on the other side of the base.

Shortly after Col. Pasquarette arrived at Camp Taji, he beefed up the number of guards and armored vehicles at the gates separating the U.S. and Iraqi sides of the base. "Securing my [base] is my No. 1 mission. I am risk averse here," he says. The U.S. advisers to the Iraqis thought the additional guards and guns were unnecessary and only served to make U.S. soldiers more suspicious of the Iraqis.

When the advisers asked if they could bring an Iraqi colleague to eat with them on the American side of the base, they say they were shocked at the response. They were told that the presence of an Iraqi officer

11-L-0559/OSD/58015

in the dining hall might upset the U.S. soldiers.

"These kids go outside the gate and deal with a very hostile environment. They need a place where they can relax and let their guard down," says Lt. Col. Kevin Dixon, Col. Pasquarette's deputy commander. He says the policy was driven by the bombing of a dining facility in Mosul in 2004 by an Iraqi who had sneaked in.

The advisers felt differently. "We really believe there is a systemic contempt for Iraqi soldiers," says Master Sgt. John McFarlane, a senior enlisted adviser to the Iraqis at Camp Taji. The policy has since been amended to allow advisers to eat with Iraqi officers on the U.S. side if they file a letter in advance with the base's security office.

One of the Iraqi army's primary jobs in the Taji area is to guard water-purification substations that provide most of Baghdad's drinking water. Last summer, insurgents blew up one of the substations, cutting off water for two weeks. To ensure that didn't happen again, Iraqi army units were dispatched by the U.S. to guard the sites. Iraqi soldiers began to take regular sniper fire there.

In January, the U.S. advisers asked Col. Pasquarette for help installing barriers around one of the substations, to shield the Iraqis from snipers. Col. Pasquarette asked one of his units to help. Weeks passed, but help never came. American engineering units were too busy fortifying the U.S. side of Camp Taji and bases around it, says Maj. Martin Herem, who handled the request.

On Feb. 28, a sniper shot in the back one of the Iraqi soldiers at the water station. The soldier bled to death. Three weeks later, a sniper killed a second Iraqi soldier who was on patrol near the water station. Iraqi troops said that both times snipers used the small fruit and vegetable stands lining a nearby road for cover. The Iraqi army couldn't return fire without killing shopkeepers and customers.

When the Iraqi soldiers ran over to ask people who had been shooting at them, locals said they hadn't seen anything. It's dangerous for locals to be seen helping the U.S. Army or the Iraqi army.

The day after the second killing, Col. Saad, an Iraqi colonel in the unit Col. Payne was advising, ordered his men to tell the shopkeepers to empty the vegetable stands. The Iraqi soldiers then bulldozed the stands. Col. Saad says he destroyed the kiosks to protect his soldiers.

When Col. Pasquarette learned about the incident, he was furious. The Iraqis' actions ran completely counter to his strategy. He had told his soldiers to focus less on killing insurgents and more on reconstruction programs designed to win support of the people.

"When you go lethal or destroy property there may be a short-term gain, but there is a long-term loss," he says. He saw the move as a throwback to the Saddam Hussein era when the army was used to quell unrest and inflict mass punishment.

Because the Iraqi troops operate in his sector, Col. Pasquarette oversees them. He called Col. Payne into his office and demanded that he tell Col. Saad to have his soldiers apologize and pay reparations to the shop owners.

Col. Payne passed along the orders. But Col. Saad says he refused to follow them. "Here in Iraq if someone makes a mistake, you punish them," he says, referring to the shop owners' failure to give Iraqis information about the snipers. "If you give him money, he will repeat the mistake. And he will consider the person who gave him the gift an idiot."

The next day, Col. Pasquarette met with Col. Saad's Iraqi superior and told him about the dispute. The Iraqi general fired Col. Saad. Later that day, three low-ranking Iraqi soldiers, accompanied by about a dozen Americans, passed out the reimbursement forms.

The Iraqi officers in Col. Saad's brigade felt betrayed. On March 21, just before midnight, four senior officers stopped by Col. Payne's office and threatened to resign. "They were furious," says Col. Payne. Two days later, Col. Saad was quietly re-hired.

Col. Payne says he is still angry that neither Col. Pasquarette nor his subordinate commanders talked to Col. Saad to hear his side of the story. "This is a respect issue. These guys don't respect the Iraqis," Col. Payne says.

"Personally I don't think there was anything to discuss," Col. Pasquarette says.

In the days that followed, the relationship between Col. Payne and Col. Pasquarette grew more tense. In mid-March – about the time the Iraqis flattened the vegetable stands -- insurgents attacked an Iraqi army patrol base in Tarmiyah, a city of about 50,000, a short drive from Camp Taji. One Iraqi soldier from Col. Saad's brigade was killed by a rocket-propelled grenade and another was shot in the head by a sniper. The next day, four of Col. Saad's soldiers died when their armored personnel carrier hit a roadside bomb. The blast threw the turret of the vehicle about 30 yards and lopped off the head of one of the Iraqi soldiers inside, U.S. and Iraqi officers say.

Senior Iraqi officials in the Ministry of Defense were convinced Tarmiyah was a hotbed of insurgent activity. Col. Pasquarette says he was told hy his commander in Baghdad to clear the city of insurgents.

Col. Pasquarette and his team spent several days building a plan before he invited Col. Payne, Col. Saad and Col. Saad's commander to the U.S. side to explain it.

The two Iraqi officers were led through a 208-slide Powerpoint briefing, in which all the slides were written in English. The six areas the Iraqi troops were supposed to occupy were named for New England cities, such as Cranston, Bangor and Concord. The Iraqi officers, who spoke only Arabic, were dumbfounded. "I could see from their body language that both of them were not following what was going on," says Maj. Bill Taylor, Col. Payne's deputy.

Once the plan was explained to them through an interpreter, the Iraqis strongly disagreed with it. Col. Pasquarette planned to surround the city with razor wire and set up checkpoints to search all cars moving in and out of the city. U.S. and Iraqi soldiers would then begin regular foot patrols through the city to gain intelligence on insurgents. The centerpiece of the plan was $5 million in reconstruction projects.

Col. Pasquarette argued that the projects would help the U.S. win support of the city's powerful mayor, Sheik Sayid Jassem, who had been detained by U.S. forces in the early days of the occupation for supporting the insurgency. He also thought the projects would turn the people to the side of the new Iraqi government.

The Iraqis favored a harder-nosed approach. They wanted to conduct house-to-house searches and find a way to put pressure on the mayor, who they insisted was still supporting insurgents. They suggested shutting Tarmiyah's business district down for a week. Once the mayor had been cowed with the stick, they favored dangling the $5 million in reconstruction funds.

11-L-0559/OSD/58017

Col. Pasquarette says the Iraqi approach would have alienated the people in Tarmiyah. He rejected it and stuck to his plan. Although the operation hasn't netted any insurgents, he says people are out shopping and businesses that had been closed are bustling as a result of the checkpoints and foot patrols. The U.S. military is bankrolling a pipeline that will bring potable water into the city, building medical clinics and repairing the main road.

Attacks in the city are down substantially *since* March, though they have begun to climb of late, Col. Pasquarette says. Still, he says the operation was a success because residents feel safer. He doubts the city was ever really a major insurgent hotbed. "We were all wrong about Tarmiyah," he says.

Col. Saad and Col. Payne say the insurgents have simply moved outside the city's gates.

Gen. George Casey, the top military officer in Iraq, acknowledges it has often been hard for U.S. commanders to let Iraqis take over the fight. "We are so mission-oriented and so focused, we tend to want to do everything ourselves," he says. "It is a constant baffle .... I would hope that when the Iraqis have ideas we try to help them execute them."

Iraqi troops "have never betrayed their U.S. advisory teams," adds Lt. Gen. Martin Dempsey, who is overseeing the effort to train and equip Iraqi forces.

In their four months together, Col. Payne and Col. Saad became close. Col. Payne teased him about a poster on his office wall of two fluffy white kittens, nuzzling next to a dozen roses. "What in the world is the deal with the cat and the flowers?" Col. Payne asked.

"It reminds me of softness and women," Col. Saad replied. He often referred to Col. Payne as "my brother."

Col. Saad confided his worries about his country and his army to Col. Payne. His unit was constantly short of supplies. His soldiers often didn't have enough fuel for their armored vehicles and generators. They also lacked AA batteries to run the night-vision goggles the Americans had given them. He blamed corruption in the Iraqi system for supply shortages. "If you don't have the basics to survive, you cannot be great. You cannot win," he said one evening. Col. Payne threw his arm around the Iraqi colonel's shoulder. "No, but you can survive," he said,

The U.S. says it is helping the Iraqis fix problems that have led to shortages of equipment. The Iraqi government recently replaced the contractor responsible for serving troops spoiled food. Supplying the army is the responsibility of the Iraqi government and "there have been a few cases of poor performance" among Iraqi contractors, says Lt. Col. Michael Negard, a senior spokesman in Iraq. "While the problems aren't huge, the issue's certainly of the highest priority," he says.

Col. Saad has also grown frustrated with the Americans on the other side of Camp Taji. Last month, Col. Pasquarette asked the Iraqis to provide a couple of dozen soldiers to man some checkpoints with U.S. soldiers. The U.S. soldiers showed up at the checkpoints for about a week. Then, without warning, they left the Iraqis to run them on their own, Col. Saad says. The Iraqis, who questioned the value of the checkpoints in the first place, were angry they had suddenly been abandoned.

"Why did they leave? Aren't they supposed to be helping us?" Col. Saad asked Col. Payne.

"I don't know what the hell they are doing," Col. Payne replied.

11-L-0559/OSD/58018

Col. Pasquarette says the Iraqis should have been informed that the U.S. soldiers were pulling out of those checkpoints.

In late May, Col. Payne began to push the Iraqi soldiers to get out on the offensive. "I am sick of sitting around and waiting to get attacked," Col. Payne told Col. Saad. He asked Col. Saad to cut loose 10 or 15 soldiers that he could pair up with three or four U.S. soldiers to venture out at night in search of the enemy. Col. Saad agreed.

On May 19, soldiers from Col. Payne's and Col. Saad's units set out on their second night patrol. After they stopped a car that was out in violation of curfew, the enemy opened fire on them from a surrounding palm grove. The soldiers fired back, killing three insurgents and dispersing the rest. When the shooting ended, a man stumbled out of a small shack deep in the palm grove. His hands were tied and a blindfold hung around his neck. "Come mister, I am problem," he sobbed in broken English.

The man said he worked as a legal adviser for Iraq's Ministry of Defense and had been kidnapped by men who told him they would slaughter him "like a sheep." The kidnappers were setting up a camera to film his execution, he said, when they heard the soldiers and left him. "God sent you to save me," the man said, as tears streamed down his face.

Col. Payne was elated. "The Iraqi army saved a life. It also demonstrated that it will go into the field to find and destroy the enemy," he said.

His victory, however, quickly gave way to crushing defeat. The next day, he was summoned to meet with his immediate supervisor. Col. Payne was relieved of his command and told to move to a headquarters position in Baghdad.

He says he was told that he removed because he was "ineffective" and "lacked the skills necessary to lead [his] team in this challenging environment." An Army spokesman in Baghdad said Col. Payne wasn't relieved for any single incident. He declined to comment further.

A few days before Col. Payne was fired, Col. Pasquarette said in an interview that he thought Col. Payne and his men had grown too close to the Iraqis they were advising and his decisions were too often guided by emotion. "From my perspective, the move was warranted," Col. Pasquarette wrote in an email after Col. Payne was dismissed.

The morning after he was fired, Col. Payne spent the day saying goodbye to Col. Saad and the U.S. soldiers on his team. That evening, he boarded a helicopter for Camp Victory, a massive U.S. base on the outskirts of Baghdad.

"I'm now here in Victory -- an alien environment to me and one I never wanted to be a part of," he wrote in an email. He was able to hold his emotions in check until his helicopter lifted off from Camp Taji. Then, he says, he began to sob. "I simply cannot tell you how much I will miss my team."

11-L-0559/OSD/58019

Tab B

INFORMATION PAPER

DAPE-MP
23 August 2006

SUBJECT: Response to Issues Raised by Dr. Eliot Cohen

1. Purpose: To provide a response to the concerns raised by Dr. Eliot Cohen in correspondence to Secretary Rumsfeld, enclosure 1. The response is keyed to the paraphrased concerns listed below.

2. Response. While Dr. Cohen understands divorce is one indicator of stress on the Army, he had dated information. He believes there are other concerns that support his belief that the Army is under significant stress. Areas of Concerns:

a. Concern. Changing standards for enlistment and recruit quality.

-- Response. The DOD quality guideline is for less than or equal to 4% of non-prior service enlistments to be Category IVs on the Armed Services Vocational Aptitude Battery. This metric is measured on an annual basis and reported to Congress. Against the Army's FY06 mission of 80,000 (71,000 Non-prior service) mission, the Army could recruit up to 2,840 Soldiers and still be within the DOD guidelines. Through July, the Army has enlisted 2,396 Soldiers who scored as Category IVs. The Army is well within the cap for the annual benchmark of 4% and will remain under 4% through the end of the fiscal year. While it is still too early to fully assess the impact on the quality of the force, the Army has not yet seen any negative indicators, such as training base attrition. In fact, attrition from the training base is significantly lower this year. It should be noted that while these Soldiers scored as Category IVs on their Armed Services Vocational Aptitude Battery, these Soldiers are qualified to serve in the military and their Military Occupational Specialty (MOS). The Army has always had some level of Category IV Soldiers. Through Army training and mentorship, these Soldiers have served honorably and bravely. Additionally, Congress allows up to 20% CAT IVs and the Army regularly accessed >10% CAT IVs in the 1980's (many of which are the Senior NCOs of today).

-- Response. Moral Waivers: From October 2001 through July of this year, the overall percentage of personnel who enlisted with a moral waiver is 6.4% for the Regular Army. This percentage has fluctuated between 5% and 9% during this period. During the waiver review process, waivers are approved or disapproved based on their merits and the whole person concept; no consideration is given to percentages of waivers, caps, or mission accomplishment. Attrition rates for Soldiers who had moral waivers at time of enlistment are roughly the same as Soldiers that attrited without a pre-entry waiver. Moral waivers this fiscal year through July 2006 are currently 9% at 5,678 out of 62,433; however, the great majority (87%, 4,951 out of 5,678) were for misdemeanors. The Army continues to review each applicant on a case-by-case basis.

-- Response. The NDAA 06 increased the enlistment age from 35 to 42 for the Regular Army. Prior to the increase, OUSD-PR granted an exception to DoDI 1304.26 allowing the USAR and ARNG to access up to age 40 (during this period the Regular Army was still accessing at 35). After NDAA 06 was signed, the Regular Army age limit was further raised to 40 to bring it on line with the Reserve Components. The age limit was raised to 42 in June 06 for all three Army components after the medical screening requirements were established and coordinated with MEPCOM. Only those applicants who meet all accession requirements are enlisted. The law authorized the increase to 42 for the Regular Army, while the revised DoDI (mentioned above) authorized the Service Secretary to set the age standard for the Reserve Components. As of 10 August we have only enlisted 399 Soldiers out of the 67,101K assessed (.06%) in the Regular Army. This is a small but fit and qualified group of Americans who wish to serve their country.

b. Concern. Declination of Command.

-- Response. The Army places outstanding, motivated, highly experienced officers into command, and we have not seen any decrease in the quality of leadership as a result of either increases or decreases in the declination rate. Declination rates for Battalion and Brigade command selectees gradually increased from 4% (28 officers) in FY03 to 7% (50 officers) in FY04 to 10% (60 officers) in FY05. FY06 is showing a downward trend with 7% (42 officers) declining command to date.

c. Concern. Stop Loss Induced Reenlistments

-- Response. From all indications, the Stop Loss policy is NOT the reason for the high retention rates.

... The Active Component has achieved and exceeded the Retention Mission since FY98. On the other hand, some version of Stop Loss has only been in effect since 2002.

... As of the end of June 2006, the total number of Soldiers affected by Stop Loss for all components is 10,154 (Active Component 6,130, Army National Guard 2,160, and U.S. Army Reserves 1,864).

... While Soldiers undoubtedly weigh Stop Loss against the benefits of reenlisting, it is important to note that although a Soldier can reenlist for two years, in order to qualify for a bonus, the reenlistment must be for a minimum of three years. Once a Soldier becomes aware of this distinction, it is less likely that that they would reenlist solely to take financial advantage of a Stop Loss situation.

... Each month Soldiers who are in the Army past their scheduled separation date by virtue of their deployment status and Stop Loss do reenlist. While these numbers are not large (average about 150 per month), they illustrate that some Soldiers do change their minds, either for the reasons stated by Dr. Cohen, or as we often hear, they are motivated by the camaraderie and sense of purpose often found in a deployed situation – unit cohesion and a sense of purpose and mission.

d. Concern. Increase in Drug/Alcohol Abuse Rates, as well as Post Traumatic Stress Disorder.

-- Response. Drug/Alcohol Abuse. Drug positive rates show overall slight decrease in the period FY03 (1.93%) to FY06 (1.68%). Commanders have continued to emphasize drug testing through all phases of deployment. Testing of deployed troops has been conducted since FY04, with drug positive rates less than .70%. The Army has experienced a very slight increase in alcohol offenses as reflected in the number of Soldiers enrolled in outpatient rehabilitation for FY03 - FY05, increasing from 6,176 to 6,463. During FY03 - FY05 there was also an increase in Soldiers referred to mandatory substance abuse education from 5,405 to 6,445. Drug abuse in the Army remains at a very low level--far below that of comparable civilian counterparts. Alcohol is a larger problem, as shown by the slight increases in offenses and in resultant education and treatment.

-- Response. Post Traumatic Stress Disorder (PTSD). PTSD is one of many deployment-related effects of war. Many people in the general population are diagnosed with PTSD and lead full, productive lives - including military careers - with appropriate treatment that leads to resolution. While symptoms of PTSD are common after combat, the disorder is estimated to affect **10-15%** of Soldiers returning from combat duty in Iraq. This condition is treatable and we expect most Soldiers to fully recover. The Army has numerous programs in place designed to address PTSD and other behavioral health issues such as pre- and post-deployment briefings for Soldiers and families as part of Deployment Cycle Support; Combat Stress Control Teams in theater; pre- and post-deployment health assessments with healthcare professionals (PDHA); 24/7 availability of Military One Source; and the recently initiated Post-deployment Health Re-Assessment (PDHRA) for all Soldiers at 90 -180 days post-deployment. The PDHRA is a global health reassessment with focus on behavioral health.

e. Concern. Shortage of Majors, Major Promotion Rates and Captain Attrition:

-- Response. The shortage of Army majors is a result of two factors. (1) under accession of officers in the 1991-95 timeframe, a decision made during the drawdown in the 1990's as an effort to make Congressionally mandated end strength, (2) recent growth in authorizations as a result of growing the operational Army. Since 2001, the Army has increased 8,000 officer authorizations (88% of this growth is in majors and senior captains).

-- Response. The higher promotion rates to major are not a result of higher company grade losses. The annual historical company grade loss rate average is 8.6%. In FY05, company grade officers departed after their initial commitment at roughly the historical average. In FY06, we are projecting an 8.0% loss rate. These rates are lower than pre 9/11 loss rates (FY99 = 10.5%; FY00 = 9.9%; FY01 = 9.1%).

-- Response. Because it takes 10 years to grow and develop a major, the Army is taking the following actions to fill the new authorizations:

... Promote at higher rates: The Army is currently promoting officers to major above the Defense Officer Personnel Management Act goal of 80%. The FY06 Major's Board selected 98% of the considered population. While this is higher, boards are instructed to select officers that are both fully and best qualified for promotion to major. The Army is not dropping standards.

... Promote officers to major faster: the Army recently adjusted the pin-on to major from 11 years to 10 years. This aligns us with the other services pin-on points and provides us with an additional professional development year to get officers joint qualified as a major.

... Improve officer retention through incentives. (1) a guaranteed Graduate School Opportunity for pre-commissioned officers in the sixth to eighth year of service in exchange for additional Active Duty Service Obligation (ADSO);. (2) pre-commissioning incentives such as the Branch and Posting in exchange for additional ADSO.

f. Concern. Composition of Transition and Training (TT) Teams and Promotion Opportunities.

-- Response. Army leadership fully understands that a key to achieving United States policy goals in Iraq is the establishment of enduring security for both the people of Iraq and the new government. The composition and manning of the TT teams was approved by the Combatant Command as sufficient to accomplish the mission stated above. After one year of executing the Iraqi TT training mission, the Army decided to implement a more selective process of team member selection. As of 1 August 2006, the majority of the Soldiers serving on Iraqi TT teams are AC Soldiers and are selected by Army Human Resources Command based on experience, specialty and grade. At the same time we will continue to use USAR and NGB Soldiers because this will decrease the demand on AC Soldiers and allows more time between deployments. The Army continually reviews the process to ensure maximum benefit is obtained through this process. Additionally, there are units deployed that are not in traditional missions and serving in roles that they would not normally perform to include TT teams. As with the TT teams many deployed Soldiers are taking on new and evolving duties. Centralized promotion and professional development vehicles are provided information that assures the duties and responsibilities exercised by Soldiers assigned to the TT teams are fully considered in the selection proceedings. Promotions boards are instructed that no other duty demands more of our Soldiers than deployment to a combat zone.

g. Concern. Relationship Between Stress and Divorce.

-- Response. It is reasonable to assume that the stress of frequent deployments and the dangers affiliated with war do, in fact, contribute to marital discord and divorce. However, it is not reasonable to contend that stress is the primary reason for increases in divorces or for that matter that stress has a direct causal relationship to divorce. In fact, a decision to end a marriage is generally multi-dimensional and one that is very individualized. For example, deployment separations often provide an opportunity for both husband and wife to evaluate their relationship; and many times the decision to end a marriage is based on lack of commitment to the relationship. So the decision to divorce may be based on what is best for those involved as opposed to a breakdown in psychological functioning. Although the U.S. is still actively involved in the War in Iraq, with a large number of Army Soldiers deployed in theater, the FY05 rate of divorce for Officers is basically the same as it was in FY02, and the rate of divorce for Enlisted personnel is only slightly higher than FY02. Thus, it is difficult to imply that stress related to frequent deployments and pressures related to the U.S.'s involvement in the Iraqi War has resulted in more termination of marriages. In fact, unlike the U.S. population, approximately 97% of Army Soldiers were managing to keep their marriages intact despite the extra pressures and stress of war.

DAPE-MP
SUBJECT: Response to Issues Raised by Dr. Eliot Cohen

3. In summary, all three components are doing extensive surveys and sensing sessions with our commanders and Soldiers, are monitoring a wide range of statistics and indicators, and are proactively modifying/initiating programs where issues arise.

COL Head/DAPE-MPE (b)(6)

Approved by: SEAN J. BYRNE
Major General, GS
Director of Military
Personnel Management

11-L-0559/OSD/58026

Tab C

COORDINATION PAGE

SUBJECT: SECDEF Snowflake: **Issues** Raised by Eliot Cohen [SF062306-18]

Agency	Name	Date
CJCS	GEN Pete Pace	**14** Aug 06
USD (P&R)	David Chu	28 Aug 06
CSA	GEN Pete Schoomaker	10 **Aug** 06

SECRETARY OF THE ARMY
WASHINGTON

INFO MEMO

FOR: SECRETARY OF DEFENSE

FROM: Francis J. Harvey, Secretary of the Army

SUBJECT: Issues Raised by Eliot Cohen

- This responds to the Secretary of Defense's Snowflake dated June 26,2006, subject as above (Tab A).
- I have scheduled a lunch with Dr. Cohen for August 10,2006, to discuss the issues identified in his letter to you. Major General Sean Byrne, Director, Military Personnel Management, Army G-1, and Lieutenant General Kevin Kiley, The Surgeon General, will join us for the luncheon and discussion of these topics.
- I will provide you an update on any issues that warrant your attention following the meeting.

COORDINATION: NONE

Attachments:
As stated

Prepared by: Lieutenant Colonel Douglas L. Flohr, (b)(6)

OSD 09907-06
11-L-0559/OSD/58029
7/10/2006 10:05:50 AM

~~FOUO~~

June 26, 2006

TO: Gen Pete Pace

C C Fran Harvey
GEN Pete Schoomaker
David Chu

FROM: Donald Rumsfeld DR

SUBJECT: Issues Raised by Eliot Cohen

Attached is Eliot Cohen's response to the memo I sent him concerning the Army officer divorce rates. He raises a series of issues he is concerned about.

Please address each of these, and come back to me with a coordinated answer from Fran Harvey, David Chu, and Pete Schoomaker.

Thanks so much.

Attach. 6/19/06 SD memo to Cohen, SF061906-21; 6/23/06 Cohen response w/Greg Jaffe articles; "Life-Saving Iraqi Night Mission Encourages Fledgling Military" and "A Camp Divided."

DHR.dh
SF062306-18

Please Respond By 08/03/06

~~FOUO~~

FOUO

ATTACHMENT
13 pages

June 19,2006

TO: Dr. Eliot Cohen

CC: Gen Pete Pace
Fran Harvey

FROM: Donald Rumsfeld DR.

SUBJECT: Army Divorce Rates

I have asked the Secretary of the Army to get in touch with you about divorce rates. I think the data you were looking at may be old. There was a peak of officer divorce rates in FY '04, but it dropped down in FY '05. We don't have the data for FY '06 yet. It looks to me as though Army officer divorce rates were actually lower in '05 than they were in '03 or '04.

It looks as though there has been an increase in enlisted Army divorce rates for women, but not for men. As for the Army officer divorce rates, the male and female both rose in '04, but both were down in '05.

In any event, I would like you to talk to Fran Harvey, so that whatever data you use is accurate and up-to-date.

Thanks.

Attach Army divorce rate charts

DHR.ss
SP061906-21

Sir, 6/23

Dr Cohen drafted a note to you in response to this note. The Wall Street Journal articles he references in his response are also attached.

V/r,
COL Grimsley

FOUO

DHW 6/23

23 June 2006

Dear Secretary Rumsfeld:

Thanks for the note about divorce rates in the Army officer corps. You're right: I must have been looking at the 2004 rates, and I am glad that the numbers went down sharply in 2005. My apologies. I hope that that remains true when the numbers for 2006 are available: I know that the Army has made a big push in this area but I also suspect that there are limits to what extensive counseling can do. Common sense tells me that periodic one year separations, particularly when one spouse is in a combat zone, just cannot be good for marriages.

Let me pursue this matter a bit further, though, just to make myself clear, and perhaps to raise issues you may wish to explore further. My view is that the Army is under a lot of stress, and is fraying – not that it is in a 1971-type situation of semi-collapse, but that the strain is there, and is cumulative. Divorce rates are only one indicator. Here are some others:

-- changing standards for enlistment (including increasing acceptance, even by small margins, of lower intelligence standards, higher ages, and more records of petty crime or misdemeanor);

-- I have been told that there is a higher rate of officers turning down battalion or brigade command; I have not been able to find the statistics on that point, however;

-- the continued use of stop loss about which I have heard many complaints. In particular, many officers and NCO's have assured me that a lot of the high reenlistment rate reflects a calculation that one will have another tour in Iraq or Afghanistan regardless, because of stop-loss, and that therefore one should take the bonus that goes along with re-enlistment. I would recommend a study of "stop loss-induced re-enlistment," if that has not already been done.

-- increases in drug or alcohol abuse rates, as well as PTSD in various forms (again, I haven't seen the latest statistics, but there is a powerful recent Journal of the American Medical Association article, using 2004 data).

-- I do not know the figures on senior captains trying to get out; worth looking at, as is the promotion rate to major, which is at 98% instead of a more normal 80% or less.

Beyond this, I freely confess that much of what I think is driven by a pretty extensive network of former students and friends at the company- and field-grade levels, and what they report back. Uniformly they describe a force under considerable stress. Two days ago, one infantry major who will be sticking it out for the long haul said to me, "a few more years of this and we'll be in really serious trouble," or as a lieutenant colonel said, "the wheels aren't coming off yet, but eventually, if this keeps up, they will." This is one of those cases, it seems to me, where the full picture does not show up in the statistics. I

1

think there is also the problem of clutching on to the pieces of good news while not taking in the full picture, which is more troubling.

I don't have solutions: I would have liked a larger force a few years ago, but it seems to me its too late to hope for a large pool of high quality recruits, and its more important to keep quality high than to go for numbers. But I do think its important to be candid with ourselves about the strain our soldiers are experiencing.

Finally, on a not-entirely related point, I am very concerned by the perceptions of military advisory service in Iraq by field grade officers that I know. They do not believe that the system will reward them for this important and dangerous duty, they believe that they are under-resourced and manned (ten per battalion just is not enough, they tell me), and that although there are good and able officers and NCO's in this mission, too many are recalled reservists and the second string. Greg Jaffe's reporting in the Wall Street Journal was, I believe, entirely sound on this point; by coincidence, I know some of the officers in the unit he described.

I do hope that this is helpful to you.

Eliot Cohen

11-L-0559/OSD/58033

Life-Saving Iraqi Night Mission Encourages Fledgling Military

By GREG JAFFE
June 17, 2006

CAMP TAJI, Iraq -- In late May, Lt. Col. Charles Payne, who served as a U.S. adviser to the Iraqi Army here, began pushing the Iraqis to take a more aggressive approach to hunting down insurgents. It didn't take long before the new strategy produced harrowing results.

Col. Payne laid out his new plan for his Iraqi counterpart, Col. Saad, one evening in late May. (The Iraqi colonel, whose family has been threatened by insurgents, asked that his full name not be used.) It was just after 11 p.m., and the generator providing electricity to Col. Saad's small office had been broken for hours, so Col. Saad was working by the light of a flashlight and a half dozen glow sticks that he got from Col. Payne. A large plate of rice and charred goat sat half-eaten on Col. Saad's desk. The smells of cigarette smoke, goat and sweat hung in the air.

Col. Payne told Col. Saad that the U.S. forces were too hunkered down on the U.S. side of Camp Taji to have a sense for what was happening in big swaths around Camp Taji. "They are just totally removed from the battlefield," he said.

SEE A PHOTO SLIDESHOW

Greg Jaffe

Col. Payne and Col. Saad's troops met at Camp Taji before their crucial mission.

To throw the enemy off balance, Iraqi troops needed to get out into the countryside where the enemy was active, Col. Payne said. He suggested a series of night patrols involving a dozen Iraqi soldiers and three or four U.S. advisers. The first patrol took place May 16. For eight stultifying hours the Iraqis and the Americans slogged through dense palm groves, swatted away at ravenous mosquitoes and hiked across muddy fields. They found nothing.

Three days later, Col. Saad chose a mostly unpopulated area a few miles northwest of Camp Taji for the second night mission. The Iraqis had received a vague tip that insurgents had set up a small roadside-bomb-making cell in the region. At about 6:45 p.m., 10 Iraqi and three U.S. soldiers from Col. Payne's advisory team left Camp Taji.

A few hours into the foot patrol, soldiers from the team say they noticed a white Daewoo sedan turn down a dirt road into a dense palm grove. The car, which was out in violation of the province's 9 p.m. curfew, rolled to a stop by a small shack. The Iraqi and American soldiers decided to search it and detain the driver and sole passenger for questioning.

Master Sgt. John McFarlane and three Iraqi soldiers handcuffed the men from the car and started to question them. Staff Sgt. Howard "Skippy" Hughes, who was standing about 15 yards away, flipped down his night-vision goggles and began scanning the palm grove for the enemy. He says he thought he saw something that looked like a man squatting. Slowly and cautiously, he recalls walking toward the mysterious shape. As he drew closer, the squatting man rose up. Sgt. Hughes says he heard him chamber a round in his rifle.

"Hit the deck!" he screamed.

Milliseconds later, the enemy unleashed a torrent of rifle and machine-gun fire. One of the Iraqi soldiers was hit in his upper thigh and was bleeding badly. Cpl. Tyler Christensen, a medic on Col. Payne's advisory team, rushed over to tie a tourniquet around his leg. Soon he was drenched in the Iraqi's blood.

The other Iraqi and American soldiers say they emptied their weapons into the palm grove, killing three men and driving off the rest. The firefight, which lasted about two minutes, was so intense, Sgt. McFarlane says, that when he closed his eyes shortly after the fight he could still see the red streaks of tracer fire coming at him.

When the battle was done, the Americans and the Iraqi soldiers jumped into their vehicles to head back to base with the two men from the car. As they were pulling away, the terrifying night took a bizarre turn.

A man stumbled from the palm grove. His hands were tied behind his back and a blindfold hung loosely around his neck.

"Mister, Mister. Come mister. I am problem," he sobbed in broken English.

Fearing another ambush, the American and Iraqi soldiers approached cautiously. When they realized he wasn't a threat, they freed his hands and took him back to Camp Taji. It was 2 a.m. when they arrived at the base.

The kidnap victim, a 50-year-old employee of the Iraqi Ministry of Defense, told an interrogator back at Camp Taji that had been sitting at a tea stand a half mile from the base when four men carrying rifles pushed him into the back of their car and drove him to the small shack in the palm grove. They then beat him with a metal cable, he says.

"We have been watching you and know where you work," the man says his kidnappers screamed.

The kidnappers had just begun to set up a video camera to film his execution when they heard the Iraqi and American patrol questioning the two men in the white Daewoo sedan just outside the shack. They grabbed their guns and headed into the palm grove. A few seconds later, the kidnap victim says he heard a sustained volley of gunfire.

11-L-0559/OSD/58035

When the shooting stopped, he realized he was alone and began to search for help. He scratched his face against a wall until his blindfold slipped down low enough for him to see and then walked out in the palm grove.

After his interview with the interrogator, the kidnapping victim met with Col. Payne, Col. Saad and the other Iraqi and American soldiers who had saved his life. He lifted up his sweat-stained shirt and showed them the welts and bruises covering his back.

"God sent you to save me," he said as tears streamed down his face.

Col. Payne and Col. Saad finally fell off to sleep around 5:30 a.m. When they woke up they immediately met to start planning the next three night missions. Both men were still giddy. "Every time I think about what happened last night I get a lump in my throat," Col. Payne said.

The American colonel asked Col. Saad what he wanted to name the next night mission. "Operation Candy Rabbit," Col. Saad suggested. A few weeks earlier Col. Payne had given Col. Saad a chocolate Easter rabbit mailed to him in a care package from home.

"Operation Candy Rabbit it is," Col. Payne replied.

Write to Greg Jaffe at greg.jaffe@wsj.com

11-L-0559/OSD/58036

Wall Street Journal
June 17,2006
Pg. 1

A Camp Divided

As U.S. tries to give Iraqi troops more responsibility, clash of two American colonels shows tough road ahead

By Greg Jaffe

Camp Taji, Iraq-This sprawling military base is divided down the middle by massive concrete barriers, a snaking fence and rifle-toting guards. On one side, about 10,000 U.S. Army soldiers live in air-conditioned trailers. There's a movie theater, a swimming pool, a Taco Bell, and a post exchange the size of a Wal-Mart, stocked with everything from deodorant to DVD players.

On the other side are a similar number of Iraqi soldiers whose success will determine when U.S. troops can go home. The Iraqi troops live in fetid barracks built by the British in the 1920s, ration the fuel they use to run their lights and sometimes eat spoiled food that makes them sick.

The only soldiers who pass regularly between the two worlds are about 130 U.S. Army advisers, who live, train and work with the Iraqis.

For many of these advisers, the past six months have been a disorienting experience, putting them at odds with their fellow U.S. soldiers and eroding their confidence in the U.S. government's ability to build an Iraqi force that can stabilize this increasingly violent country.

Army commanders back in the U.S. "told us this was going to be the most thankless and frustrating job we have ever held, and boy, were they right," says Lt. Col. Charles Payne, who until last month oversaw about 50 Army advisers.

He and fellow advisers say U.S. troops on the American side of the base saddle Iraqis with the least-desirable missions and often fail to provide them with the basics they need to protect themselves against insurgent attacks. "They treat the Iraqis with utter scorn and contempt," Col. Payne says. "The Iraqis may not be sophisticated, but they aren't stupid. They see it."

Col. James Pasquarette, who commands most of the soldiers on the U.S. side of Camp Taji, calls those claims "totally ridiculous." He says he's proud of what the Iraqi units have achieved in the region and has made supporting them his top priority, after ensuring his own troops have the protection they need. But he worries that if the Iraqis are given too much latitude to execute challenging missions too quickly, they will alienate Iraqi civilians with heavy-handed tactics.

He says Col. Payne and his fellow advisers have "gone native."

Though the divide here at Camp Taji is extreme, it reflects a growing friction throughout this war-torn country. No one on either side of the divide expects the Iraqi troops to be trained, equipped or housed to U.S. standards. But if U.S. troops are going to go home, U.S. commanders must allow Iraqis to take a far greater role in planning operations and taking the fight to the enemy, senior military officers say.

11-L-0559/OSD/58037

Right now, Iraqi commanders and some of their U.S. advisers say that isn't happening enough. Part of the reason, U.S. officials say, is that widespread Iraqi corruption has made it hard for the fledgling Iraqi government to supply their troops with basics like good food, batteries and fuel. But Iraqi soldiers and their U.S. advisers say the problem extends beyond basic supply issues. They complain that U.S. troops, bunkered down on large, fortified bases, treat Iraqi forces more like a problem than a partner. U.S. forces "don't talk to us," says Col. Saad, a senior Iraqi commander on Camp Taji. The Iraqi colonel, whose family has been threatened by insurgents, asked that his full name not be used.

U.S. commanders counter that there are huge risks to giving the Iraqi army too big a role right now. They worry some Iraqis will leak word of impending operations to the enemy or use military force to settle sectarian scores. Many U.S. commanders say Iraqi forces aren't as disciplined as U.S. troops and are too prone to abuse civilians and detainees.

The debate raises difficult questions for U.S. commanders, as they plot the way forward in Iraq: Should Iraqi units be held to the same standards as U.S. units? What happens when the Iraqis' solution is at odds with the American commander's strategy?

Earlier this spring, the tension between the two sides at Camp Taji reached the breaking point when the Iraqi army brigade that Col. Payne was advising leveled two dozen roadside kiosks. The Iraqi soldiers said insurgent snipers, who had killed and wounded Iraqi troops, used the kiosks for cover.

Col. Pasquarette thought destroying the kiosks would only enrage locals and drive them to support the insurgents. "This was a great day for the terrorists," he recalls telling Col. Payne on the day that the Iraqi army flattened the fruit and vegetable stands.

Col. Payne says the Iraqi army bulldozed the kiosks -- consisting mostly of palm fronds suspended by bamboo poles -- to protect Iraqi soldiers. "When I first heard what they had done, my initial response was, 'I am all for it,'" Col. Payne says. "This is not a law and order situation. This is a war."

Late last month, Col. Pasquarette asked that Col. Payne be dismissed from his position, just four months after the two men started working together. Col. Payne was then assigned to a desk job in Baghdad.

The unit Col. Payne headed is at the leading edge of a major shift in U.S. strategy. Until last summer, the U.S. military saw its primary mission as fighting insurgents. With pressure mounting to bring the 130,000 U.S. troops in Iraq home, President Bush decided the military's main effort should instead focus on training Iraqis to take its place.

To speed development of Iraqi army forces, about 3,000 U.S. soldiers were placed with Iraqi units throughout the country. The teams live and work with Iraqi soldiers in places such as Camp Taji.

In November 2005, Col. Payne came back from retirement to lead his team. The colonel had served 28 years in the Army, fought in the Grenada invasion and taught history at West Point. He retired in July 2001. A few weeks later, terrorists struck the Pentagon and the World Trade Center. Col. Payne called the Army and volunteered to return. "There was a chuckle on the end of the phone," he says. The Army told him he wasn't needed.

Four years later, with the Army stretched thin by the war, the 50-year-old soldier, who was teaching at Virginia Polytechnic Institute, called again. This time, the Army was eager to send him to Iraq. In November, he was told he had 23 days to report to Fort Carson, Colo., and link up with his unit. His wife was "very unhappy," he says. Col. Payne says he was determined to go. "The nation is at war and

11-L-0559/OSD/58038

all real soldiers want to be where the action is."

Col. Pasquarette, a former college basketball player, took command of his 6,000-soldier brigade in June 2005. Before that, the 45-year-old had attended Harvard's Kennedy School of Government, worked for the Joint Chiefs of Staff in the Pentagon and served as an aide-de-camp to a four-star general.

The two men's troops arrived in Iraq in December 2005 and settled on opposite sides of Camp Taji, a sprawling former Iraqi army base, about 20 miles north of Baghdad. Col. Payne's group consisted of 50 U.S. soldiers, assigned to advise the Iraqi military. His team was one of the few at Camp Taji that didn't report to Col. Pasquarette.

The 2,500-soldier Iraqi brigade that Col. Payne was advising had formed 11 months earlier and had been fighting nonstop. The Iraqis had scrounged all of their tanks and armored personnel carriers -- most of which were at least 30 years old -- from a massive junkyard on the Iraqi side of Camp Taji. When something broke, Iraqi soldiers retreated to the scrapyard where they would pillage rusting hulks for spare parts. Of the $260 billion spent on the Iraq war since 2003, about $10 billion has gone to build Iraqi army and police forces.

The U.S. officers bonded quickly with their Iraqi counterparts. In January, Maj. Michael Jason, who leads one of the advisory teams, was on patrol with a 42-year-old Iraqi colonel when a terrified farmer told them he had found bodies in a field. He then led them to the corpses of 11 Iraqi army soldiers who had been headed home on leave. Each had been beaten, blindfolded and shot in the head. Their Iraqi army identification cards had been taken from their wallets and pinned to their shirts by insurgents who regularly target Iraqi forces.

Maj. Jason, a Roman Catholic, and his Iraqi counterpart, Col. Khalid, a Muslim, kneeled next to the bodies and prayed. The U.S. Army asked that Col. Khalid's full name be withheld for his safety. That night, Maj. Jason, a 33-year-old West Point grad, wrote an email home describing his Iraqi colleague's bravery and sacrifice.

"Col. Khalid's children have to move constantly for fear of their lives. When he goes home on leave, he cannot tell anyone for security reasons. He just disappears. He drives 90 mph with a pistol tucked in the small of his back and his ID hidden. I love these guys, no s-t," he wrote. A month later, Col. Khalid's brother, also an army officer, was kidnapped. Insurgents killed him and dumped his body on his parents' doorstep. Col. Khalid couldn't go to the funeral for fear that he would be assassinated. So Maj. Jason and soldiers in the unit mourned with him at Camp Taji.

In March, Col. Khalid left the battalion for a safer assignment, which doesn't require him to leave the base.

As the U.S. advisers grew closer to the Iraqis, they also grew more frustrated with U.S. soldiers on the other side of the base.

Shortly after Col. Pasquarette arrived at Camp Taji, he beefed up the number of guards and armored vehicles at the gates separating the U.S. and Iraqi sides of the base. "Securing my [base] is my No. 1 mission. I am risk averse here," he says. The U.S. advisers to the Iraqis thought the additional guards and guns were unnecessary and only served to make U.S. soldiers more suspicious of the Iraqis.

When the advisers asked if they could bring an Iraqi colleague to eat with them on the American side of the base, they say they were shocked at the response. They were told that the presence of an Iraqi officer

11-L-0559/OSD/58039

in the dining hall might upset the U.S. soldiers.

"These kids go outside the gate and deal with a very hostile environment. They need a place where they can relax and let their guard down," says Lt. Col. Kevin Dixon, Col. Pasquarette's deputy commander. He says the policy was driven by the bombing of a dining facility in Mosul in 2004 by an Iraqi who had sneaked in.

The advisers felt differently. "We really believe there is a systemic contempt for Iraqi soldiers," says Master Sgt. John McFarlane, a senior enlisted adviser to the Iraqis at Camp Taji. The policy has since been amended to allow advisers to eat with Iraqi officers on the U.S. side if they file a letter in advance with the base's security office.

One of the Iraqi army's primary jobs in the Taji area is to guard water-purification substations that provide most of Baghdad's drinking water. Last summer, insurgents blew up one of the substations, cutting off water for two weeks. To ensure that didn't happen again, Iraqi army units were dispatched by the U.S. to guard the sites Iraqi soldiers began to take regular sniper fire there.

In January, the U.S. advisers asked Col. Pasquarette for help installing barriers around one of the substations, to shield the Iraqis from snipers. Col. Pasquarette asked one of his units to help. Weeks passed, but help never came. American engineering units were too busy fortifying the U.S. side of Camp Taji and bases around it, says Maj. Martin Herem, who handled the request

On Feb. 28, a sniper shot in the back one of the Iraqi soldiers at the water station. The soldier bled to death. Three weeks later, a sniper killed a second Iraqi soldier who was on patrol near the water station. Iraqi troops said that both times snipers used the small fruit and vegetable stands lining a nearby road for cover. The Iraqi army couldn't return fire without killing shopkeepers and customers.

When the Iraqi soldiers ran over to ask people who had been shooting at them, locals said they hadn't seen anything. It's dangerous for locals to be seen helping the U.S. Army or the Iraqi army.

The day after the second killing, Col. Saad, an Iraqi colonel in the unit Col. Payne was advising, ordered his men to tell the shopkeepers to empty the vegetable stands. The Iraqi soldiers then bulldozed the stands. Col. Saad says he destroyed the kiosks to protect his soldiers.

When Col. Pasquarette learned about the incident, he was furious. The Iraqis' actions ran completely counter to his strategy. He had told his soldiers to focus less on killing insurgents and more on reconstruction programs designed to win support of the people.

"When you go lethal or destroy property there may be a short-term gain, but there is a long-term loss," he says. He saw the move as a throwback to the Saddam Hussein era when the army was used to quell unrest and inflict mass punishment.

Because the Iraqi troops operate in his sector, Col. Pasquarette oversees them. He called Col. Payne into his office and demanded that he tell Col. Saad to have his soldiers apologize and pay reparations to the shop owners.

Col. Payne passed along the orders. But Col. Saad says he refused to follow them. "Here in Iraq if someone makes a mistake, you punish them," he says, referring to the shop owners' failure to give Iraqis information about the snipers. "If you give him money, he will repeat the mistake. And he will consider the person who gave him the gift an idiot."

11-L-0559/OSD/58040

The next day, Col. Pasquarette met with Col. Saad's Iraqi superior and told him about the dispute. The Iraqi general fired Col. Saad. Later that day, three low-ranking Iraqi soldiers, accompanied by about a dozen Americans, passed out the reimbursement forms.

The Iraqi officers in Col. Saad's brigade felt betrayed. On March 21, just before midnight, four senior officers stopped by Col. Payne's office and threatened to resign. "They were furious," says Col. Payne. Two days later, Col. Saad was quietly re-hired.

Col. Payne says he is still angry that neither Col. Pasquarette nor his subordinate commanders talked to Col. Saad to hear his side of the story. "This is a respect issue. These guys don't respect the Iraqis," Col. Payne says.

"Personally I don't think there was anything to discuss," Col. Pasquarette says.

In the days that followed, the relationship between Col. Payne and Col. Pasquarette grew more tense. In mid-March -- about the time the Iraqis flattened the vegetable stands -- insurgents attacked an Iraqi army patrol base in Tarmiyah, a city of about 50,000, a short drive from Camp Taji. One Iraqi soldier from Col. Saad's brigade was killed by a rocket-propelled grenade and another was shot in the head by a sniper. The next day, four of Col. Saad's soldiers died when their armored personnel carrier hit a roadside bomb. The blast threw the turret of the vehicle about 30 yards and lopped off the head of one of the Iraqi soldiers inside, U.S. and Iraqi officers say.

Senior Iraqi officials in the Ministry of Defense were convinced Tarmiyah was a hotbed of insurgent activity. Col. Pasquarette says he was told by his commander in Baghdad to clear the city of insurgents.

Col. Pasquarette and his team spent several days building a plan before he invited Col. Payne, Col. Saad and Col. Saad's commander to the U.S. side to explain it.

The two Iraqi officers were led through a 208-slide PowerPoint briefing, in which all the slides were written in English. The six areas the Iraqi troops were supposed to occupy were named for New England cities, such as Cranston, Bangor and Concord. The Iraqi officers, who spoke only Arabic, were dumbfounded. "I could see from their body language that both of them were not following what was going on," says Maj. Bill Taylor, Col. Payne's deputy.

Once the plan was explained to them through an interpreter, the Iraqis strongly disagreed with it. Col. Pasquarette planned to surround the city with razor wire and set up checkpoints to search all cars moving in and out of the city. U.S. and Iraqi soldiers would then begin regular foot patrols through the city to gain intelligence on insurgents. The centerpiece of the plan was $5 million in reconstruction projects.

Col. Pasquarette argued that the projects would help the U.S. win support of the city's powerful mayor, Sheik Sayid Jassem, who had been detained by U.S. forces in the early days of the occupation for supporting the insurgency. He also thought the projects would turn the people to the side of the new Iraqi government.

The Iraqis favored a harder-nosed approach. They wanted to conduct house-to-house searches and find a way to put pressure on the mayor, who they insisted was still supporting insurgents. They suggested shutting Tarmiyah's business district down for a week. Once the mayor had been cowed with the stick, they favored dangling the $5 million in reconstruction funds.

11-L-0559/OSD/58041

Col. Pasquarette says the Iraqi approach would have alienated the people in Tarmiyah. He rejected it and stuck to his plan. Although the operation hasn't netted any insurgents, he says people are out shopping and businesses that had been closed are bustling as a result of the checkpoints and foot patrols. The U.S. military is bankrolling a pipeline that will bring potable water into the city, building medical clinics and repairing the main road.

Attacks in the city are down substantially since March, though they have begun to climb of late, Col. Pasquarette says. Still, he says the operation was a success because residents feel safer. He doubts the city was ever really a major insurgent hotbed. "We were all wrong about Tarmiyah," he says.

Col. Saad and Col. Payne say the insurgents have simply moved outside the city's gates.

Gen. George Casey, the top military officer in Iraq, acknowledges it has often been hard for U.S. commanders to let Iraqis take over the fight. "We are so mission-oriented and so focused, we tend to want to do everything ourselves," he says. "It is a constant battle ... . I would hope that when the Iraqis have ideas we try to help them execute them."

Iraqi troops "have never betrayed their U.S. advisory teams," adds Lt. Gen. Martin Dempsey, who is overseeing the effort to train and equip Iraqi forces.

In their four months together, Col. Payne and Col. Saad became close. Col. Payne teased him about a poster on his office wall of two fluffy white kittens, nuzzling next to a dozen roses. "What in the world is the deal with the cat and the flowers?" Col. Payne asked.

"It reminds me of softness and women," Col. Saad replied. He often referred to Col. Payne as "my brother."

Col. Saad confided his worries about his country and his army to Col. Payne. His unit was constantly short of supplies. His soldiers often didn't have enough fuel for their armored vehicles and generaton. They also lacked AA batteries to run the night-vision goggles the Americans had given them. He blamed corruption in the Iraqi system for supply shortages. "If you don't have the basics to survive, you cannot be great. You cannot win," he said one evening. Col. Payne threw his arm around the Iraqi colonel's shoulder. "No, but you can survive," he said.

The U.S. says it is helping the Iraqis fix problems that have led to shortages of equipment. The Iraqi government recently replaced the contractor responsible for serving troops spoiled food. Supplying the army is the responsibility of the Iraqi government and "there have been a few cases of poor performance" among Iraqi contractors, says Lt. Col. Michael Negard, a senior spokesman in *Iraq*. "While the problems aren't huge, the issue's certainly of the highest priority," he says.

Col. Saad has also grown frustrated with the Americans on the other side of Camp Taji. Last month, Col. Pasquarette asked the Iraqis to provide a couple of dozen soldiers to man some checkpoints with U.S. soldiers. The U.S. soldiers showed up at the checkpoints for about a week. Then, without warning, they left the Iraqis to run them on their own, Col. Saad says. The Iraqis, who questioned the value of the checkpoints in the first place, were angry they had suddenly been abandoned.

"Why did they leave? Aren't they supposed to be helping us?" Col. Saad asked Col. Payne.

"I don't know what the hell they are doing," Col. Payne replied.

11-L-0559/OSD/58042

Col. Pasquarette says the Iraqis should have been informed that the U.S. soldiers were pulling out of those checkpoints.

In late May, Col. Payne began to push the Iraqi soldiers to get out on the offensive. "I am sick of sitting around and waiting to get attacked," Col. Payne told Col. Saad. He asked Col. Saad to cut loose 10 or 15 soldiers that he could pair up with three or four U.S. soldiers to venture out at night in search of the enemy. Col. Saad agreed.

On May 19, soldiers from Col. Payne's and Col. Saad's units set out on their second night patrol. After they stopped a car that was out in violation of curfew, the enemy opened fire on them from a surrounding palm grove. The soldiers fired back, killing three insurgents and dispersing the rest. When the shooting ended, a man stumbled out of a small shack deep in the palm grove. His hands were tied and a blindfold hung around his neck. "Come mister. I am problem," he sobbed in broken English.

The man said he worked as a legal adviser for Iraq's Ministry of Defense and had been kidnapped by men who told him they would slaughter him "like a sheep." The kidnappers were setting up a camera to film his execution, he said, when they heard the soldiers and left him. "God sent you to save me," the man said, as tears streamed down his face.

Col. Payne was elated. "The Iraqi army saved a life. It also demonstrated that it will go into the field to find and destroy the enemy," he said.

His Victory, however, quickly gave way to crushing defeat. The next day, he was summoned to meet with his immediate supervisor. Col. Payne was relieved of his command and told to move to a headquarters position in Baghdad.

He says he was told that he removed because he was "ineffective" and "lacked the skills necessary to lead [his] team in this challenging environment." An Army spokesman in Baghdad said Col. Payne wasn't relieved for any single incident. He declined to comment further.

A few days before Col. Payne was fired, Col. Pasquarette said in an interview that he thought Col. Payne and his men had grown too close to the Iraqis they were advising and his decisions were too often guided by emotion. "From my perspective, the move was warranted," Col. Pasquarette wrote in an email after Col. Payne was dismissed.

The morning after he was fired, Col. Payne spent the day saying goodbye to Col. Saad and the U.S. soldiers on his team. That evening, he boarded a helicopter for Camp Victory, a massive U.S. base on the outskirts of Baghdad.

"I'm now here in Victory -- an alien environment to me and one I never wanted to be a part of," he wrote in an email. He was able to hold his emotions in check until his helicopter lifted off from Camp Taji. Then, he says, he began to sob. "I simply cannot tell you how much I will miss my team."

7/4
1830 ✓

~~FOR OFFICIAL USE ONLY~~

JUN 28 2006

Iraq 2

ACTION MEMO

JUN 30 2006

USDP

FOR: SECRETARY OF DEFENSE

FROM Peter W. Rodman, Assistant Secretary of Defense (ISA) JUN 30 2006

SUBJECT: Letter from Dr. Salam Al-Zobaee

- You asked about the attached letter (Tab B) from Iraqi Deputy Prime Minister (DPM) Salam Al-Zobaee.
- Zobaee is the Sunni DPM. His portfolios are security and government services.
- PM Maliki appointed Zobaee interim Minister of Defense (before the appointment of current MoD Abdul Qadir). Zobaee's letter dates from this period of interim service. There is no indication that Zobaee now plays a significant security role.
- Zobaee's letter proposes a direct and continuing discreet dialogue with you, assisted by an American attorney. The proposal:
  - is typical of the Iraqi (especially Sunni) tendency to reach out to U.S. interlocutors, often in lieu of dialogue with other Iraqis; and
  - if accepted, has the potential to weaken the Maliki government, whose members should be encouraged to speak with one voice.
- Also, Zobaee could *use* the fact of a dialogue **with** you to gain leverage over other Iraqi politicians.

RECOMMENDATION: that you sign the letter at Tab A declining a discreet dialogue.

ATTACHMENTS: as stated

COORDINATION: Tab C

Prepared by: C. Straub, ISA-NESA, 571-2517

MA SD		SMA DSD	
ISA SD	7/6	SA DSD	
EXEC SEC	7/2	7/7 0700	
ESR MA	7/6	STF DIR	

~~FOR OFFICIAL USE ONLY~~

11-L-0559/OSD/58044

30 - OSD 09930-06

7/5/2006 2:21:23 PM

THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

JUL 10 2006

His Excellency Dr. Salam Al-Zobaee
Deputy prime Minister
Republic of Iraq
Baghdad

Your Excellency:

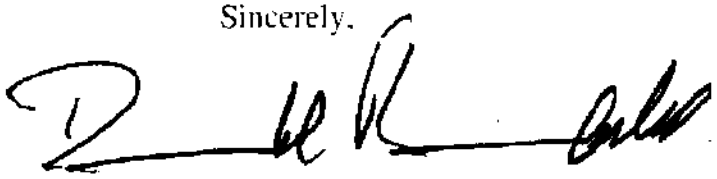
Thank you for your recent letter. I admire your willingness to serve your country and I appreciate your understanding of the importance of dialogue. In my view, the most important dialogue for any Iraqi leader is the conversation with leaders of other Iraqi ethnic and confessional groups.

Your participation in Iraq's unity government is the result of the free choice exercised by millions of your fellow citizens in the December 2005 elections. The United States is proud of its role in making this freedom attainable.

You are right that we Americans want peace for the Iraqis – a peace Iraqis did not enjoy under Saddam's rule, when millions died in domestic oppression and wars of aggression. But today Iraq, not the United States, bears the primary responsibility in making Iraqis secure. The U.S. play a supporting role which will diminish as Iraqi forces grow in effectiveness.

I appreciate your interest in sharing your recommendations on security matters. While I am always interested in the views of Iraqi leaders, I give the greatest weight to the official positions of Iraq's national unity government, as transmitted by the Iraqi Ambassador to the United States. I am confident that your views will be represented in those positions.

Sincerely,



OSD 09930-06
7/11/2006 10:25:02 AM

~~FOUO~~

June 21,2006

TO: Eric Edelman

FROM Donald Rumsfeld

SUBJECT: Letter from Dr. Salam Al-Zobaee

FILE COPY

I don't know the person who sent this letter. What do you think it is about?

Please look into it, and help me figure out how to handle it.

Thanks.

Attach Letter from Dr. Salam Al-Zobaee to SecDef

DHR.ss
SF062106-08

Please Respond By July 05, 2006

JUL 7 2006

SNOWFLAKE RESPONSE ATTACHED

بسم الله الرحمن الرحيم

REPUBLIC OF IRAQ
THE CABINET
Deputy Prime Ministers Office
For Security and Services Affairs

جمهورية العراق
مجلس الوزراء
مكتب نائب رئيس الوزراء
للشؤون الأمنية والخدمات

No .: العدد :
Date : / /2006 التاريخ : / / ٢٠٠٦

The Honorable Donald H. Rumsfeld
Secretary of Defense
1000 Defense Pentagon
Washington, DC 20301-1000

Dear Mr. Secretary:

I know you will agree that the eyes of the world are fixed on what we do in the coming days to stop the bloodshed and restore the rule of law to my beloved country. I recognize the security situation in Iraq is difficult and complicated. It is made more so by those that would pervert the evolving democratic process in Iraq with the politics of religion to control our Government. Therefore, I want to take this opportunity to initiate a dialogue toward accomplishing our mutual goal of a secure Iraq, capable of its own defense.

If the United States fails in its resolve to restore peace to my country, Iraq loses its ally in science, democracy, human rights, and technology. The entire world loses as the enemies of peace spread their poisoned ideology throughout the region. Therefore, we must demonstrate to the world we have the courage to fight this enemy and for the sake of our children, we must win.

06/008084

11-L-0559/OSD/58048

بسم الله الرحمن الرحيم

REPUBLIC OF IRAQ
THE CABINET
Deputy Prime Ministers Office
For Security and Services Affairs

جمهورية العراق
مجلس الوزراء
مكتب نائب رئيس الوزراء
للشؤون الأمنية والخدمات

No.:
Date: / /2006

العدد :
التاريخ / /٢٠٠٦

I am convinced we must set aside past mistakes and focus on the challenges ahead, making it possible to cultivate the seeds of respect and practical cooperation between us necessary to defeat those opposed to an enduring peace in Iraq.

Your President Kennedy once said, "A nation's character, like that of an individual, is elusive. It is produced partly by things we have done and partly by what has been done to us."

I agree with that sentiment. Iraq's character as a nation is evolving through her great suffering and the continued interest and support of the United States is essential to bring that suffering to an end. No peaceful solution for Iraq can be achieved unless we have a real partnership with the United States based on mutual trust and respect.

I want to replace the "language of war" with the language of peace and reconstruction so we can achieve real economic development between our two countries. For the sake of this goal I am ready, for my part, to work closely with the United States and Multinational Forces Iraq to solve such pressing problems as protection of our borders, elimination of foreign terrorists from our soil, disarmament of militias, reconstruction and protection of our critical infrastructure, and restoration of internal security so that all Iraqis can live their lives without fear, in peace and prosperity.

بسم الله الرحمن الرحيم

REPUBLIC OF IRAQ

THE CABINET

Deputy Prime Ministers Office

For Security and Services Affairs

جمهورية العراق

مجلس الوزراء

مكتب نائب رئيس الوزراء

للشؤون الأمنية والخدمات

No.: العدد:

Date: / /2006 التاريخ: / /٢٠٠٦

I am convinced that Iraq can become the lightening rod for similar developments throughout the Middle East. Therefore, I hope it will be possible, before too long, for us to begin that partnership and meet personally for an exchange of views in regard to these matters.

I have asked General Jossef Hassan Al Abasi and Mr. Charles P. Dublin, who enjoy my full confidence, to deliver this letter and assist me in establishing and maintaining our dialogue knowing you appreciate the public relationship is driven by myriad factors beyond ow control while our principal dialogue must, of necessity, be discreet to support our close working relationship. I would ask that every reasonable courtesy be extended to Mr. Dublin to maintain this dialogue as we proceed with our important work.

Sincerely,

Dr. Salam Al-Zobaee
Deputy Prime Minister
For Security and Services Affairs
***Minister* of Defense (commissioned)**

6/6/2006

~~FOR OFFICIAL USE ONLY~~

POLICY COORDINATION SHEET

Subject of Memo: Letter from Dr. Salam Al-Zobaee

I-Number: 06/008084

Title/Organization	Name	Date
Director NESA/NG	John Trigilio **John Trigilio**	27 JAN 06
Principal Director, NESA	 **BGen Paula Thornhill**	27 Jan 06
PDASD ISA	 **Mary Beth Long**	27 Jan 06

SECFILES FULL RECORD DETAIL

Print Date: **7/11/2006**

7-12-06 JhL

DOCUMENT TYPE: ACTION MEMO ATTACHMENT
OSD CONTROL **OSD 09930-06** DOC **6/30/2006** DOR **7/5/2006** SIGNATURE CASE: **C**

FROM USP TO SECDEF
SUBJECT LETTER FROM D R SALAM AGZOBAEE
KEYWORDS AL-ZOBAEE, S RODMAN, P IRAQ
COMMENTS
FN Iraq
ERENCE DO
REFERENCE CUMENTS
STATUS CODE DECISION DECISION DATE PRIORITY ACTION REPORT:
AGENCY ACTION ASSIGNED SUSPENSE **6/30/2006** DOC SUSPENSE:
SUSPENSE COMPLETE ACD COORDINATION
PAGES 1 ENCLOSURES **1**
SUSPENSE STATUS

PACKAGE VIEW:
OSD **09930-06**
INCOMING
FRONT OFFICE DOC
ACTION MEMO
RESPONSE

CREATED BY: **lawson**

DISTRIBUTION: OFFICE COPIES
ADC OWI
USP R

OSD 09930-06

11-L-0559/OSD/58051

~~FOUO~~

June 21,2006

TO: Eric Edelman

FROM: Donald Rumsfeld

SUBJECT: Letter from Dr. Salam Al-Zobaee

I don't know the person who sent this letter. What do you *think* it is about?

Please look into it, and help me figure out how to handle it.

Thanks.

Attach Letter from Dr. Salam Al-Zobaee to SecDef

DHR.ss
SF062106-08

Please Respond By July 05, 2006

21 June 06

6 June 06

~~FOUO~~

11-L-0559/OSD/58052

OSD 09930-06
7/5/2006 2:15:16 PM

بسم الله الرحمن الرحيم

REPUBLIC OF IRAQ

THE CABINET

Deputy Prime Ministers Office

For Security and Services Affairs

جمهورية العراق

مجلس الوزراء

مكتب نائب رئيس الوزراء

للشؤون الأمنية والخدمات

No .:

Date: / /2006

العـــدد :

التاريـــخ : / / ٢٠٠٦

The Honorable Donald H. Rumsfeld
Secretary of Defense
1000 Defense Pentagon
Washington, DC 20301-1000

Dear Mr. Secretary:

I know you will agree that the eyes of the world are fixed on what we do in the coming days to stop the bloodshed and restore the rule of law to my beloved country. I recognize the security situation in Iraq is difficult and complicated. It is made more so by those that would pervert the evolving democratic process in Iraq with the politics of religion to control our Government. Therefore, I want to take *this* opportunity *to* initiate *a* dialogue toward accomplishing our mutual goal of a secure Iraq, capable of its own defense.

If the United States fails in its resolve to restore peace to my country, Iraq loses its ally in science, democracy, human rights, and technology. The entire world loses as the enemies of peace spread their poisoned ideology throughout the region. Therefore, we must demonstrate to the world we have the courage to fight this enemy and for the sake of our children, we must win.

OSD 09930-06

6/20/2006 2:20:21 PM

11-L-0559/OSD/58053

I am convinced we must set aside past mistakes and focus on the challenges ahead, making it possible to cultivate the seeds of respect and practical cooperation between us necessary to defeat those opposed to an enduring peace in Iraq.

Your President Kennedy once said, "A nation's character, like that of an individual, is elusive. It is produced partly by things we have done and partly by what has been done to us."

I agree with that sentiment. Iraq's character as a nation is evolving through her great suffering and the continued interest and support of the United States is essential to bring that suffering to an end. No peaceful solution for Iraq can be achieved unless we have a real partnership with the United States based on mutual trust and respect.

I want to replace the "language of war" with the language of peace and reconstruction so we can achieve real economic development between our two countries. For the sake of this goal I am ready, for my part, to work closely with the United States and Multinational Forces Iraq to solve such pressing problems as protection of our borders, elimination of foreign terrorists from our *soil*, disarmament of militias, reconstruction and protection of our critical infrastructure, and restoration of internal security so that all Iraqis can live their lives without fear, in peace and prosperity.

بسم الله الرحمن الرحيم

REPUBLIC OF IRAQ
THE CABINET
Deputy Prime Ministers Office
For Security and Services Affairs

جمهورية العراق
مجلس الوزراء
مكتب نائب رئيس الوزراء
للشؤون الأمنية والخدمات

No.: العدد :
Date: / / 2006 التاريخ: / / ٢٠٠٦

I am convinced that Iraq can become the lightening rod for similar developments throughout the Middle East. Therefore, I hope it will be possible, before too long, for us to begin that partnership and meet personally for an exchange of views in regard to these matters.

I have asked General Jossef Hassan Al Abasi and Mr. Charles P. Dublin, who enjoy my full confidence, to deliver this letter and assist me in establishing and maintaining our dialogue knowing you appreciate the public relationship is driven by myriad factors beyond our control while our principal dialogue must, of necessity, be discreet to support our close working relationship. I would ask that every reasonable courtesy be extended to Mr. Dublin to maintain this dialogue as we proceed with our important work

Sincerely,

Dr. Salam Al-Zobaee
Deputy Prime Minister
For Security and Services Affairs
Minister of Defense (commissioned)

6/6/2006

THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

JUL 10 2006

Iraq

His Excellency Dr. Salam Al-Zobaee
Deputy Prime Minister
Republic of Iraq
Baghdad

Your Excellency:

Thank you for your recent letter. I admire your willingness to serve your country and I appreciate your understanding of the importance of dialogue. In my view, the most important dialogue for any Iraqi leader is the conversation with leaders of other Iraqi ethnic and confessional groups.

Your participation in Iraq's unity government is the result of the free choice exercised by millions of your fellow citizens in the December 2005 elections. The United States is proud of its role in making this freedom attainable.

You are right that we Americans want peace for the Iraqis – a peace Iraqis did not enjoy under Saddam's rule, when millions died in domestic oppression and wars of aggression. But today Iraq, not the United States, bears the primary responsibility in making Iraqis secure. The U.S. play a supporting role which will diminish as Iraqi forces grow in effectiveness.

I appreciate your interest in sharing your recommendations on security matters. While I am always interested in the views of Iraqi leaders, I give the greatest weight to the official positions of Iraq's national unity government, as transmitted by the Iraqi Ambassador to the United States. I am confident that your views will be represented in those positions.

Sincerely,

10 Jul 06

6 Jun 06

OSD 09930-06
7/11/2006 10:25:02 AM

6/21
1030

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000
ACTION MEMO

PERSONNEL AND READINESS

June 15, 2006, 4:36
DepSec Action_____

FOR: SECRETARY OF DEFENSE

FROM: Dr. David S. C. Chu, USD (Personnel and Readiness)

SUBJECT: Our Mishap Reduction Effort

- You ask us to craft a memo for your signature to send a strong message of accountability for the chain of command and a focus on results. Attached is that memo.

- As you know, we have not met your mishap reduction goal of **50%.** Although some elements within the Department **are** progressing toward their respective goals, others are not.

- While we have made progress on reducing civilian injuries, our challenge lies in making similar reductions for our military personnel. This means reducing flight mishaps, motor vehicle accidents, and military injuries **in** training.

- If you look at all the Departmental activities, you will find we routinely conduct highly dangerous events very safely. From jumping out of airplanes to conducting live fire and maneuver, we have trained our men and women to operate safely in trying conditions.

- There is no excuse for losing lives given proper planning, attention to detail, and the active involvement of the chain of command. Unfortunately, the 124 killed in tactical vehicle rollovers, the dozens killed in aircraft mishaps, the thousands injured in training, and the 277 servicemen and women killed yearly in private motor vehicle crashes means we have not done enough.

- If we are to succeed, we need to drive the military culture to view mishaps as **a** readiness issue

RECOMMENDATION: Sign the attached memorandum.

COORDINATION NONE

Attachment:
As stated

Prepared by: Joseph J. Angello, Jr., Executive Secretary, Defense Safety Oversight Council

MA SD	6/22	SMA DSD	
TSA SD	6/21	SA DSD	
EXEC SEC	MG 20 1015 6/20 07		
ESR MA	6/21	STF DIR	

11-L-0559/OSD/58057

OSD 09959-06
6/20/2006 4:24:04 PM

~~FOUO~~

729

May 02,2006

TO: David Chu

CC: Gordon England

FROM: Donald Rumsfeld D.R.

SUBJECT: Safety Progress

It has been almost four years since we put out the message with the emphasis on safety and set some concrete goals for improvement. It may be time to send out another message applauding the progress -- which I hear is pretty good -- and re-energizing everyone on the subject.

If you agree, please give me a draft memo.

Thanks.

DHR dh
050206-20

Please ***Respond By*** **05/25/06**

JUN 22 2006

SNOWFLAKE RESPONSE ATTACHED

2 May 06

~~FOUO~~

OSD 09959-06

11-L-0559/OSD/58058

6/20/2006 4:23:20 PM

THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

JUN 22 2006

729

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
COMMANDERS OF THE COMBATANT COMMANDS
SERVICE CHIEFS

SUBJECT: Reducing Preventable Accidents

I have set some very specific mishap reduction goals for the Department to achieve. My congratulations to those who are progressing toward their respective goals, but others are not. We must rededicate ourselves to those goals – and achieve them.

Too often we excuse mishaps by citing the difficult circumstances in which we operate. We have trained our men and women to operate safely in very trying conditions. There is no excuse for losing lives given proper planning, attention to detail, and the active involvement of the chain of command.

Accountability is essential to effective leadership. I expect all the Department's leaders, from the Commander to the first line supervisors, to be accountable for mishaps under their watch. We simply will not accept status quo.

22 Jun 06

If we need to change our training, improve our material acquisition, or alter our business practices to save the precious lives of our men and women, we will do it. We will fund as a first priority those technologies and devices that will save lives and equipment. We will retrofit existing systems, and consider these devices as a "must fund" priority for all new systems. We can no longer consider safety as "nice-to-have."

I want to hear what you are doing to improve your safety performance and I want to see the results of your actions.

2 May 06

11-L-0559/OSD/58059

OSD 09959-06
6/22/2006 2:59:57 PM

~~FOUO~~

May 18,2006

TO. David Chu

CC: Gordon England
Gen Pete Pace
Fran Harvey
Donald Winter
Michael Wynne

FROM: Donald Rumsfeld

SUBJECT: Hazing

There have been stories in the press recently about hazing. I would like you to undertake a review and describe for me the Services' current policies dealing with hazing.

I remember when we crossed the Equator, there was hazing. When you first soloed an airplane, they cut off your necktie, and there was some hazing. We have heard about hazing in Special Forces activities, the military academies, and boot camps.

In the 21st century, where people have been injured and harmed by hazing, and where we have a volunteer force, we need to h o w precisely what type of hazing, if any, is still going on.

Thanks.

DHR.dh
051806-06

Please Respond By 06/15/06

~~FOUO~~

OSD 09960-06
6/20/2006 4:36:21 PM
11-L-0559/OSD/58060

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND
READINESS

INFO MEMO

June 15,2006, 1:00PM

FOR: SECRETARY OF DEFENSE

FROM: Under Secretary of Defense for Personnel and Readiness

SUBJECT: Hazing - SNOWFLAKE

- This responds to your attached May 18,2006, memorandum asking for a description of the Services' current policies regarding hazing.

- The Service policies all prohibit hazing. All **use** similar definitions of hazing, drawn from the attached Department of Defense policy on hazing memorandum signed by Secretary Perry on August **28,** 1997:

> ***Hazing is defined as any conduct whereby a military member or members, regardless of Service or rank, withoutproper authority causes another military member or members, regardless of Service or rank, to sufferor be exposed to any activity which is cruel, abusive, humiliating, oppressive, demeaning, or harmful.***

- The Department of Defense Inspector General reports their "record searches disclosed no hazing-related studies by the OIG and very few complaints of hazing. The Defense Hotline reported its database lacks the capability to retrieve data using the keyword "hazing." However, the Director recalls "very few" complaints through the Defense Hotline in recent years.

Attachments:
As stated

Prepared by: COL Christopher Garcia, OUSD(P&R)PI-LP, (b)(6)

OSD 09960-06
6/20/2006 4:35:49 PM
11-L-0559/OSD/58061

~~FOUO~~

May 18,2006

TO: David Chu

CC: Gordon England
Gen Pete Pace
Fran Harvey
Donald Winter
Michael Wynne

FROM: Donald Rumsfeld

SUBJECT Hazing

There have been stories in the press recently about hazing. I would like you to undertake a review and describe for me the Services' current policies dealing with hazing.

I remember when we crossed the Equator, there was hazing. When you first soloed an airplane, they cut off your necktie, and there was some hazing. We have heard about hazing in Special Forces activities, the military academies, and boot camps.

In the 21st century, where people have been injured and harmed by hazing, and where we have a volunteer force, we need to know precisely what type of hazing, if any, is still going on.

Thanks.

DHR.dh
051806-06

Please Respond By 06/15/06

~~FOUO~~

OSD 09960-06
6/20/2006 4:36:21 PM

11-L-0559/OSD/58062

~~FOUO~~

June 05,2006

TO: Eric Edelman

FROM: Donald Rumsfeld

SUBJECT: Trip Books

In the future, please have you shop integrate the DIA books into the books for the various countries and meetings I am going to. It is hard for me *to* have to try to re-collate things.

Thanks.

DHRks2
060106-19

Please ***Respond*** *By* ***June*** *29,2006*

OSD 10031-06
6/22/2006 4356 AM

INFO MEMO

1-06/007407-ES

FOR SECRETARY OF DEFENSE

FROM: Eric S. Edelman, Under Secretary of Defense for Policy

SUBJECT: Trip Books

JUN 21 2006

As you directed, we coordinated with DIA to make sure their products will be integrated into the trip books ISA and ISP give you. When you travel, you will have one trip book that includes DIA's pol-mil assessments, bios, overview briefings, and so on.

All ISA and ISP offices *are* now Following this guidance.

OSD 10031-06

11-L-0559/OSD/58064

6/22/2006 8:43:28 AM

~~FOUO~~

June 8,2006

TO: Eric Edelman

FROM: Donald Rumsfeld

SUBJECT: New Ministers

Please get some information for me on the new Iraqi Ministers of Interior, Defense and National Security. I would like some good, hard information as to what they have done, what their characteristics are, and what people think of them.

Thanks.

DHR:dh
060806-09 (TS).doc

Please respond by June 15, 2006

OSD 10034-06
6/22/2006 8:46:49 AM
11-L-0559/OSD/58065

~~FOUO~~

June 12,2006

TO: Gordon England

FROM: Donald Rumsfeld D.R.

SUBJECT: "The Global Technology Revolution 2020" by RAND

I just went through this ***Global Technology Revolution 2020*** summary. It has some interesting material. Assuming it is close to correct, it seems to me you ought to put together a group to think through the extent to which the Department of Defense is focusing on these technologies, the extent to which they can be used against us, the extent to which we can improve our defense and deterrence.

Please come up with a proposal and we will decide how we want to proceed.

Thanks.

Attach: ***The Global Technology Revolution*** 2020 Executive Summary by RAND

DHR.ss
SF061206-13

Please ***Respond By 07/14/06***

~~FOUO~~

OSD 10055-06
6/22/2006 3:03:43 PM
11-L-0559/OSD/58066

~~FOUO~~

June 12,2006

TO: Gordon England

FROM: Donald Rumsfeld D.R.

SUBJECT: "The Global Technology Revolution 2020" by RAND

I just went through this ***Global Technology Revolution*** 2020 summary. It has some interesting material. Assuming it is close to correct, it seems to me you ought to put together a group to think through the extent to which the Department of Defense is focusing on these technologies, the extent to which they can be used against us, the extent to which we can improve our defense and deterrence.

Please come up with a proposal and we will decide how we want to proceed.

Thanks.

Attach: ***The Global Technology Revolution 2020*** Executive Summary by RAND

DHR:ss
SF061206-13

Please Respond By 07/14/06

OSD 10055-06
6/22/2006 3:03:43 PM
11-L-0559/OSD/58067

The Global Technology Revolution 2020

EXECUTIVE SUMMARY

Bio/Nano/Materials/Information Trends, Drivers, Barriers, and Social Implications

Richard Silberglitt • Philip S. Antón • David R. Howell • Anny Wong
with S. R. Bohandy, Natalie Gassman, Brian A. Jackson, Eric Landree, Shari Lawrence Pfleeger, Elaine M. Newton, and Felicia Wu

Prepared for the
National Intelligence Council

Approved for public release; distribution unlimited

NATIONAL SECURITY RESEARCH DIVISION

11-L-0559/OSD/58068

The research described in this report was prepared for the National Intelligence Council.

Library of Congress Cataloging-in-Publication Data

The Global technology revolution 2020, executive summary : bio/nano/materials/information trends drivers, barriers, and social implications / Richard Silberglitt ...[et al.].
p. cm.
"MG-475."
Includes bibliographical references.
ISBN 0-8330-3910-5 (pbk. : alk. paper)
1. Nanotechnology. I. Silberglitt, R. S. (Richard S.)

T174.7.G584 2006
338.9'260905—dc22

2006009729

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND® is a registered trademark.

© Copyright 2006 RAND Corporation

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from RAND.

Published 2006 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
1200 South Hayes Street, Arlington, VA 22202-5050
4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213
RAND URL: http://www.rand.org/
To order RAND documents or to obtain additional information, contact
Distribution Services: Telephone: (310) 451-7002;
Fax: (310) 451-6915; Email: order@rand.org

11-L-0559/OSD/58069

Foreword

The National Intelligence Council (NIC) sponsored this study by the RAND Corporation to inform the NIC's 2020 project[1] and help provide US policymakers with a view of how world developments could evolve, identifying opportunities and potentially negative developments that might warrant policy action. From June 2004 through August 2005, RAND undertook the challenging task of identifying technologies and applications that have the potential for significant and dominant global impacts by 2020.

As RAND found in its prior study for the NIC, *The Global Technology Revolution* (Antón, Silberglitt, and Schneider, 2001), technology will continue to accelerate and integrate developments from multiple scientific disciplines in a "convergence" that will have profound effects on society. RAND's new study, however, has delved further into social impacts and concluded that

- Regional and country-specific differences in social need and science and technology (S&T) capabilities are resulting in differences in how technology is revolutionizing human affairs around the world,
- Regional differences in public opinion and issues may strongly influence technology implementation,
- Maintaining S&T capacity requires consideration and action across a large number of social capabilities and stability dimensions,
- Capacity building is an essential component of development, and
- Public policy issues relating to some technology applications will engender strong public debate.

The implications of these findings are important to US policymakers. For example, while the United States remains a leader in S&T capability and innovation, it is not the sole leader and thus will not always dominate every technical area. Also, many technologies will evolve globally in ways that differ from their evolution in the United States, so we cannot merely apply a US view as a cookie cutter to understanding how technology will change the world. In addition, US understanding of potential technological threats from foreign powers requires a broad understanding not just of S&T skills and capabilities but also the institutional, human,

[1] See http://www.cia.gov/nic/NIC_2020_project.html for further information on the NIC 2020 Project and its final report, *Mapping the Global Future*.

11-L-0559/OSD/58070

and physical capacity to exploit technological opportunities. Finally, innovative combinations of new and existing technologies can help to meet region-specific needs despite their lack of use in the US sector.

I commend this report to you as a resource for understanding how S&T and social issues interact and depend not only on technological advances but also on the broader capabilities of countries that seek development and economic rewards through S&T exploitation. As important as S&T is today to the United States and the world, it will become even more important in the future.

Dr. Lawrence K. Gershwin
National Intelligence Officer for Science and Technology
Office of the Director of National Intelligence

11-L-0559/OSD/58071

Preface

Various technologies (including biotechnology, nanotechnology [broadly defined], materials technology, and information technology) have the potential for significant and dominant global impacts by 2020. This report is based on a set of *foresights* (not predictions or forecasts)[1] into global technology trends in biotechnology, nanotechnology, materials technology, and information technology and their implications for the world in the year 2020. These foresights were complemented by analysis of data on current and projected science and technology capabilities, drivers, and barriers in countries across the globe. For a more detailed discussion of the material described in this report, including further documentation and references, the reader is strongly recommended to review the in-depth analyses from this study.[2]

This work was sponsored by the National Intelligence Council (NIC) to inform its publication *Mapping the Global Future: Report of the National Intelligence Council's 2020 Project Based on Consultations with Nongovernmental Experts Around the World*, December 2004. In addition, funding was provided by the Intelligence Technology Innovation Center (ITIC) and the U.S. Department of Energy. It is a follow-on report to a RAND Corporation report, *The Global Technology Revolution* (Antón, Silberglitt, and Schneider, MR-1307-NIC, 2001), which was sponsored by the NIC to inform its 2000 document, *Global Trends 2015. Global Trends 2015* and the 1996 NIC document *Global Trends 2010* identified key factors that appeared poised to shape the world by 2015 and 2010, respectively.

This report should be of interest to policymakers, Intelligence Community analysts, technology developers, the public at large, and regional experts interested in potential global technology trends and their broader social effects.

This project was conducted jointly in the Intelligence Policy Center and the Acquisition and Technology Policy Center of the RAND National Security Research Division (NSRD). NSRD conducts research and analysis for the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Department of the Navy, the Marine Corps, the defense agencies, and the Defense Intelligence Community, allied foreign governments, and foundations.

[1] A foresight activity examines trends and indicators of possible future developments without predicting or describing a single state or timeline and is thus distinct from a forecast or scenario development activity (Salo and Cuhls, 2003).

[2] See Silberglitt, Antón, Howell, and Wong (2006), available on the CD-ROM included with the hard copies of this report, or from the RAND Web site at http://www.rand.org/pubs/technical_reports/TR303/.

11-L-0559/OSD/58072

For further information regarding this report, contact its authors or the Intelligence Policy Center Director, John Parachini, at RAND Corporation, 1200 South Hayes Street, Arlington, VA 22202-5050; by telephone at 703.413.1100 x5579, or by email at john_parachini@rand.org. For more information on RAND's Acquisition and Technology Policy Center, contact the Director, Philip Antón. He can be reached by email at atpc-director@rand.org; by telephone at 310.393.0411, x7798; or by mail at RAND Corporation, 1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138. More information about RAND is available at www.rand.org.

11-L-0559/OSD/58073

Contents

Foreword iii
Preface v
Figures and Tables ix
Summary xi
Acknowledgments xiii

Executive Summary 1
Introduction 1
Some Top Technology Applications for 2020 2
Nations Will Continue to Vary in Their Capacity to Reap the Benefits of Technology Applications 4
What Countries Will Be Able to Acquire Which Technology Applications by 2020? 5
What Drivers and Barriers Affect These Countries' Ability to Implement the Technology Applications They Could Acquire? 7
Different Countries, Different Issues: The Capacity of Various Nations to Use Technology Applications to Address National Problems 12
Why Countries Prioritize Economic Growth 13
Countries at Various Levels of Development Prioritize Strengthening the Military 14
Individual Health as a National Priority Generally Follows Public Health 14
Countries' Capacity to Achieve Science and Technology Goals 14
Scientifically Lagging Countries 15
Scientifically Developing Countries 16
Scientifically Proficient Countries 18
Scientifically Advanced Countries 20
The Science and Technology Path to 2020 22
Accelerated Technology Development Will Continue 22
Countries Will Benefit in Considerably Different Ways 23
Action Will Be Required to Maintain a High Level of S&T Capacity 23
Countries That Lack Capacity Will Need to Build It 23
Certain Technology Applications Will Spark Heated Public Debate 24
Consideration Could Head Off Problems and Maximize Benefits 24

11-L-0559/OSD/58074

A Few Words in Conclusion..... *24*

Selected Bibliography..... *27*

11-L-0559/OSD/58075

Figures and Tables

Figures

1. Selected Countries' Capacity to ***Acquire*** the Top 16 Technology Applications **6**
2. Mapping of Country Scientific Capability Rating to Top 16 Technology Applications... 7
3. Drivers and Barriers in Selected Countries 9
4. Selected Countries' Capacity to ***Implement*** the Top 16 Technology Applications..... 11

Tables

1. Technical and Implementation Feasibility of Illustrative *2020* Technology Applications *4*
2. Representative Countries Across Regions of the World Selected for Analysis..... 5

11-L-0559/OSD/58076

Summary

This report presents the results from a set of foresights into global technology trends and their implications for the world in the year 2020. Areas of particular importance include biotechnology, nanotechnology, materials technology, and information technology. A sample of **29** countries across the spectrum of scientific advancement (low to high) was assessed with respect to the countries' ability to acquire and implement 16 key technology applications (**e.g.**, cheap solar energy, rural wireless communications, genetically modified crops). The study's major conclusions include the following:

- Scientifically advanced countries, such as the United States, Germany, and Japan, will be able to implement all key technologies assessed.
- Countries that are not scientifically advanced will have to develop significant capacity and motivation before barriers to technology implementation can be overcome.
- Public policy issues in certain areas will engender public debate and strongly influence technology implementation.

Many technology trends and applications have substantial momentum behind them and will be the focus of continued research and development, consideration, market forces, and debate. These technologies will be applied in some guise or other, and the effects could be dramatic, including significant improvements in human lifespan, reshuffling of wealth, cultural amalgamation or innovation, and reduced privacy.

11-L-0559/OSD/58077

Acknowledgments

We would like to thank Lawrence K. Gershwin, Maj Gen Richard L. Engel (Ret.), William A. Anderson, Brian Shaw, and Julianne Chesky of the National Intelligence Council for their wonderful support and encouragement throughout this study.

The authors thank the following RAND regional experts for very helpful discussions of social and public policy issues, development needs, technological status, and the environment for implementation of technology applications: Keith Crane, Heather Gregg, Nina Hachigian, Rollie Lal, Kevin O'Brien, William Overholt, D.J. Peterson, Angel Rabasa, and Somi Seong. We also acknowledge the helpful discussions of quantum computing and cryptography we had with Calvin Shipbaugh and the several useful inputs on the status of science and technology in India from Ramesh Bapat, and are extremely grateful to Michael Tseng for quantifying the country data on capacity to acquire, drivers, and barriers.

The authors owe a special debt of gratitude to Robert Anderson, Steve Berner, Jennifer Brower, Ted Gordon, and Stephen Larrabee for their insightful reviews of this study and for several important suggestions that contributed greatly to improving the report. We also thank Linda Barron for her help in compiling, formatting, and producing the manuscript. Finally, we acknowledge the outstanding efforts of Stephen Bloodsworth in designing and producing the maps and quadrant charts.

11-L-0559/OSD/58078

Executive Summary

Introduction

The world is in the midst of a global technology revolution. For the past 30 years, advances in biotechnology, nanotechnology, materials technology, and information technology have been occurring at an accelerating pace, with the potential to bring about radical changes in all dimensions of life. The pace of these developments shows no sign of abating over the next 15 years, and it appears that their effects will be ever more remarkable. The technology of 2020 will integrate developments from multiple scientific disciplines in ways that could transform the quality of human life, extend the human lifespan, change the face of work and industry, and establish new economic and political powers on the global scene.

While people often do not understand a technology itself, they can often understand what that technology, when applied, might do for them and the societies in which they live when an application concept is presented to them. Actual adoption, however, is not necessarily automatic because of the confluence of economic, social, political, and other mitigating factors. Such technology applications, designed to accomplish specific functions, and their mitigating factors are the focus of our study.

Increasingly, such applications entail the integration of multiple technologies. New approaches to harnessing solar energy, for instance, are using plastics, biological materials, and nanoparticles. The latest water purification systems use nanoscale membranes together with biologically activated and catalytic materials. Technology applications such as these may help to address some of the most significant problems that different nations face—those involving water, food, health, economic development, the environment, and many other critical sectors.

While extensive, this technology revolution will play out differently around the globe. Although a technology application may be technically possible by 2020, not all countries will necessarily be able to acquire it—much less put it widely to use—within that time frame. An adequate level of science and technology (S&T) capacity is the first requirement for many sophisticated applications. A country might obtain a technology application through its domestic research and development (R&D) efforts, a technology transfer, or an international R&D collaboration—all various indicators of a country's S&T capacity. Or it could simply purchase a commercial off-the-shelf system from abroad. But many countries will not have achieved the necessary infrastructure or resources in 15 years to do such things across the breadth of the technology revolution.

11-L-0559/OSD/58079

What is more, the ability to acquire a technology application does not equal the ability to implement it. Doing research or importing know-how is a necessary initial step. But successful implementation also depends on the drivers within a country that encourage technological innovation and the barriers that stand in its way. Such drivers and barriers reflect a country's institutional, human, and physical capacity;[1] its financial resources; and its social, political, and cultural environment. Each of these factors plays a part in determining a nation's ability to put a new technology application into the hands of users, cause them to embrace it, and support its widespread use over time.

For these reasons, different countries will vary considerably in their ability to utilize technology applications to solve the problems they confront. To be sure, not all technology applications will require the same level of capacity to acquire and use. But even so, some countries will not be prepared in 15 years to exploit even the least demanding of these applications—even if they can acquire them—whereas other nations will be fully equipped to both obtain and implement the most demanding.

Some Top Technology Applications for 2020

Of 56 illustrative applications that we identified as possible by 2020, 16 appear to have the greatest combined likelihood of being widely available commercially, enjoying a significant market demand, and affecting multiple sectors (e.g., water, food, land, population, governance, social structure, energy, health, economic development, education, defense and conflict, and environment and pollution).

- *Cheap solar energy:* Solar energy systems inexpensive enough to be widely available to developing and undeveloped countries, as well as economically disadvantaged populations.
- *Rural wireless communications:* Widely available telephone and Internet connectivity without a wired network infrastructure.
- *Communication devices for ubiquitous information access:* Communication and storage devices—both wired and wireless—that provide agile access to information sources anywhere, anytime. Operating seamlessly across communication and data storage protocols, these devices will have growing capabilities to store not only text but also meta-text with layered contextual information: images, voice, music, video, and movies.
- *Genetically modified (GM) crops:* Genetically engineered foods with improved nutritional value (e.g., through added vitamins and micronutrients), increased production (e.g., by tailoring crops to local conditions), and reduced pesticide use (e.g., by increasing resistance to pests).
- *Rapid bioassays:* Tests that can be performed quickly, and sometimes simultaneously, to verify the presence or absence of specific biological substances.

[1] Institutional capacity includes honest and effective systems of governance, banking and finance, law, education, and health. Human capacity entails the quality and quantity of a country's educated and skilled personnel, as well as the level of education and scientific literacy of its people. Physical capacity involves the quality and quantity of critical infrastructures—e.g., transport and freight networks, schools, hospitals, research facilities, and utilities.

11-L-0559/OSD/58080

- *Filters* and *catalysts*: Techniques and devices to effectively and reliably filter, purify, and decontaminate water locally using unskilled labor.
- Targeted drug delivery: Drug therapies that preferentially attack specific tumors or pathogens without harming healthy tissues and cells.
- Cheap autonomous housing: Self-sufficient and affordable housing that provides shelter adaptable to local conditions, as well as energy for heating, cooling, and cooking.
- Green *manufacturing*: Redesigned manufacturing processes that either eliminate or greatly reduce waste streams and the need to use toxic materials.
- Ubiquitous radio frequency *identification (RFID)* tagging *of* commercial products and individualr: Widespread use of RFID tags to track retail products from manufacture through sale and beyond, as well as individuals and their movements.
- Hybrid vehicles: Automobiles available to the mass market with power systems that combine internal combustion and other power sources while recovering energy during braking.
- *Pervasive sensors*: Presence of sensors in most public areas and networks of sensor data to accomplish real-time surveillance.
- *Tissue* engineering: The design and engineering of living tissue for implantation and replacement.
- Improved diagnostic *and surgical* methods: Technologies that improve the precision of diagnoses and greatly increase the accuracy and efficacy of surgical procedures while reducing invasiveness and recovery time.
- *Wearable computers*: Computational devices embedded in clothing or in other wearable items, such as handbags, purses, or jewelry.
- Quantum *cryptography*: Quantum mechanical methods that encode information for secure transfer.

The technology applications we identified vary significantly in assessed technical feasibility and implementation feasibility by 2020. Table 1 shows the range of this variation on a matrix of 2020 technical feasibility versus 2020 implementation feasibility for all 56 technology applications. *Technical feasibility* is defined as the likelihood that the application will be possible on a commercial basis by 2020. *Implementation feasibility* is the net of all nontechnical barriers and enablers, such as market demand, cost, infrastructure, policies, and regulations. We based its assessment on rough qualitative estimates of the size of the market for the application in 2020 and whether or not it raises significant public policy issues. The numbers in parentheses are the number of sectors that the technology can affect, and the designation global (G) or moderated (M) indicates our estimate, based on both the technical foresights and our discussions with RAND regional experts, of whether the application will be diffused globally in 2020 or will be moderated in its diffusion (i.e., restricted by market, business sector, country, or region).

11-L-0559/OSD/58081

Table 1
Technical and Implementation Feasibility of Illustrative 2020 Technology Applications

Technical Feasibility	Implementation Feasibility: Niche market only (--)	May satisfy a need for a medium or large market, but raises significant public policy issues (-)	Satisfies a well-documented need for a medium market and raises no significant public policy issues (+)	Satisfies a well-documented need for a large market and raises no significant public policy issues (++)
Highly feasible (++)	• Chemical, biological, radiological, or nuclear (CBRN) sensors on emergency response teams (2,G)	• Genetic screening (2,G) • GM crops (8,M) • Pervasive sensors (4,G)	• Targeted drug delivery (5,M) • Ubiquitous information access (6,M) • Ubiquitous RFID tagging (4,G)	• Hybrid vehicles (2,G) • Internet (for purposes of comparison) (7,G) • Rapid bioassays (4,G) • Rural wireless communications (7,G)
Feasible (+)	• GM animals for R&D (2,M) • Unconventional transport (5,M)	• Implants for tracking and identification (3,M) • Xenotransplantation (1,M)	• Cheap solar energy (10,M) • Drug development from screening (2,M) • Filters and catalysts (7,M) • Green manufacturing (6,M) • Monitoring and control for disease management (2,M) • Smart systems (1,M) • Tissue engineering (4,M)	• Improved diagnostic and surgical methods (2,G) • Quantum cryptography (2,G)
Uncertain (U)	• Commercial unmanned aerial vehicles (6,M) • High-tech terrorism (3,M) • Military nanotechnologies (2,G) • Military robotics (2,G)	• Biometrics as sole identification (3,M) • CBRN sensor network in cities (4,M) • Gene therapy (2,G) • GM insects (5,M) • Hospital robotics (2,M) • Secure video monitoring (3,M) • Therapies based on stem cell R&D (5,M)	• Enhanced medical recovery (3,M) • Immunotherapy (2,M) • Improved treatments from data analysis (2,M) • Smart textiles (4,M) • Wearable computers (5,M)	• Electronic transactions (2,G) • Hands-free computer interface (2,G) • "In-silico" drug R&D (2,G) • Resistant textiles (2,G) • Secure data transfer (2,M)
Unlikely (-)	• Memory enhancing drugs (3,M) • Robotic scientist (1,M) • "Super soldiers" (2,M)	• Chip implants for brain (4,M)	• Drugs tailored to genetics (2,M)	• Cheap autonomous housing (4,G) • Print-to-order books (2,G)
Highly unlikely (--)	• Proxy bot (3,M) • Quantum computers (3,M)	• Genetic selection of offspring (2,M)	• Artificial muscles and tissue (2,M)	• Hydrogen vehicles (2,G)

Nations Will Continue to Vary in Their Capacity to Reap the Benefits of Technology Applications

Global diffusion of a technology application does not mean universal diffusion: Not every nation in the world will be able to implement, or even acquire, all technology applications by 2020. The level of direct S&T capacity may be markedly different from one country to another. Within different geographical regions, countries also have considerable differences that play into their ability. These differences may include variations in physical size, natural conditions (e.g., climate), and location (e.g., proximity to oceans and water). The size of the population and demographics (e.g., birthrate) may vary dramatically between countries in a single region. Countries may have very different types of government, economic systems, and levels of economic development.

11-L-0559/OSD/58082

The 29 countries we compared (Table 2) represent not only the world's major geographical regions but also the range of national differences within them. We selected many of these countries specifically as representative of groups of similar nations, trying not to include in a single geographical area more than one country with similar characteristics. If several countries in a given region were very large, for example, we brought in one that would grossly represent all the large countries. If a number of other nations in the same region were small, we included a representative small country.

What Countries Will Be Able to *Acquire* Which Technology Applications by 2020?

Seven of the 29 countries we compared will be *scientifically advanced* through 2020. They will almost certainly have the S&T capacity to acquire all 16 of the top technology applications by 2020. The United States and Canada in North America, Germany in Western Europe, and South Korea and Japan in Asia fall into this category. In Oceania, Australia takes its place on this list, as does Israel in the Middle East. These countries are in blue boxes in Figure 1.

Four of the 29 countries will be *scientifically proficient* through 2020. They will very likely have the necessary S&T capacity through 2020 to acquire 12 of the top 16 technology applications (see Figure 2). China and India in Asia, Poland in Eastern Europe and Russia represent this group. They are shown in green boxes in Figure 1.

Seven of the 29 countries will be *scientifically* developing through 2020. They will have sufficient S&T capacity through 2020 to acquire nine of the top 16 applications (see Figure 2).[2] From South America, Chile, Brazil, and Colombia fall into this group. Mexico in North

Table 2
Representative Countries Across Regions of the World Selected for Analysis

Asia	Oceania	North Africa and the Middle East	Europe	Africa	North America	Central and South America and the Caribbean
China	Australia	Egypt	Georgia	Cameroon	Canada	Brazil
India	Fiji	Iran	Germany	Chad	Mexico	Chile
Indonesia		Israel	Poland	Kenya	United States	Colombia
Japan		Jordan	Russia	South Africa		Dominican Republic
South Korea			Turkey			
Nepal						
Pakistan						

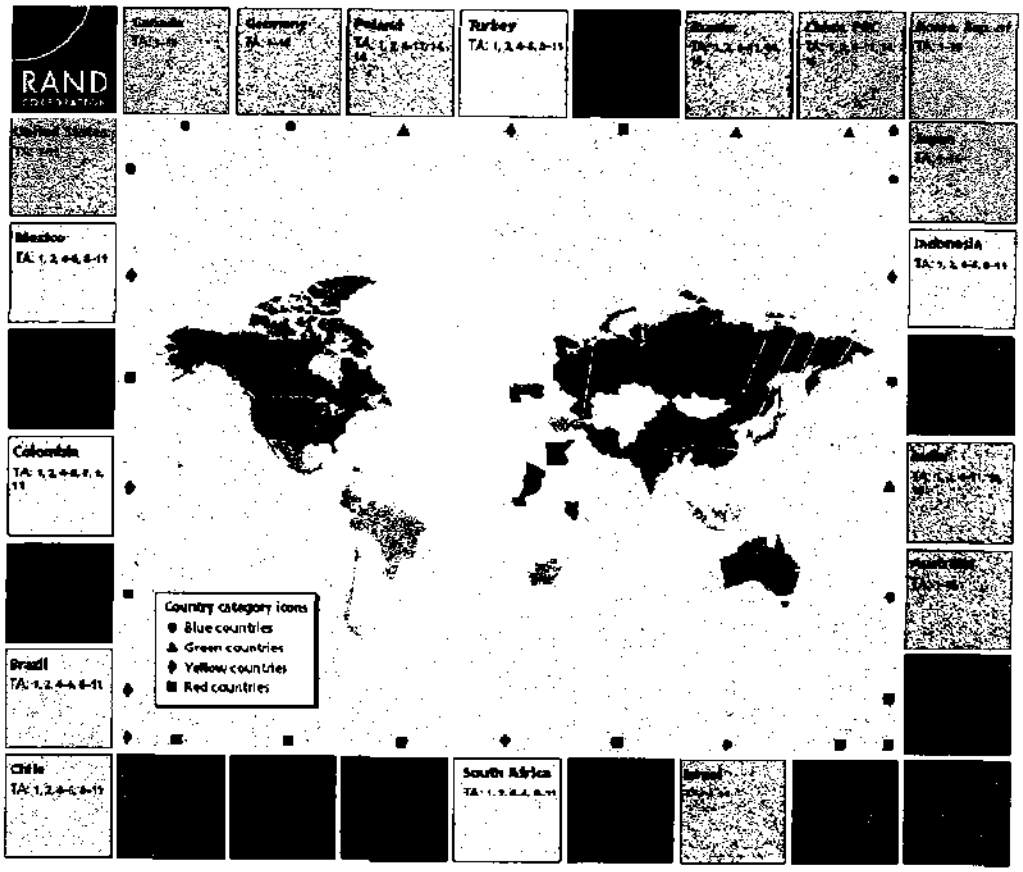
NOTE: We recognize that there are many ways to assign countries to regional groupings. In this instance, we placed Turkey in the European group because of the country's long and sustained commitment to join the European Union.

[2] Colombia will not be able to acquire ubiquitous RFID tagging because its economy is much less involved in international trade than the other countries in this group are, and its domestic and regional markets are unlikely to generate sufficient demand for this technology application

America, Turkey in Europe, Indonesia in Asia, and South Africa in Africa ate also included. These seven countries are shown in yellow **boxes** in Figure 1.

Eleven of the 29 countries will be *scientifically lagging* through 2020. They will have only enough S&T capacity to acquire five of the applications through 2020 (see Figure 2). Fiji in Oceania; the Dominican Republic in the Caribbean; Georgia in Europe; Nepal and Pakistan in Asia; Egypt, Iran, and Jordan in North Africa and the Middle East; and Kenya, Cameroon, and Chad in Africa are in this group. These countries are shown in red boxes in Figure 1.

Figure 1
Selected Countries' Capacity to *Acquire* the Top 16 Technology Applications

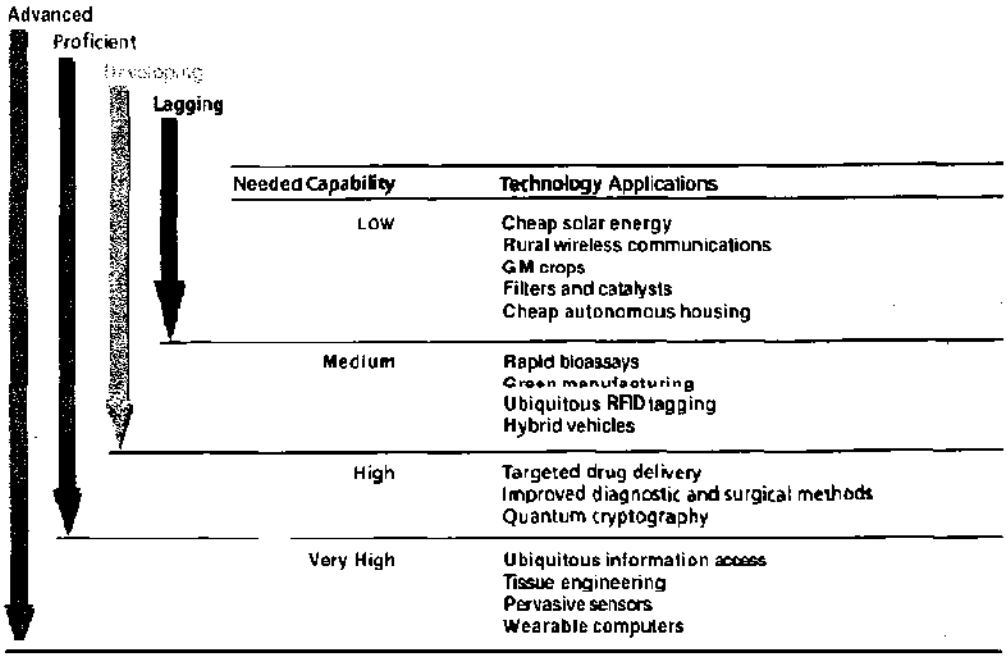


NOTE: Countries were selected as representative of groups of similar nations in a single geographical area. Countries are color coded by their S&T capacity: scientifically advanced (blue), scientifically proficient (green), scientifically developing (yellow) and scientifically lagging (red). Technology application (TA) numbers are as follows: (1) cheap solar energy, (2) rural wireless communications, (3) ubiquitous information access, (4) GM crops, (5) rapid biosensors, (6) filters and catalysts, (7) targeted drug delivery, (8) cheap autonomous housing, (9) green manufacturing, (10) ubiquitous RFID tagging, (11) hybrid vehicles, (12) pervasive sensors, (13) tissue engineering, (14) improved diagnostic and surgical methods, (15) wearable computers, (16)

RAND MG875-1

11-L-0559/OSD/58084

Figure 2
Mapping of Country Scientific Capability Rating to Top 16 Technology Applications



RAND MG975-2

By 2020, one should be able to see several trends in the capacity of countries to acquire technology applications (see Figure 1). Most of North America and Western Europe, along with Australia and the developed economies of East Asia, will be scientifically advanced. Most of Asia and Eastern Europe will be scientifically proficient. Latin America and much of Southeast Asia are likely to be scientifically developing. The majority of Africa and the Middle East, as well as the Caribbean and the Pacific Islands, will be scientifically lagging.

What Drivers and Barriers Affect These Countries' Ability to *Implement* the Technology Applications They Could Acquire?

The S&T capacity that enables a country to acquire a technology application is only one of several factors determining whether that country will be able to implement it. The ***drivers*** facilitating innovation and the ***barriers*** hindering it also have a decisive influence on the ability to ***implement*** technology applications (i.e., to put the applications in place and get significant gains from them across the country). These assessments involve such things as whom an application will benefit and whether a country can sustain its use over time. Drivers and barriers involve the same dimensions: A dimension that is a driver in one context may be a barrier in another. For example, financing, when available, would be a driver, but financing, when

lacking, is a barrier. A high level of literacy among a nation's citizens would be a driver, but if literacy were low, it would form a barrier. And in certain cases, a dimension that is a barrier can simultaneously be a driver when only partial progress in that dimension has been made or when conflicting issues in the dimension are present. For example, education in the United States is a driver, but there are also concerns about problems in math and science education in the United States. Also, environmental concerns may dampen some S&T applications in China while promoting environmentally friendly applications, such as green manufacturing and hybrid vehicles.

These are the major drivers and barriers that countries may face through 2020 (see Figure 3):[3]

- *Cost and financing*: The cost of acquiring the technology application and of building the physical infrastructure and human capital to introduce and sustain its use, the mechanisms and resources available to access the needed funds, and the costs of those funds.
- *Laws and policies:* Legislation and policies that either promote, discourage, or prohibit the use of a particular technology application.
- *Social values, public opinion, and politics*: Religious beliefs, cultural customs, and social mores that affect how a technology application is perceived within a society; compatibility of a new application with dominant public opinions; and the politics and economics underlying debates about an application.
- *Infrastructure*: Physical infrastructure at a consistent threshold of quality that can be maintained, upgraded, and expanded over time.
- *Privacy concerns:* Social values toward privacy in a country and personal preferences about the availability and use of personal data that arise from an individual's ideological inclinations and experience with the privacy issue.
- *Use of resources and environmental health:* Availability and accessibility of natural resources, concerns about pollution and its impact on humans, and social attitudes and politics about conservation and preserving land and wildlife.
- *R&D investment:* Funding to educate and train scientists, engineers, and technicians; build research laboratories, computer networks, and other facilities; conduct scientific research and develop new technologies; transfer technologies to commercial applications; and enter technology applications into the marketplace.
- *Education and literacy:* Levels of general education and literacy adequate to make a population comfortable with technology and able to interface with it, and the availability of sufficiently high-quality postsecondary education and training in the sciences to stock a workforce comfortable with developing, using, and maintaining technology applications.
- *Population and demographics*: Overall size, average age, and growth rate of the population and the relative size of different age groups within a population.

[3] For a detailed discussion of the country driver and barrier assignments in Figure 3, see Silberglitt, Antón, Howell, and Wong *(2006)*.

11-L-0559/OSD/58086

11-L-0559/OSD/58087

Figure 3
Drivers (D) and Barriers (B) in Selected Countries

NOTE: Countries were selected as representative of groups of similar nations in a single geographical area. Countries are color coded by their S&T capacity: scientifically advanced (blue), scientifically proficient (green), scientifically developing (yellow), and scientifically lagging (red). Drivers (D) and barriers (B) are as follows: (a) cost and financing, (b) laws and policies, (c) social values, public opinion, and politics, (d) infrastructure, (e) privacy concerns, (f) use of resources and environmental health, (g) R&D investment, (h) education and literacy, (i) population and demographics, (j) governance and political stability. Technology application (TA) numbers are the same as in Figure 1: (1) cheap solar energy, (2) rural wireless communications, (3) ubiquitous information access, (4) GM crops, (5) rapid bioassays, (6) filters and catalysts, (7) targeted drug delivery, (8) cheap autonomous housing, (9) green manufacturing, (10) ubiquitous RFID tagging, (11) hybrid vehicles, (12) pervasive sensors, (13) tissue engineering, (14) improved diagnostic and surgical methods, (15) wearable computers, (16) quantum cryptography.
RAND MG675-3

- *Governance and political stability*: Degree of effectiveness or corruption within all levels of government; the influence of governance and stability on the business environment and economic performance; and the level of internal strife and violence, as well as external aggression; number and type of security threats.

Figure 4 illustrates the overall capacity of the 29 nations in our sample to implement all the technology applications they will be able *to* acquire.[4] Of the seven scientifically advanced countries able to obtain all 16 applications, the United States and Canada in North America and Germany in Western Europe will also be fully capable of implementing them through 2020. Japan and South Korea in Asia, Australia in Oceania, and Israel in the Middle East will be highly capable of implementing all 16 as well. All these countries will have excellent S&T capacity, along with the highest number of drivers and lowest number of barriers.

China will fall somewhat below these top seven countries; however, it will lead the group of scientifically proficient nations able to obtain 12 applications, with a high level of S&T capacity and many drivers. Still, because it will also possess numerous barriers, China will have to deal with more challenges to implementation than the group of scientifically advanced nations will. India, Poland, and Russia—the other three scientifically proficient countries—will be somewhat less capable than China of implementing the applications they can acquire. In these countries, although the S&T capacity will be high, the number of barriers will slightly exceed the number of drivers, making it more difficult to introduce and sustain the full range of possible technology applications.

All the countries in the scientifically developing group of nations—those able to acquire nine of 16 top applications—will have even less capacity than the proficient group will to implement them beyond laboratory research, demonstrations, or limited diffusion. Brazil and Chile in South America, Mexico in North America, and Turkey in Europe will be the most capable, followed by South Africa, then Indonesia, and finally Colombia. None of these seven countries will have a high level of S&T capacity. And each will have significantly more barriers than drivers.

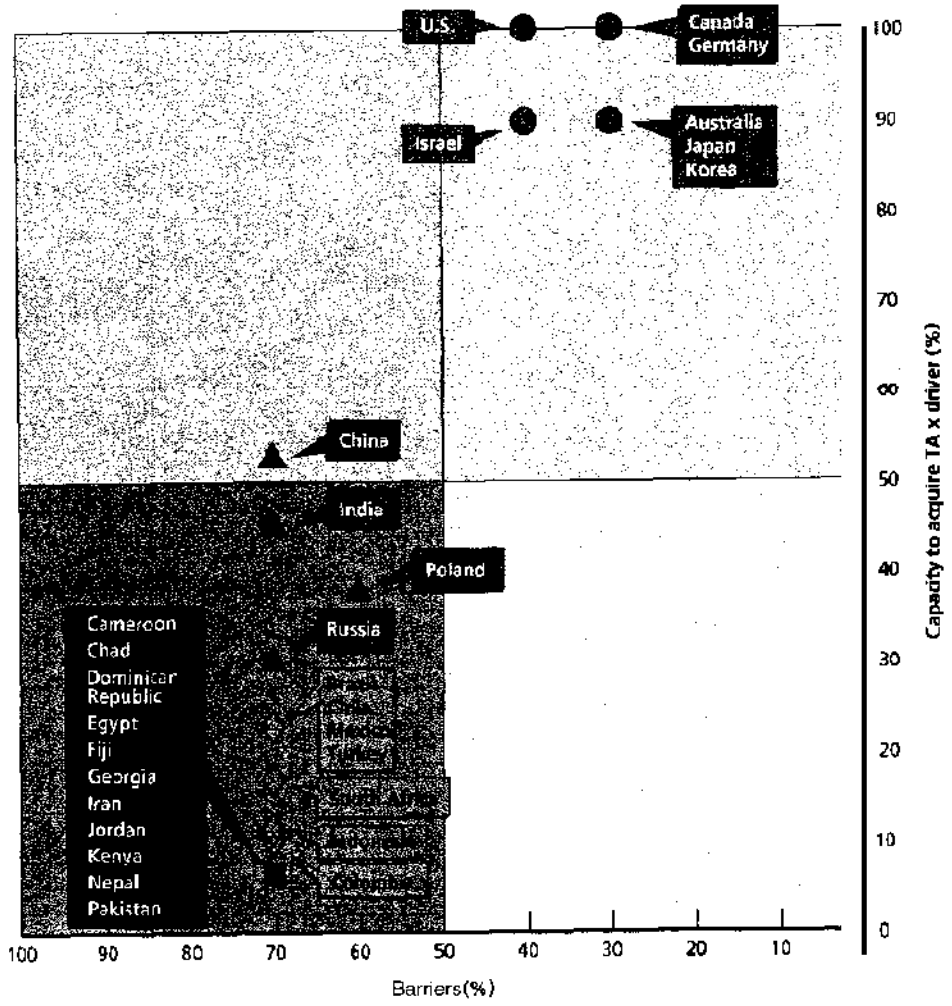
The nations in the scientifically lagging group are able to obtain only five of the top 16 applications. Cameroon, Chad, and Kenya in Africa; the Dominican Republic in the Caribbean; Georgia in Europe; Fiji in Oceania; Egypt, Iran, and Jordan in North Africa and the Middle East; and Nepal and Pakistan in Asia will be the least capable of implementing these applications through 2020. With low levels of S&T capacity, these countries will also face numerous barriers and will benefit from very few drivers. It will therefore be very difficult for these countries to implement any but the simplest technology applications (see Figure 2).

---

[4] We analyzed country capacity to implement technology applications by taking into account three factors: (1) capacity to acquire, defined as the fraction of the top 16 technology applications listed for that country in Figure 1; (2) the fraction of the ten drivers for implementation applicable to that country; and (3) the fraction of the ten barriers to implementation applicable to that country. Figure 4 shows the position of each of the 29 representative countries on a plot for which the y-axis is the product of factors (1) and (2)—i.e., capacity to acquire weighted by the fraction of drivers—and the x-axis is factor (3). (Multiplying capacity to acquire by the fraction of drivers is consistent with the view that the absence of drivers reduces the probability that the technology applications a country can acquire will be implemented.) Both axes are shown as percentages: The y-axis starts at 0 percent (i.e., no capacity to acquire technology applications or drivers) and ends at 100 percent (i.e., capacity to acquire all 16 technology applications, with all 10 drivers applicable). The x-axis starts at 100 percent (i.e., all 10 barriers are applicable) and ends at 0 percent (i.e., no barriers are applicable). This figure provides a first-order assessment of the capacity to implement technology applications, in that we applied equal weighting to all technology applications, drivers, and barriers. We recognize that specific technology applications, drivers, and barriers might be more or less significant in particular countries.

11-L-0559/OSD/58088

Figure 4
Selected Countries' Capacity to Implementthe Top 16Technology Applications



NOTE: The blue quadrant indicates a high level of S&T capacity plus many drivers and few barriers; the green quadrant indicates a high level of SET capacity with many drivers and many barriers; the yellow quadrant indicatesthe lack of a high level of SET capacity **plus** few drivers and few barriers; the red quadrant indicates the lack of a high level of S&T capacity with more barriers than drivers.

RAND MG675-4

None of the countries in our sample, regardless of their level of S&T capacity, will have low numbers of both drivers and barriers through 2020. This reflects the fact that nations cannot reduce barriers without simultaneously developing drivers and S&T resources.

The overall capacity of these representative nations to implement the technology applications they can acquire suggests the following trends:

11-L-0559/OSD/58089

- The technological preeminence of the scientifically advanced countries in North America, Western Europe, and Asia
- The emergence of China and India as rising technological powers, with the scientifically proficient countries of Eastern Europe, as represented by Poland, not far behind
- The relative slippage of Russia as a technological powerhouse
- The wide variation in technological capability among the scientifically developing countries of Southeast Asia and Latin America
- The large scientific and technological gap between the scientifically developing countries of Latin America, as well as Turkey and South Africa, and the rising technological powers, China and India
- The enormous scientific and technological gap between the scientifically lagging countries of Africa, the Middle East, and Oceania and the scientifically advanced nations of North America, Western Europe, and Asia
- The significant gap that must be filled before the scientifically lagging nations can even reach the level of proficiency.

Different Countries, Different Issues: The Capacity of Various Nations to Use Technology Applications to Address National Problems

The overall capacity of countries to implement the technology applications they can acquire provides a good general indication of the variation in how technology might change the world through 2020. It offers a comparative perspective on which countries are likely to be able to actually put technological opportunities into practice, which will be the technological powerhouses, which will be the emerging powers, and which will still be saddled with too many obstacles to benefit from the innovations of the next 15 years. It also suggests how much progress, in general, some countries need to make to exploit the technology revolution.

But just **because** a country has the capacity to implement a certain technology application does not mean that it will want or need to. With distinct sets of problems and diverse profiles, different countries will continue to have different national priorities through 2020. Because technology applications are designed to perform specific functions, they pertain only to certain problems. Consequently, not all **16** applications will be equally relevant for all countries. A country will be unlikely to invest in developing and implementing applications that will not help it achieve its most important goals.

The 16 top technology applications in our study can all help achieve at least several of the following objectives. In theory, all these goals will be important items on national agendas over the next 15 years:

- Promote rural economic development.
- Promote economic growth and international commerce.
- Improve public health.
- Improve individual health.

- Reduce the use of resources and improve environmental health.
- Strengthen the military and warfighters of the future.
- Strengthen homeland security and public safety.

Yet in practical terms, a country will give each of these objectives different priorities, depending on its state of economic and social development, internal politics, and domestic public opinion. Some countries may not even be in a position to pursue some of these goals because they have not yet achieved other, more fundamental, building blocks on which the goals rest. For example, promoting basic rural economic development may be a first step before pursuing international commerce.

Generally, a country's level of S&T capacity links up with indicators of economic and social development. By and large, countries with less S&T capacity also rank lower in the other *two* areas, while countries with more S&T capacity rank higher.[5] Consequently, nations with different levels of S&T capacity often share similar problems and, as a result, tend to prioritize similar objectives. Promoting rural economic development, improving public health, and reducing the use of resources and improving environmental health—all basic development goals—are usually top concerns for countries on the lowest rungs of the development ladder. More-developed countries may also give these goals prominence on their national agendas but often for different reasons and with less urgency. For example, scientifically developing countries are likely to be motivated to implement technology applications that can help them use resources more efficiently and clean up pollution mainly for the possible economic benefits, with environmental gains a secondary goal or spillover effect. As long as their economies are sluggish and living standards low, countries on this rung of the development ladder will not be in a position to pay up front for the long-term health gains of prioritizing environmental issues. Yet in countries whose economies are stronger and whose citizens can better afford (literally) to be concerned about the environment, public demand for cleaner, healthier surroundings and responsible stewardship of natural resources can drive the use of these applications.

Why Countries Prioritize Economic Growth

Economic growth and international commerce push nations up the development ladder. Consequently, promoting them becomes an increasingly important goal as countries build infrastructures, better educate their populations, and enter the global marketplace. For scientifically proficient countries, and even certain scientifically developing ones, driving economic growth can become a first-order concern. For scientifically advanced nations, this goal also usually takes top priority but for different reasons. The global marketplace is changeable and demanding, with new powers emerging and established ones continually vying for a competitive edge. To sustain current levels of prosperity and power, nations at the top of the develop-

[5] Compare the S&T capacity index in Appendix H of our in-depth analysis report (Silberglitt, Antón, Howell, and Wong, 2006) with the per capita gross domestic product and the Human Development Index rankings in Appendix J of the same document.

11-L-0559/OSD/58091

ment ladder must continually seek to push beyond what they already have. In this way, they can retain an advantage in the world of commerce and continue to improve the quality of life of their populations.

Countries at Various levels of Development Prioritize Strengthening the Military

Strengthening a nation's military and warfighters does not necessarily or clearly correspond to a particular position on the development ladder. Certain countries sorely lacking in the most basic living standards have been observed to funnel the majority of their national budget into military spending, given certain circumstances. The same is true for strengthening homeland security and public safety. But in general, nations lower on the development ladder are not in a position to prioritize these two concerns. Meeting the essential needs of their populations—economic growth, health, nutrition, education, infrastructure—is their most urgent objective. Scientifically proficient and advanced countries with more power and more money can better afford to make these goals high priorities.

Individual Health as a National Priority Generally Follows Public Health

Improving individual health is by necessity a secondary goal for some nations. A country can usually only make this objective a matter of real national concern if its public health system is already functioning well and its population enjoys a high standard of living. For this reason, it is typically only a first-order goal in scientifically advanced countries. Technology applications that could help reduce infant mortality rates and increase the average life expectancy—both measures of good public health—are much more important for countries lower on the development ladder.

Countries' Capacity to Achieve Science and Technology Goals

Because national concerns tend to differ in these ways between countries with various levels of S&T capacity, particular sets of technology applications will be much more important, and their impacts much more dramatic, for certain nations than for others. But if a country were to establish a certain goal as a top priority in 2020 and resolve to address it, how capable would it be of actually implementing the applications that would enable it to do so? We looked at the scientifically lagging, developing, proficient, and advanced nations in our sample and for each one answered that question for the objectives likely to be relevant to countries at its level of S&T capacity.

11-L-0559/OSD/58092

Scientifically Lagging Countries

Countries in the scientifically lagging group tend to be at the bottom of the development ladder. Promoting rural economic development, improving public health, and reducing the use of resources and improving environmental health commonly rank highest on national agendas. The populations of many of the countries in our sample lack access to clean water and basic sanitation. Extreme poverty in rural areas can spur massive urban migration and discontent. Disease is often widespread. Essential resources, such as water and arable land, are frequently misused and rapidly dwindling. In many of these countries, the pervasive use of wood and coal-burning stoves is a major problem, generating indoor air pollution that has severe costs for the health of women and children in particular. The need for clean, cheap energy sources is urgent. With rapidly growing populations, low levels of literacy, and great disparities in wealth and power, these countries also frequently need to promote economic growth and international commerce. Stronger national economies would create jobs and generally improve the standard of living. But because very few countries at this level of S&T capacity are active participants in the global economy and because barriers are so abundant, this goal often takes a backseat to more basic development objectives.

All five of the technology applications these countries have the capacity to acquire—cheap solar energy, rural wireless communications, GM crops, filters and catalysts, and cheap autonomous housing—could help them both promote economic development in rural areas and improve public health. Solar energy would provide power for pumping water and irrigating crops, significantly improving agriculture and offering alternatives to subsistence farming (e.g., industrial cooperatives). It would also provide the power to run the filters that purify water supplies and the appliances to store medications. Better and more accessible water, food, and medicine would in turn improve public health. Providing lighting for homes and buildings and power for computers, solar energy could enable rural populations to participate in cottage industries and educate their children, growing the rural economy. Wireless communications would open the floodgate to economic development in remote areas, facilitating both commerce and education. Access to medical information and records would also significantly improve public health. GM crops would make food both more available and more nutritional, reducing the malnutrition and infant mortality that are so pervasive in these countries. Filters and catalysts would enable local populations to make unfit water sources usable and to clean wastewater for reuse. Cheap self-sufficient housing would provide rural populations with basic energy and shelter at minimal cost.

All five applications could also help these countries use fewer resources and improve environmental health. Cheap solar energy would provide energy without fuel combustion, reducing environmental emissions. Solar energy and cheap autonomous housing might help reduce the indoor air pollution generated by wood- and coal-burning stoves. Less reliance on firewood would promote healthy forests that would help control soil erosion; improve the quality of underground water; reduce sediment flows into rivers; and supply food, medicine, and construction materials. Rural wireless communications could help local and national governments monitor resources, environmental conditions, and pollution. GM crops would help conserve the natural resources used for agriculture and eliminate or reduce the magnitude of sources of pollution. Filters and catalysts would help conserve water and reduce waste streams.

11-L-0559/OSD/58093

Of the numerous technology applications that can promote economic growth in general, scientifically lagging nations will be able to acquire only two: cheap solar energy and rural wireless communications. Their benefits in this context lie mainly in helping to build more vital and productive rural economies that will be better able to contribute to their national economy and boost their global competitiveness.

If implemented broadly and sustainably, these technology applications have the potential to dramatically improve the quality of life of the vast majority of people living in poverty in these countries. But in practical terms, the nations in the scientifically lagging group will face considerable challenges in implementing any of the five—despite the fact that they place the least demand on S&T capacity. Drivers are scarce and barriers abundant in these countries. Unless the barriers are addressed, the lack of financial resources; institutional, physical, and human capacity; open markets; and transparent and stable governments will make it ***very*** difficult for the countries that could most benefit from these applications to put them to use.

Scientifically Developing Countries

Nations in the scientifically developing group commonly face many of the same problems as those in the scientifically lagging group. For example, in most of these countries, a significant percentage of the population is **rural,** with many people living at or below the poverty line. Outside the capital, infrastructure is typically poor. Provincial areas commonly lack cheap and stable electricity, a clean and dependable water supply, basic health services, good roads, and schools. As a result, urban populations in many of these nations are growing rapidly as people flock to the cities in hope of better economic opportunities. Consequently, promoting rural economic development is usually a top concern, to reduce rural poverty, soothe discontent, and slow urban migration.

Improving public health is often another leading goal. Because people in many of these countries frequently lack clean water and good sanitation, waterborne diseases are common and generally spread easily. The largely rural populations usually have little access to health care. In nations where cities are growing and people are traveling more frequently both domestically and abroad, the threat of epidemics can increase. In South Africa, for example, AIDS is taking a tremendous toll. Resources can present another major problem. In many nations at this level of S&T capacity, economic activities are further depleting already scarce natural resources and spoiling the environment. At the same time, energy prices are rising. For these reasons, it is imperative for many of them to use their resources more efficiently and improve the health of the environment.

Many of the countries with this level of S&T capacity frequently put promoting economic growth and international commerce higher on national agendas than scientifically lagging countries typically do (but still usually much lower than nations in the proficient and advanced groups). Most of them very much need to manage urban migration, create jobs, and expand the middle class. For countries that are to some degree actively exporting products to the global marketplace (e.g., Chile and Mexico), increasing economic competitiveness is a realistic development goal. Colombia is a clear exception in this regard; its economy is much less involved in international trade than most other nations in this group. The heightened politi-

11-L-0559/OSD/58094

cal instability in some of the countries at this level could lead them to give increased prominence to strengthening homeland security and public safety. For example, in Colombia and Indonesia, political coups and military insurgencies are an ongoing threat.

Cheap solar energy, rural wireless communications, GM crops, filters and catalysts, and cheap autonomous housing could help scientifically developing nations promote economic development in rural areas, for the same reasons as in the scientifically lagging countries. These five, plus two others—rapid bioassays and green manufacturing—could help improve public health as well. The ability to use bioassays to quickly screen for diseases would enable governments to prevent epidemics. It would also increase the probability of correctly prescribing medications, decreasing resistance to antibiotics and other drugs. Reducing the volume of toxic materials in the environment produced by conventional manufacturing processes would improve public health.

Cheap solar energy, rural wireless communications, GM crops, filters and catalysts, green manufacturing, and hybrid vehicles could enable nations in this group to reduce the use of resources and improve environmental health. Again, the benefits would be the same as for the scientifically lagging countries. In addition, green manufacturing would diminish waste streams, allowing energy, water, and land to be used more efficiently; cut down pollutants in the environment; and reduce the burden on local governments of cleaning up polluted areas. Hybrid vehicles would significantly improve air quality, particularly in smog-ridden urban areas in these countries, where emissions are not tightly controlled. This problem is in part a result of urban migration. By addressing it, these countries would make it more appealing to move to the cities, which would allow the resulting economic growth without the negative environmental impact.

As in the lagging countries, cheap solar energy and rural wireless communications could help scientifically developing nations promote economic growth and international commerce. Rapid bioassays and ubiquitous RFID tagging, which nations at this level of S&T capacity can acquire as well, could be equally useful. Rapid bioassays would provide a means of ensuring that people can move safely across borders to conduct business, because it would allow governments to detect unintended transport of infectious disease more effectively. RFID tagging could enhance performance of retail industries, enabling greater control of inventories throughout the supply chain and making marketing more efficient.

Finally, for any country in this group that resolves to strengthen homeland security and public safety, rural wireless communications, rapid bioassays, filters and catalysts, and cheap autonomous housing could all help toward this end. Rural wireless communications would allow law enforcement and emergency response personnel to collect information from remote locations to prevent or respond to terror attacks, internal insurgencies, and disasters. Personnel on the scene would also be able to rapidly transfer information about the incident and response to local authorities. Rapid bioassays could help experts determine types of infections resulting from attacks, along with appropriate response measures. Filters and catalysts would provide potable water when water supplies are not safe. Cheap autonomous housing could provide temporary living quarters for relief workers and people made homeless by an incident.

Scientifically developing countries will vary significantly in their capacity to put technology applications into practice through 2020. Brazil, Chile, Mexico, and Turkey will be most

11-L-0559/OSD/58095

capable of implementing relevant sets of applications (sometimes even on par with Russia in the proficient group). But compared with most of the proficient and advanced countries, their level of capacity will still be very low. South Africa will have even less capacity, and Colombia and Indonesia will have little more than that of the scientifically lagging countries. Overall, nations in this group will be most able to implement the applications that would spur the development of rural economies and reduce the use of resources. They will be somewhat less able to implement applications that could serve to improve public health. South Africa, Colombia, and Indonesia in particular may be severely impaired by the plethora of barriers they face. In terms of promoting economic growth, all the countries in this group will face considerable implementation challenges, and their capacity will be extremely low. These countries may develop more capacity if current positive economic and development trends continue, but without quality infrastructure beyond metropolitan areas, the use of relevant applications may be significantly limited. Finally, nations that aspire to strengthen homeland security will also have very limited capacity to implement the applications that can help in this area.

Scientifically Proficient Countries

Nations in the scientifically proficient group face a dynamic mix of problems. Promoting economic development and international commerce is often a top priority for countries with this level of S&T capacity but for very diverse reasons. The populations of China and India, for example, are quite large and continually growing. These countries urgently need to feed their many people, create jobs, and sustain wide-scale economic development. Yet while Poland and Russia have much smaller populations, economic growth is no less a concern. In the decade following the dissolution of the Soviet Union, Russia has encountered considerable economic difficulties. Although its population is shrinking in real terms, unemployment is high. The exodus of Russian scientists, engineers, and other professionals beginning in the 1990s has weakened the country's institutional and human capacity in science, health, and administration. Poland, as a relatively recent member of the European Union, is in a very different situation: It needs to bring its economy in line with EU standards.

In China and India, a significant fraction of the population is rural and impoverished. The rural economy is not much different from that of scientifically lagging and developing countries: Rapid economic growth is largely confined to urban areas, and rural and urban populations have great disparities in income, as well as health and education. In China in particular, the income gap is widening. Consequently, for both these nations, promoting rural economic development to reduce rural poverty is a much more pressing concern than it is for countries like Poland and Russia—although they still retain a national focus on promoting overall economic growth.

In many scientifically proficient countries, reducing the use of resources and improving environmental health is also among the most important objectives. Valuable assets such as arable land and fresh water—already scarce—are lost every day to land degradation, industrial pollution, and urban growth. In addition, many of these countries are at a level of development at which their populations are becoming increasingly aware of the high economic and health costs of environmental destruction and pollution.

11-L-0559/OSD/58096

For countries in the proficient group that lack clean water, electricity, and good sanitation in certain areas, improving public health is still a first-order concern. Countries at this level can suffer from the same public health issues as countries lower on the development ladder. Contagious diseases can spread easily, making epidemics a significant threat. Infant mortality rates can exceed international standards, and life expectancies can be lower than desirable. Yet at the same time, many countries with this level of S&T capacity are approaching the point on the development ladder where they can begin to aspire to improve individual health as well.

Strengthening the military and warfighters of the future is often a prominent concern for countries in the scientifically proficient group. For example, as a new EU member, Poland needs to modernize its military for greater compatibility with its new security partners. Russia wants to preserve its former status as a world military power. Strengthening homeland security and public safety can also be a relatively high priority. Russia, for instance, faces considerable internal security problems, such as organized crime and armed opposition in Chechnya.

As in the scientifically lagging and developing countries, cheap solar energy, rural wireless communications, rapid bioassays, and ubiquitous RFID tagging could promote economic growth and international commerce in the scientifically proficient countries. In addition, these countries will be able to acquire quantum cryptography, which, in providing a means of transferring information in a secure, reliable manner, could further aid economic development. This application would offer attractive benefits to banking and finance organizations, for example. Just as in the lagging and developing countries, cheap solar energy, rural wireless communications, GM crops, filters and catalysts, and cheap autonomous housing could enable those scientifically proficient nations that make it a priority to do *so* to promote rural economic development.

In terms of improving public health, the same applications that the developing countries have the S&T capacity to acquire toward this end—cheap solar energy, rural wireless communications, GM crops, filters and catalysts, cheap autonomous housing, rapid bioassays, and green manufacturing—could help the proficient nations as well. In addition, these countries have the S&T capacity to acquire targeted drug delivery, which is likely to eventually become such a widespread application that it will enable cancers and other diseases to be treated on site in remote areas, with significant benefits to public health. Similarly, they will be able to acquire the same applications as the developing countries to reduce the use of resources and improve environmental health: cheap solar energy, rural wireless communications, GM crops, filters and catalysts, green manufacturing, and hybrid vehicles.

The benefits to public health from cheap solar energy, rural wireless communications, GM crops, rapid bioassays, filters and catalysts, cheap autonomous housing, and green manufacturing would also better the health of individuals. In addition, targeted drug delivery, by limiting damage to healthy cells and tissues when administering therapies, would enable less-invasive, debilitating treatments and better outcomes. Improved diagnostic and surgical methods would make diagnoses more precise and surgical procedures more effective, and reduced recovery times would give a wider group of patients the option of surgery.

Rural wireless communications, rapid bioassays, filters and catalysts, cheap autonomous housing, ubiquitous RFID tagging, and quantum cryptography would help these proficient nations strengthen their military and warfighters. Military command, control, and commu-

11-L-0559/OSD/58097

nication could be improved with rural wireless communications. Rapid bioassays would allow military medical personnel to identify weapon-grade pathogens in the environment. Filters and catalysts could be employed in situations involving chemical or biological contaminants. Cheap autonomous housing could provide personnel on the ground with improved living quarters. RFID tagging would enable command centers to track the location and conditions of personnel engaged in operations. Quantum cryptography could safeguard tactical communications.

These technology applications could also enhance homeland security and public safety. The benefits would be the same as for the scientifically developing countries. Quantum cryptography could protect critical data and networks from hackers and attackers. In addition, targeted drug delivery, also obtainable by the proficient nations, could expedite responses to chemical and biological attacks and minimize casualties.

In terms of capacity to implement, China consistently has the most, followed by India, and then Poland. In every case, Russia trails, with the least capacity in the group to implement the relevant applications for any of the problem areas. As a whole, these countries have a fairly high capacity to put applications into practice to promote rural economic development and to reduce the use of resources and improve environmental health. Their ability to improve public health will be only slightly less than that. In the first two cases, China approaches the capacity level of several of the scientifically advanced countries, with India not far behind. Russia, in contrast, has no more capacity than the most capable of the scientifically developing nations. The scientifically proficient countries will be moderately capable of implementing the applications that would improve individual health. Implementation capacity will still be substantial but somewhat less for strengthening the military and warfighters and increasing homeland security and public safety. As much as these countries may need to achieve this goal, promoting economic growth and international commerce will be the most challenging of all. The capacity of the proficient countries to implement the relevant applications toward this end will be less than for all the other goals. There will be a very large gap, for example, between their ability to use technology applications to develop their international economy and that to improve public health or reduce the use of resources.

Scientifically Advanced Countries

Nations with the highest level of S&T capacity sit atop the development ladder. Their leading concerns are usually quite different from those of countries with less capacity because they have already achieved the more basic development objectives prerequisite to focusing on those goals. When a national priority is the same, a scientifically advanced country often has very different motivations from those of a lagging or developing one. Promoting economic growth and international commerce is a case in point. The nations in this group are already world economic leaders; their problem is usually to maintain or capture even more of a competitive advantage in an aggressive global market. South Korea, for example, has to deal with a China rapidly gaining S&T capacity and emerging as a commanding economic force. It also needs to gain ground on Japan, the United States, and other economic superpowers. Other advanced countries are contending with skyrocketing health costs. With rapidly aging populations, they need to increase the productivity of their future workforce to finance cutting-edge medical treatment.

11-L-0559/OSD/58098

Aging populations and a high standard of living also put improving individual health at the head of the national agenda in many scientifically advanced countries. Enhancing public health is often an objective, too, but usually a much less prominent one, given that these nations have already achieved very effective public health systems and will gain only marginal benefits. Exceptional circumstances, such as a need to provide emergency medical relief should a disaster strike, usually drive this goal.

Energy can be very costly in some countries in this group. At the same time, public awareness of the negative impacts of pollution and inefficient management of resources is often high. Consequently, citizens in nations at this level of S&T capacity frequently demand cleaner environments and more responsible consumption of natural assets. This can make reducing the use of resources and improving environmental health an important national objective.

Strengthening homeland security and public safety is a principal concern for some nations at this level of S&T capacity. While some nations have had terrorism prevention on their national agendas for a long time, this issue has become more prominent as a number of advanced countries have had recent experiences with terrorism—the United States with the attacks of September 11, 2001, and Spain and the United Kingdom with train bombings, for instance. Public demand in such countries to reduce internal security threats can run very high. Making the military and warfighters of the future stronger is often among their foremost concerns as well, for varying reasons. Both Israel and South Korea face potential threats from hostile neighboring countries; the United States seeks to maintain its global military predominance.

Just as for countries with less S&T capacity that can acquire these applications, cheap solar energy, rural wireless communications, rapid bioassays, ubiquitous RFID tagging, and quantum cryptography could also help the scientifically advanced nations promote economic growth and international commerce. But these countries will be able to acquire more sophisticated applications as well—ubiquitous information access, pervasive sensors, tissue engineering, and wearable computers. Agile access to information could improve productivity, create new avenues for conducting business on the run, and expand global Internet commerce. Pervasive sensors could help manage logistics, determine market demand, and safeguard electronic transactions. Expertise in sensor development and data management would expand a company's commercial opportunities. The technical or medical expertise to engineer tissue, the capability to manufacture it, or any related intellectual property rights would have the same effect. Wearable computers would open exciting new doors for economic sectors based on computation.

To improve individual health, the scientifically advanced nations could acquire cheap solar energy, rural wireless communications, GM crops, rapid bioassays, filters and catalysts, targeted drug delivery, cheap autonomous housing, green manufacturing, tissue engineering, and improved diagnostic and surgical methods. In addition, ubiquitous information access would make health information available anywhere and anytime and facilitate information sharing between patients and providers. Tissue engineering would minimize medical complications and recurrences by providing new ways of treating wounds, disease, and injuries. It might also permit classes of chronically ill or formerly untreatable individuals to join the workforce. Wearable computers could enable patients or their doctors to continuously moni-

11-L-0559/OSD/58099

tor patients' health status. Along with the relevant applications obtainable by countries lower on the development ladder, ubiquitous information access would also contribute to improving public health at this level of S&T capacity.

All the applications that could help reduce the use of resources and improve environmental health would be available to the advanced nations: cheap solar energy, rural wireless communications, GM crops, filters and catalysts, green manufacturing, and hybrid vehicles. To strengthen homeland security and public safety, advanced countries will be able to acquire rural wireless communications, rapid bioassays, filters and catalysts, targeted drug delivery, cheap autonomous housing, and quantum cryptography. In addition, ubiquitous access to information would facilitate information sharing and increase the ability to track individual's activities. Pervasive sensors would provide governments with a powerful tool for law enforcement. Together with miniaturized communications devices, wearable computers could enable personnel to send and receive instructions in conflict situations.

Rural wireless communications, rapid bioassays, filters and catalysts, cheap autonomous housing, ubiquitous RFID tagging, and quantum cryptography could all help strengthen the military and warfighters. Beyond these, ubiquitous information access could improve combat planning and execution, logistics, and support functions. Pervasive sensors could be implemented in tactical situations to provide updated intelligence and targeting. The increased ability to exchange instructions provided by wearable computers would be a significant advantage in military situations as well.

For any of the national objectives that they choose to prioritize, all the scientifically advanced countries will be highly capable of implementing the full set of relevant technology applications. With abundant drivers, relatively few barriers, and unrivaled S&T ability, these advanced countries are the only ones among our sample likely to be able to implement, on a broad scale, the applications that demand the highest level of infrastructure and institutional, physical, and human capacity.

The Science and Technology Path to 2020

As the global technology revolution proceeds over the next 15 years, it will follow a trajectory with certain defining characteristics.

Accelerated Technology Development Will Continue

We see no indication that the rapid pace of technology development will slow in the next decade and a half. Neither will the trends toward multidisciplinarity and the increasingly integrated nature of technology applications reverse. Indeed, most of the top 16 technology applications for 2020 draw from at least three of the areas addressed in this study—biotechnology, nanotechnology, materials technology, and information technology—and many involve all four. Underlying these trends are global communications (Internet connectivity, scientific conferences, and publications) and instrumentation advances (the development and cross-fertilization of ever more-sensitive and selective instrumentation).

11-L-0559/OSD/58100

Countries Will Benefit in Considerably Different Ways

Over the next 15 years, certain countries will possess vastly different S&T capacities. They will also vary considerably in the institutional, human, and physical capacity required to develop drivers for implementing technology applications and overcome barriers. Consequently, the global technology revolution will play out quite differently among nations.

The scientifically advanced countries of North America, Western Europe, and Asia, along with Australia, are likely to gain the most, as exemplified by their capacity to acquire and implement all the top 16 example technology applications. For whatever problems and issues that rank high on their national agendas, they will be able to put into practice a wide range of applications to help address them.

If they can address multiple barriers to implementation, emerging economies, such as China and India in Asia and Brazil and Chile in South America, will be able to use technology applications to support continued economic growth and human development for their populations. Emerging technological powers China and India will have the best opportunity to approach the ability of the scientifically advanced countries to use applications to achieve national goals. The scientifically proficient countries of Eastern Europe, as represented by Poland, appear to be poised next in line behind China and India. In contrast, it looks likely that Russia's capacity to implement technology applications will continue to deteriorate, with the most advanced of the scientifically developing countries (represented by Brazil, Chile, Mexico, and Turkey) potentially overtaking her.

The scientifically lagging countries around the world will face the most severe problems — disease, lack of clean water and sanitation, and environmental degradation. They will also likely lack the resources to address these problems. Consequently, they stand to gain the most from implementing the 2020 technology applications. However, to do so, these nations will need to make substantial inroads in building institutional, physical, and human capacity. The efforts and sponsorship of international aid agencies and other countries may assist in these efforts, but the countries themselves will have to improve governance and achieve greater stability before they will be able to benefit from available S&T innovations.

Action Will Be Required to Maintain a High Level of S&T Capacity

The accelerating pace of technology development and the growing capacity of emerging economies to acquire and implement technology applications will make economic security a moving target even for the most advanced nations. If countries are to stay ahead in their capacity to implement applications, they will need to make continuing efforts to ensure that laws, public opinion, investment in R&D, and education and literacy are drivers for, and not barriers to, technology implementation. In addition, they will have to build and maintain whatever infrastructure is needed to implement the applications that will give them a competitive advantage.

Countries That Lack Capacity Will Need to Build It

For scientifically lagging and developing countries, implementing technology applications to address problems and issues will not be primarily about technology, or even S&T capacity. The greater challenge they will face is the lack of institutional, human, and physical capacity,

11-L-0559/OSD/58101

including effective and honest governance. Development results from improvements in economic growth, social equity, health and the environment, public safety and security, and good governance and stability. The countries with the best performance in these indicators of development will most likely have the greatest institutional, human, and physical capacity to implement technology applications. Less-developed countries that hope to benefit from technology applications will have to improve their performance in these development areas to build the requisite institutional, human, and physical capacity.

Certain Technology Applications Will Spark Heated Public Debate

Several of the top 16 technology applications will raise significant public policy issues that will trigger strong, and sometimes conflicting, reactions and opinions between countries, regions, and ethnic, religious, cultural, and other interest groups. Many of the most controversial applications will involve biotechnology (e.g., GM crops). Others, such as pervasive sensors and certain uses of RFID implants to track and identify people, will potentially have provocative implications for personal privacy and freedom. Yet any controversy that flares up will probably not be the same around the world. A technology application that raises extremely divisive questions in one country may cause no stir at all in another because of different social values.

Consideration Could Head Off Problems and Maximize Benefits

Public policy issues will need to be resolved before a country will be able to realize the full benefits of a technology application. Not all technology may be good or appropriate in every circumstance, and just because a country has the capacity to implement a technology application does not necessarily mean that it should. Ethical, safety, and public concerns will require careful analysis and consideration. Public policy issues will need to be debated in an environment that seeks to resolve conflicts. Such public debate, in addition to being based on sound data, will need to be inclusive and sensitive to the range of traditions, values, and cultures within a society. In some cases, issues will remain after the debate, slowing or even stopping technology implementation. Sometimes the reasons clearly will be good (e.g., when safety concerns cannot be adequately addressed), and sometimes the result will simply reflect collective decisionmaking determining what a particular society wants and does not want.

A Few Words in Conclusion

As the global technology revolution proceeds, market forces will moderate and vector its course, its technology applications, and their implementation. Predicting the net effect of these forces is predicting the future—wrought with all the difficulties of such predictions. But current technology trends have substantial momentum behind them and will certainly be the focus of continued R&D, consideration, and debate over the next 15 years. By 2020, countries will be applying many of these technologies in some guise or other and the effects will be significant, changing lives across the globe.

11-L-0559/OSD/58102

Selected Bibliography

For a more detailed discussion of the material described in this report, including further documentation and references, the reader is strongly encouraged to review our in-depth analyses in the following companion report:

Silberglitt, Richard, Philip S. Antón, David R. Howell, and Anny Wong, with Natalie Rose Gassman, Brian A. Jackson, Eric Landree, Shari Lawrence Pfleeger, Elaine M. Newton, and Felicia Wu, *The Global Technology Revolution 2020— In-Depth Analyses: Bio/Nano/Materials/Info Trends, Drivers, Barriers, and Social Implications*, Santa Monica, Calif.: RAND Corporation, TR-303-NIC, 2006. Online at http://www.rand.org/pubs/technical_reports/TR303/index.html.

Technology Foresight

Applewhite, Ashton, "The View from the Top: Forty Leading Lights Ponder Tech's Past and Consider Its Future," *IEEE Spectrum*, Vol. 41, No. 11, November 2004, pp. 36–51.

Christensen, Clayton M., *The Innovator? Dilemma*, New York HarperCollins, 2003.

Glenn, Jerome C., and Theodore J. Gordon, *Future S&T Management Policy Issues: 2025 Global Scenarios*, Washington, D.C.: Millennium Project, American Council for the United Nations University, undated. Online at http://www.acunu.org/millennium/scenarios/st-scenarios.html (as of March 2006).

———, "Millennium 3000 Scenarios," excerpt from *State of the Future at the Millennium*, Washington, D.C.: Millennium Project, American Council for the United Nations University, undated. Online at http://www.acunu.org/millennium/m3000-scenarios.html (as of March 2006).

———, *2004 State of the Future*, executive summary. Washington, D.C.: Millennium Project, American Council for the United Nations University, 2004.

National Intelligence Council, *Global Trends 2015: A Dialogue About the Future with Nongovernment Experts*, Central Intelligence Agency, NIC 2000-02, 2000. Online at http://www.cia.gov/cia/reports/globaltrends2015/ (as of March 2006).

———, *Mapping the Global Future: Report of the National Intelligence Council's 2020 Project*, Central Intelligence Agency, NIC 2004-13, 2004. Online at http://www.cia.gov/nic/NIC_globaltrend2020.html (as of March 2006).

Salo, Ahti, and Kerstin Cuhls, "Technology Foresight: Past and Future," *Journal of Forecasting*, Vol. 22, Nos. 2–3, March–April 2003, pp. 79–82.

11-L-0559/OSD/58103

Technology Trends and Applications

Anderson, Robert H., Philip S. Anton, Steven C. Bankes, Tora K. Bikson, Jonathan P. Caulkins, Peter J. Denning, James A. Dewar, Richard O. Hundley, and C. Richard Neu, *The Global Course of the Information Revolution: Technological Sends—Proceedings of an International Conference*, Santa Monica, Calif.: RAND Corporation, CF-157-NIC, 2000. Online at **http://www.rand.org/pubs/conf_proceedings/CF157/index.html** (as of March 2006).

Antón, Philip S., Richard Silberglitt, and James Schneider, *The Global Technology Revolution: Bio/Nano/Materials Trends and their Synergies with Information Technology by 2015*, Santa Monica, Calif.: RAND Corporation, MR-1307-NIC, 2001. Online at **http://www.rand.org/pubs/monograph_reports/MR1307/index.html** (as of March 2006).

Cohen, Smadar, and Jonathan Leor, "Rebuilding Broken Hearts," *Scientific American*, Vol. 291, No. 5, November 2004, pp. 44–51. Online at http://www.sciam.com/article.cfm?articleID=0007428C-6DD4-1178-AD6883414B7F0000 (as of March 2005).

Hundley, Richard O., Robert H. Anderson, Tora K. Bikson, and C. Richard Neu, *The Global Course of the Information Revolution: Recurring Themes and Regional Variations*, Santa Monica, Calif.: RAND Corporation, MR-1680-NIC, 2003. Online at http://www.rand.org/pubs/monograph_reports/MR1680/index.html (as of March 2006).

International Roadmap Committee, "Emerging Research Devices," in *International Technology Roadmap for Semiconductors, 2003 Edition*, San Jose, Calif.: Semiconductor Industry Association, 2003. Online at http://public.itrs.net/Files/2003ITRS/Home2003.htm (as of March 2006).

———, *International Technology Roadmap for Semiconductors: 2004 Update*, San Jose, Calif.: Semiconductor Industry Association, 2004. Online at http://www.itrs.net/Common/2004Update/2004Update.htm (as of March 2006).

Langer, Robert, and David A. Tirrell, "Designing Materials for Biology and Medicine," *Nature*, Vol. 428, No. 6982, April 1, 2004, pp. 487–492.

National Nanotechnology Initiative, "What Is Nanotechnology?" Web page, undated, http://www.nano.gov/html/facts/whatIsNano.html (as of March 2006).

Royal Academy of Engineering, *Nanoscience and Nanotechnologies: Opportunities and Uncertainties*, London, 2004. Online at http://www.raeng.org.uk/policy/reports/nanoscience.htm (as of March 2006).

U.S. Department of Commerce, Technology Administration, *A Survey of the Use of Biotechnology in Industry*, October 2003. Online at http://www.technology.gov/reports/Biotechnology/CD120a_0310.pdf (as of March 2006).

U.S. National Science Foundation and U.S. Department of Commerce, *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology and Cognitive Science*, Arlington, Va., June 2002. Online at http://www.wtec.org/ConvergingTechnologies (as of March 2006).

Country Capacity to Acquire and Implement Technology Applications

Bhargava, Vinay, and Emil Bolongaita, *Challenging Corruption in Asia: Case Studies and a Framework for Action*, Washington, D.C.: The World Bank 2004.

Central Intelligence Agency, *The World Factbook*, July 14, 2005. Online at http://www.cia.gov/cia/publications/factbook/ (as of March 2006).

Freedom House, *Freedom in the World 2005: The Annual Survey of Political Rights and Civil Liberties*, 2004. Online at http://www.freedomhouse.org/template.cfm=15&year=2005 (as of March 2006).

Kaufman, Daniel, and Aart Kraay, "Governance and Growth: Causality Which Way?—Evidence for the World, in Brief," The World Bank, February 2003. Online at http://www.worldbank.org/wbi/governance/pdf/growthgov_synth.pdf (as of March 2006).

Kaufman, Daniel, Aart Kraay, and Massimo Mastruzzi, *Governance Matters IV: Governance Indicators for 1996–2004*, Washington, D.C.: World Bank Institute, May 9, 2005. Online at http://www.worldbank.org/wbi/governance/pubs/govmatters4.html (as of March 2006).

Transparency International, "Transparency International Global Corruption Barometer," July 3, 2003. Online at http://www.transparency.org/policy_and_research/surveys_indices (as of March 2006).

———, Corruption Perception Index 2005. Online at http://ww1.transparency.org/cpi/2005/cpi2005_infocus.html (as of March 2006).

Wagner, Caroline, Irene Brahmakulam, Brian Jackson, Anny Wong, and Tatsuro Yoda, *Science and Technology Collaboration: Building Capacity in Developing Countries*, Santa Monica, Calif.: RAND Corporation, MR-1357.0-WB, 2001. Online at http://www.rand.org/pubs/monograph_reports/MR1357.0/index.html (as of March 2006).

Wilson, Ernest J., *The Information Revolution and Developing Countries*, Cambridge, Mass.: MIT Press, 2004.

Wong, Anny, Aruna Balakrishnan, James Garulski, Thor Hogan, Eric Landree, and Maureen McArthur, *Science and Technology Research and Development Capacity in Japan: Observations from Leading U.S. Researcher and Scientists*, Santa Monica, Calif.: RAND Corporation, TR-211-MRI, 2004. Online at http://www.rand.org/pubs/technical_reports/TR211/index.html (as of March 2006).

Problems and Issues

Board on Global Health and Institute of Medicine, *Microbial Threats to Health: Emergence, Detection, and Response*, Washington, D.C.: National Academies Press, 2003. Online at http://www.nap.edu/books/030908864X/html/ (as of March 2006).

Cohen, Desmond, "Poverty and HIV/AIDS in Sub-Saharan Africa," Issue Paper No. 27, United Nations Development Programme, undated. Online at http://www.undp.org/hiv/publications/issues/english/issue27e.html (as of March 2006).

Food and Agriculture Organization of the United Nations, *The State of Food and Agriculture, 2003–2004—Agricultural Biotechnology: Meeting the Needs of the Poor?* Rome, Italy: United Nations, *2004*. Online at http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/006/Y5160E/Y5160E00.htm (as of March 2006).

National Research Council, *Review of the Research Program of the Partnership for a New Generation of Vehicles: Seventh Report*, Washington, D.C.: National Academy Press, 2001.

———, *The Hydrogen Economy Opportunities, Costs, Barriers, and R&D Needs*, Washington, D.C.: National Academies Press, 2004.

Pew Initiative on Food and Biotechnology, *Bugs in the System? Issues in the Science and Regulation of Genetically Modified Insects*, Washington, D.C.: Pew Charitable Trusts, *2004*. Online at http://www.pewtrusts.com/pdf/pifb_bugs_012204.pdf (as of March 2006).

Sustainable Mobility Project, *Mobility 2030: Meeting the Challenges to Sustainability*, Geneva, Switzerland: World Business Council for Sustainable Development, 2004. Online at http://www.wbcsd.org/Plugins/DocSearch/details.asp?DocTypeId=25&ObjectId=NjA5NA&URLBack=%2Ftemplates%2FTemplateWBCSD2%2Flayout%2Easp%3Ftype%3Dp%26MenuId%3DMjYz%26doOpen%3D1%26ClickMenu%3DLeftMenu (as of March 2006).

U.S. Department of Energy, "Basic Research Needs for the Hydrogen Economy," Basic Energy Sciences Workshop on Hydrogen Production, Storage, and Use, Rockville, Md., May 13–15, 2003. Online at http://www.sc.doe.gov/bes/reports/abstracts.html#NHE (as of March 2006).

Woodward, John D., Katharine Watkins Webb, Elaine M. Newton, Melissa Bradley, David Rubenson, Kristina Larson, Jacob Lilly, Katie Smythe, Brian K. Houghton, Harold Alan Pincus, Jonathan M. Schachter, and Paul Steinberg, *Army Biometric Applications: Identifying and Addressing Sociocultural Concerns*, Santa Monica, Calif: RAND Corporation, MR-1237-A, 2001. Online at http://www.rand.org/pubs/monograph_reports/MR1237/index.html (as of March 2006).

World Health Organization, "Water-Related Diseases," Web page, undated, http://www.who.int/water_sanitation_health/diseases/oncho/en/ (as of March 2006).

———, *Emerging Issues in Water and Infectious Diseases*, Geneva, Switzerland, 2003. Online at http://www.who.int/water_sanitation_health/emerging/emergingissues/en/ (as of March 2006).

———, *Avian Influenza: Assessing the Pandemic Threat*, Geneva, Switzerland, 2005.

———, Food Safety Department, *Modern Food Biotechnology, Human Health and Development*, Geneva, Switzerland, *2005*. Online at http://www.who.int/foodsafety/biotech/who-study/en/ (as of March 2006).

Wu, Felicia, and William P. Butz, *The Future of Genetically Modified Crops: Lessons from the Green Revolution*, Santa Monica, Calif: RAND Corporation, MG-161-RC, 2004. Online at http://www.rand.org/pubs/monographs/MG161/index.html (as of March 2006).

11-L-0559/OSD/58106

~~FOUO~~

June 12,2006

TO: Gordon England

FROM: Donald Rumsfeld

SUBJECT "The Global Technology Revolution 2020" by RAND

I just went through this ***Global Technology Revolution 2020*** summary. It has some interesting material. Assuming it is close to correct, it seems to me you ought to put together a group to think through the extent to which the Department of Defense is focusing on these technologies, the extent to which they can be used against us, the extent to which we can improve our defense and deterrence.

Please come up with a proposal and we will decide how we want to proceed.

Thanks.

Attach: ***The Global Technology Revolution 2020*** Executive Summary by ***RAND***

DHR.ss
SF061206-13

Please Respond By 07/14/06

~~FOUO~~

OFFICE OF THE SECRETARY OF DEFENSE
1920 DEFENSE PENTAGON
WASHINGTON, DC 20301-1920

DIRECTOR OF
NET ASSESSMENT

5 July 2006

MEMORANDUM FOR Office of the Deputy Secretary of Defense

SUBJECT The Global Technological Revolutiou 2020

In accordance with a 22 June memo from your office, we reviewed *The Global* Technological *Revolution* of *2020* Executive *Summary* by **RAND** for the implications within *the* report's conclusions and their potential impacts on the DoD. We found the document is a direct, albeit simple, extrapolation assaying sixteen selected technologies (of *56* originally under consideration) and their potential impacts around the globe. The report breaks down the impact of these technologies based upon the ability of the selected nations to either acquire or apply these technologies. few of the technologies have any purely military applications, or applications exclusive to national defense. Almost all of the technologies may have dual uses which could benefit the US security sector, although not necessarily exclusively within the DoD. The most directly relevant technology mentioned is the application of aspects of some quantum mechanic properties to the field of encryption, although the Executive Summary did not address this aspect. The Executive Summary of the report limited itself to extant or developing technologies.

The primary security implications contained within this report are the potential (and unstated) second-order effects of some of the technologies. For example, the widespread availability of cheap solar energy and rural wireless communications, as well as advanced filters and catalysts for water purification, may result in population explosions unforecast at this tiore duc to drastically reduced child mortality rates in several Third-World nations. The report's conclusions, however, are limited to First-Order effects related to the separate nation's abilities to either acquire and field the selected technologies. The effects cited, as expectedgiven the technologies selected, were not defense related but were primarily involved in developing .economic,health, and environmental results. With the exception of the aforementioned quantum encryption, none seem to have a direct defense application that might be used against us.

The SECDEF's recommendation for a panel investigation may not be viable, as we do not see any obvious .direct defense applications for the great majority of the technologies listed. The SECDEF may be better served with a roundtable study and brief report which examines the Second-Order effects of societal and economic shifts and byproducts resultant from the technologies identified in this RAND Executive Summary. The point of contact on this topic is LTC Robert Bateman at (b)(6) or Robert.Bateman@osd.mil.

A.W. MARSHALL

MA SD		SMA OSD	
ASA SD		SA DSD	
EXEC SEC		STF DIR	
RSR MA			

OSD 10055-06
7/6/2006 12:02:58 PM

11-L-0559/OSD/58108

The Global Technology Revolution 2020

EXECUTIVE SUMMARY

Bio/Nano/Materials/Information Trends, Drivers, Barriers, and Social Implications

Richard Silberglitt • Philip S. Antón • David R. Howell • Anny Wong
with S. R. Bohandy, Natalie Gassman, Brian A. Jackson, Eric Landree, Shari Lawrence Pfleeger, Elaine M. Newton, and Felicia Wu

Prepared for the
National Intelligence Council

Approved for public release; distribution unlimited

NATIONAL SECURITY RESEARCH DIVISION

11-L-0559/OSD/58109

The research described in this report was prepared for the National Intelligence Council.

Library of Congress Cataloging-in-Publication Data

The Global technology revolution 2020, executive summary : bio/nano/materials/information trends, drivers, barriers, and social implications / Richard Silberglitt ... [et al.].
p. cm.
"MG-475."
Includes bibliographical references.
ISBN 0-8330-3910-5 (pbk. : alk. paper)
1. Nanotechnology. I. Silberglitt, R. S. (Richard S.).

T174.7.G584 2006
338.9'260905—dc22

2006009729

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND® is a registered trademark.

© Copyright 2006 RAND Corporation

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from RAND.

Published 2006 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
1200 South Hayes Street, Arlington, VA 22202-5050
4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213
RAND URL: http://www.rand.org/
To order RAND documents or to obtain additional information, contact
Distribution Services: Telephone: (310) 451-7002;
Fax: (310) 451-6915; Email: order@rand.org

11-L-0559/OSD/58110

Foreword

The National Intelligence Council (NIC) sponsored this study by the RAND Corporation to inform the NIC's 2020 project[1] and help provide US policymakers with a view of how world developments could evolve, identifying opportunities and potentially negative developments that might warrant policy action. From June 2004 through August 2005, RAND undertook the challenging task of identifying technologies and applications that have the potential for significant and dominant global impacts by 2020.

As RAND found in its prior study for the NIC, *The* Global *Technology Revolution* (Antón, Silberglitt, and Schneider, 2001), technology will continue to accelerate and integrate developments from multiple scientific disciplines in a "convergence" that will have profound effects on society. RAND's new study, however, has delved further into social impacts and concluded that

- Regional and country-specific differences in social need and science and technology (S&T) capabilities are resulting in differences in how technology is revolutionizing human affairs around the world,
- Regional differences in public opinion and issues may strongly influence technology implementation,
- Maintaining S&T capacity requires consideration and action across a large number of social capabilities and stability dimensions,
- Capacity building is an essential component of development, and
- Public policy issues relating to some technology applications will engender strong public debate.

The implications of these findings are important to US policymakers. For example, while the United States remains a leader in S&T capability and innovation, it is not the sole leader and thus will not always dominate every technical area. Also, many technologies will evolve globally in ways that differ from their evolution in the United States, so we cannot merely apply a US view as a cookie cutter to understanding how technology will change the world. In addition, US understanding of potential technological threats from foreign powers requires a broad understanding not just of S&T skills and capabilities but also the institutional, human,

[1] See http://www.cia.gov/nic/NIC_2020_project.html for further information on the NIC 2020 Project and its final report, *Mapping the Global Future*.

11-L-0559/OSD/58111

and physical capacity to exploit technological opportunities. Finally, innovative combinations of new and existing technologies can help to meet region-specific needs despite their lack of use in the US sector.

I commend this report to you as a resource for understanding how S&T and social issues interact and depend not only on technological advances but also on the broader capabilities of countries that seek development and economic rewards through S&T exploitation. As important as S&T is today to the United States and the world, it will become even more important in the future.

Dr. Lawrence K. Gershwin
National Intelligence Officer for Science and Technology
Office of the Director of National Intelligence

11-L-0559/OSD/58112

Preface

Various technologies (including biotechnology, nanotechnology [broadly defined], materials technology, and information technology) have the potential for significant and dominant global impacts by 2020. This report is based on a set of *foresights* (not predictions or forecasts)[1] into global technology trends in biotechnology, nanotechnology, materials technology, and information technology and their implications for the world in the year 2020. These foresights were complemented by analysis of data on current and projected science and technology capabilities, drivers, and barriers in countries across the globe. For a more detailed discussion of the material described in this report, including further documentation and references, the reader is strongly recommended to review the in-depth analyses from this study.[2]

This work was sponsored by the National Intelligence Council (NIC) to inform its publication *Mapping the Global Future: Report of the National Intelligence Council's 2020 Project Based on Consultations with Nongovernmental Experts Around the World*, December 2004. In addition, funding was provided by the Intelligence Technology Innovation Center (ITIC) and the U.S. Department of Energy. It is a follow-on report to a RAND Corporation report, *The Global Technology Revolution* (Antón, Silberglitt, and Schneider, MR-1307-NIC, 2001), which was sponsored by the NIC to inform its 2000 document, *Global Trends 2015. Global Trends 2015* and the 1996 NIC document *Global Trends 2010* identified key factors that appeared poised to shape the world by 2015 and 2010, respectively.

This report should be of interest to policymakers, Intelligence Community analysts, technology developers, the public at large, and regional experts interested in potential global technology trends and their broader social effects.

This project was conducted jointly in the Intelligence Policy Center and the Acquisition and Technology Policy Center of the RAND National Security Research Division (NSRD). NSRD conducts research and analysis for the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Department of the Navy, the Marine Corps, the defense agencies, and the Defense Intelligence Community, allied foreign governments, and foundations.

---

[1] A foresight activity examines trends and indicators of possible future developments without predicting or describing a single state or timeline and is thus distinct from a forecast or scenario development activity (Salo and Cuhls, 2003).

[2] See Silberglitt, Antón, Howell, and Wong (2006), available on the CD-ROM included with the hard copies of this report, or from the RAND Web site at http://www.rand.org/pubs/technical_reports/TR303/.

11-L-0559/OSD/58113

For further information regarding this report, contact its authors or the Intelligence Policy Center Director, John Parachini, at RAND Corporation, 1200 South Hayes Street, Arlington, VA 22202-5050; by telephone at 703.413.1100 x5579, or by email at john_parachini@rand.org. For more information on RAND's Acquisition and Technology Policy Center, contact the Director, Philip Antón. He can be reached by email at atpc-director@rand.org; by telephone at 310.393.0411, x7798; or by mail at RAND Corporation, 1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138. More information about RAND is available at www.rand.org.

11-L-0559/OSD/58114

Contents

Foreword iii
Preface v
Figures and Tables ix
Summary xi
Acknowledgments xiii

Executive summary 1
Introduction 1
Some Top Technology Applications for 2020 2
Nations Will Continue to Vary in Their Capacity to Reap the Benefits of Technology Applications 4
What Countries Will Be Able to Acquire Which Technology Applications by 2020? 5
What Drivers and Barriers Affect There Countries' Ability to *Implement* the Technology Applications They Could Acquire 7
Different Countries, Different Issues: The Capacity of Various Nations to Use Technology Applications to Address National Problems 11
Why Countries Prioritize Economic Growth 13
Countries at Various Levels of Development Prioritize Strengthening the Military 14
Individual Health as a National Priority Generally Follows Public Health 14
Countries' Capacity to Achieve Science and Technology Goals 14
Scientifically Lagging Countries 15
Scientifically Developing Countries 16
Scientifically Proficient Countries 18
Scientifically Advanced Countries 20
The Science and Technology Path to 2020 22
Accelerated Technology Development Will Continue 22
Countries Will Benefit in Considerably Different Ways 23
Action Will Be Required to Maintain a High Level of S&T Capacity 23
Countries That Lack Capacity Will Need to Build It 23
Certain Technology Applications Will Spark Heated Public Debate 24
Consideration Could Head Off Problems and Maximize Benefits 24

11-L-0559/OSD/58115

A Few Words in Conclusion., ... 24

Selected Bibliography., ... 27

Figures and Tables

Figures

1. Selected Countries' Capacity to *Acquire* the Top 16 Technology Applications 6
2. Mapping of Country Scientific Capability Racing to Top 16 Technology Applications ... 7
3. Drivers and Barriers in Selected Countries 9
4. Selected Countries' Capacity to *Implement* the Top 16 Technology Applications 11

Tables

1. Technical and Implementation Feasibility of Illustrative 2020 Technology Applications 4
2. Representative Countries Across Regions of the World Selected for Analysis 5

11-L-0559/OSD/58117

Summary

This report presents the results from a set of foresights into global technology trends and their implications for the world in the year 2020. Areas of particular importance include biotechnology, nanotechnology, materials technology, and information technology. A sample of 29 countries across the spectrum of scientific advancement (low to high) was assessed with respect to the countries' ability to acquire and implement 16 key technology applications (e.g., cheap solar energy, rural wireless communications, genetically modified crops). The study's major conclusions include the following:

- Scientifically advanced countries, such as the United States, Germany, and Japan, will be able to implement all key technologies assessed.
- Countries that are not scientifically advanced will have to develop significant capacity and motivation before barriers to technology implementation can be overcome.
- Public policy issues in certain areas will engender public debate and strongly influence technology implementation.

Many technology trends and applications have substantial momentum behind them and will be the focus of continued research and development, consideration, market forces, and debate. These technologies will be applied in some guise or other, and the effects could be dramatic, including significant improvements in human lifespan, reshuffling of wealth, cultural amalgamation or innovation, and reduced privacy.

11-L-0559/OSD/58118

Acknowledgments

We would like to thank Lawrence K. Gershwin, Maj Gen Richard L. Engel (Ret.), William A. Anderson, Brian Shaw, and Julianne Chesky of the National Intelligence Council for their wonderful support and encouragement throughout this study.

The authors thank the following RAND regional experts for very helpful discussions of social and public policy issues, development needs, technological status, and the environment for implementation of technology applications: Keith Crane, Heather Greg, Nina Hachigian, Rollie Lal, Kevin O'Brien, William Overholt, D.J. Peterson, Angel Rabasa, and Somi Seong. We also acknowledge the helpful discussions of quantum computing and cryptography we had with Calvin Shipbaugh and the several useful inputs on the status of science and technology in India from Ramesh Bapat, and are extremely grateful to Michael Tseng for quantifying the country data on capacity to acquire, drivers, and barriers.

The authors owe a special debt of gratitude to Robert Anderson, Steve Berner, Jennifer Brower, Ted Gordon, and Stephen Larrabee for their insightful reviews of this study and for several important suggestions that contributed greatly to improving the report. We also thank Linda Barron for her help in compiling, formatting, and producing the manuscript. Finally, we acknowledge the outstanding efforts of Stephen Bloodsworth in designing and producing the maps and quadrant charts.

11-L-0559/OSD/58120

Executive Summary

Introduction

The world is in the midst of a global technology revolution. For the past 30 years, advances in biotechnology, nanotechnology, materials technology, and information technology have been occurring at an accelerating pace, with the potential to bring about radical changes in all dimensions of life. The pace of these developments shows no sign of abating over the next 15 years, and it appears that their effects will be ever more remarkable. The technology of 2020 will integrate developments from multiple scientific disciplines in ways that could transform the quality of human life, extend the human lifespan, change the face of work and industry, and establish new economic and political powers on the global scene.

While people often do not understand a technology itself, they can often understand what that technology, when applied, might do for them and the societies in which they live when an application concept is presented to them. Actual adoption, however, is not necessarily automatic because of the confluence of economic, social, political, and other mitigating factors. Such technology applications, designed to accomplish specific functions, and their mitigating factors are the focus of our study.

Increasingly, such applications entail the integration of multiple technologies. New approaches to harnessing solar energy, for instance, are using plastics, biological materials, and nanoparticles. The latest water purification systems use nanoscale membranes together with biologically activated and catalytic materials. Technology applications such as these may help to address some of the most significant problems that different nations face—those involving water, food, health, economic development, the environment, and many other critical sectors.

While extensive, this technology revolution will play out differently around the globe. Although a technology application may be technically possible by 2020, not all countries will necessarily be able to acquire it—much less put it widely to use—within that time frame. An adequate level of science and technology (S&T) capacity is the first requirement for many sophisticated applications. A country might obtain a technology application through its domestic research and development (R&D) efforts, a technology transfer, or an international R&D collaboration—all various indicators of a country's S&T capacity. Or it could simply purchase a commercial off-the-shelf system from abroad. But many countries will not have achieved the necessary infrastructure or resources in 15 years to do such things across the breadth of the technology revolution.

11-L-0559/OSD/58121

What is more, the ability to acquire a technology application does not equal the ability to implement it. Doing research or importing know-how is a necessary initial step. But successful implementation also depends on the drivers within a country that encourage technological innovation and the barriers that stand in its way. Such drivers and barriers reflect a country's institutional, human, and physical capacity;[1] its financial resources; and its social, political, and cultural environment. Each of these factors plays a part in determining a nation's ability to put a new technology application into the hands of users, cause them to embrace it, and support its widespread use over time.

For these reasons, different countries will vary considerably in their ability to utilize technology applications to solve the problems they confront. To be sure, not all technology applications will require the same level of capacity to acquire and use. But even so, some countries will not be prepared in 15 years to exploit even the least demanding of these applications—even if they *can* acquire them—whereas other nations will be fully equipped to both obtain and implement the most demanding.

Some Top Technology Applications for *2020*

Of 56 illustrative applications that we identified as possible by 2020, 16 appear to have the greatest combined likelihood of being widely available commercially, enjoying a significant market demand, and affecting multiple sectors (e.g., water, food, land, population, governance, social structure, energy, health, economic development, education, defense and conflict, and environment and pollution).

- *Cheap solar energy*: Solar energy systems inexpensive enough to be widely available to developing and undeveloped countries, as well as economically disadvantaged populations.
- *Rural wireless communications*: Widely available telephone and Internet connectivity without a wired network infrastructure.
- *Communication devices for ubiquitous information access*: Communication and storage devices—both wired and wireless—that provide agile access to information sources anywhere, anytime. Operating seamlessly across communication and data storage protocols, these devices will have growing capabilities to store not only text but also meta-text with layered contextual information; images, voice, music, video, and movies.
- *Genetically modified (GM) crops*: Genetically engineered foods with improved nutritional value (e.g., through added vitamins and micronutrients), increased production (e.g., by tailoring crops to local conditions), and reduced pesticide use (e.g., by increasing resistance to pests).
- *Rapid bioassays*: Tests that can be performed quickly, and sometimes simultaneously, to verify the presence or absence of specific biological substances.

[1] Institutional capacity include honest and effective systems of governance, banking and finance, law, education, and health. *Human capacity entails the quality and quantity of a country's educated and skilled personnel*, as well as the level of education and scientific literacy of its people. Physical capacity involves the quality and quantity of critical infrastructures—e.g., transport and freight networks, schools, hospitals, research facilities, and utilities.

- *Filters and catalysts*: Techniques and devices to effectively and reliably filter, purify, and decontaminate water locally using unskilled labor.
- *Targeted drug delivery*: Drug therapies that preferentially attack specific tumors or pathogens without harming healthy tissues and cells.
- *Cheap autonomous housing*: Self-sufficient and affordable housing that provides shelter adaptable to local conditions, as well as energy for heating, cooling, and cooking.
- Green *manufacturing*: Redesigned manufacturing processes that either eliminate or greatly reduce waste streams and the need to use toxic materials.
- *Ubiquitous radio frequency identification (RFID) tagging of commercial products and individuals*: Widespread use of RFID tags to track retail products from manufacture through sale and beyond, as well as individuals and their movements.
- *Hybrid vehicles*: Automobiles available to the mass market with power systems that combine internal combustion and other power sources while recovering energy during braking.
- *Pervasive sensors*: Presence of sensors in most public areas and networks of sensor data to accomplish real-time surveillance.
- *Tissue engineering*: The design and engineering of living tissue for implantation and replacement.
- *Improved diagnostic and surgical methods*: Technologies that improve the precision of diagnoses and greatly increase the accuracy and efficacy of surgical procedures while reducing invasiveness and recovery time.
- *Wearable computers*: Computational devices embedded in clothing or in other wearable items, such as handbags, purses, or jewelry.
- *Quantum cryptography*: Quantum mechanical methods that encode information for secure transfer.

The technology applications we identified vary significantly in assessed technical feasibility and implementation feasibility by 2020. Table 1 shows the range of this variation on a matrix of 2020 technical feasibility versus 2020 implementation feasibility for all 56 technology applications. *Technical feasibility* is defined as the likelihood that the application will be possible on a commercial basis by 2020. *Implementation feasibility* is the net of all nontechnical barriers and enablers, such as market demand, cost, infrastructure, policies, and regulations. We based its assessment on rough qualitative estimates of the size of the market for the application in 2020 and whether or nor it raises significant public policy issues. The numbers in parentheses are the number of sectors that the technology can affect, and the designation *global* (G) or *moderated* (M) indicates our estimate, based on both the technical foresights and our discussions with RAND regional experts, of whether the application will be diffused globally in 2020 or will be moderated in its diffusion (i.e., restricted by market, business sector, country, or region).

11-L-0559/OSD/58123

11-L-0669/OSD/68124

Table 1
Technical and Implementation Feasibility of Illustrative 2020 Technology Applications

Technical Feasibility	Implementation Feasibility: Niche market only (– –)	May satisfy a need for a medium or large market, but raises significant public policy issues (–)	Satisfies a well-documented need for a medium market and raises no significant public policy issues (+)	Satisfies a well-documented need for a large market and raises no significant public policy issues (++)
Highly feasible (++)	• Chemical, biological, radiological, or nuclear (CBRN) sensors on emergency response teams (2,G)	• Genetic screening (2,G) • GM crops (8,M) • Pervasive sensors (4,G)	• Targeted drug delivery (5,M) • Ubiquitous autonomous access (6,M) • Ubiquitous RFID tagging (4,G)	• Hybrid vehicles (2,G) • Internet (for purposes of comparison) (7,G) • Rapid bioassays (4,G) • Rural wireless communications (7,G)
Feasible (+)	• GM animals for R&D (2,M) • [illegible]	• Implants for tracking and identification (3,M) • Xenotransplantation (1,M)	• Cheap solar energy (10,M) • Drug development from screening (2,M) • Filters and catalysts (7,M) • Green nanomanufacturing (6,M) • Monitoring and control for disease management (9,M) • Smart systems (1,M) • Tissue engineering (4,M)	• Improved diagnostic and surgical methods (2,G) • Quantum cryptography (2,G)
Uncertain (U)	• Commercial unmanned aerial vehicles (8,M) • High-tech terrorism (8,M) • Military nanotechnologies (2,G) • Military robotics (2,G)	• Biometrics as sole identification (3,M) • CBRN sensor network in cities (4,M) • Gene therapy (2,G) • GM insects (5,M) • Hospital robotics (2,M) • Secure video monitoring (3,M) • Therapies based on stem cell R&D (5,M)	• Enhanced medical recovery (3,M) • Immunotherapy (2,M) • Improved treatments from data analysis (2,M) • Smart textiles (4,M) • Wearable computers (5,M)	• Electronic transactions (2,G) • Hands-free computer interface (2,G) • "In-silico" drug R&D (2,G) • Resistant textiles (2,G) • Secure data transfer (2,M)
Unlikely (–)	• Memory enhancing drugs (3,M) • Robotic scientist (1,M) • "Super soldiers" (2,M)	• Chip implants for brain (4,M)	• Drugs tailored to genetics (2,M)	• Cheap autonomous housing (6,G) • Print-to-order books (2,G)
Highly unlikely (– –)	• Proxy-bot (3,M) • Quantum computers (3,M)	• Genetic selection of offspring (2,M)	• Artificial muscles and tissue (2,M)	• Hydrogen vehicles (2,G)

Nations Will Continue to Vary in Their Capacity to Reap the Benefits of Technology Applications

Global diffusion of a technology application does not mean universal diffusion: Not every nation in the world will be able to implement, or even acquire, all technology applications by 2020. The level of direct S&T capacity may be markedly different from one country to another. Within different geographical regions, countries also have considerable differences that play into their ability. These differences may include variations in physical size, natural conditions (e.g., climate), and location (e.g., proximity to oceans and water). The size of the population and demographics (e.g., birthrate) may vary dramatically between countries in a single region. Countries may have very different types of government, economic systems, and levels of economic development.

The 29 countries we compared (Table 2) represent not only the world's major geographical regions but also the range of national differences within them. We selected many of these countries specifically as representative of groups of similar nations, trying nor to include in a single geographical area more than one country with similar characteristics. If several countries in a given region were very large, for example, we brought in one that would grossly represent all the large countries. If a number of other nations in the same region were small, we included a representative small country.

What Countries Will Be Able to *Acquire* Which Technology Applications by *2020*?

Seven of the 29 countries we compared will be *scientifically advanced* through 2020. They will almost certainly have the S&T capacity to acquire all 16 of the top technology applications by 2020. The United States and Canada in North America, Germany in Western Europe, and South Korea and Japan in Asia fall into this category. In Oceania, Australia takes its place on this list, as does Israel in the Middle East. These countries are in blue boxes in Figure 1.

Four of the 29 countries will be *scientifically proficient* through 2020. They will very likely have the necessary S&T capacity through 2020 to acquire 12 of the top 16 technology applications (see Figure 2). China and India in Asia, Poland in Eastern Europe and Russia represent this group. They are shown in green boxes in Figure 1.

Seven of the 29 countries will be *scientifically developing* through 2020. They will have sufficient S&T capacity through 2020 to acquire nine of the top 16 applications (see Figure 2).[2] From South America, Chile, Brazil, and Colombia fall into this group. Mexico in North

Table 2
Representative Countries Across Regions of the World Selected for Analysis

Asia	Oceania	North Africa and the Middle East	Europe	Africa	North America	Central and south America and the Caribbean
China	Australia	Egypt	Georgia	Cameroon	Canada	Brazil
India	Fiji	Iran	Germany	Chad	Mexico	Chile
Indonesia		Israel	Poland	Kenya	United States	Colombia
Japan		Jordan	Russia	South Africa		Dominican Republic
South Korea			Turkey			
Nepal						
Pakistan						

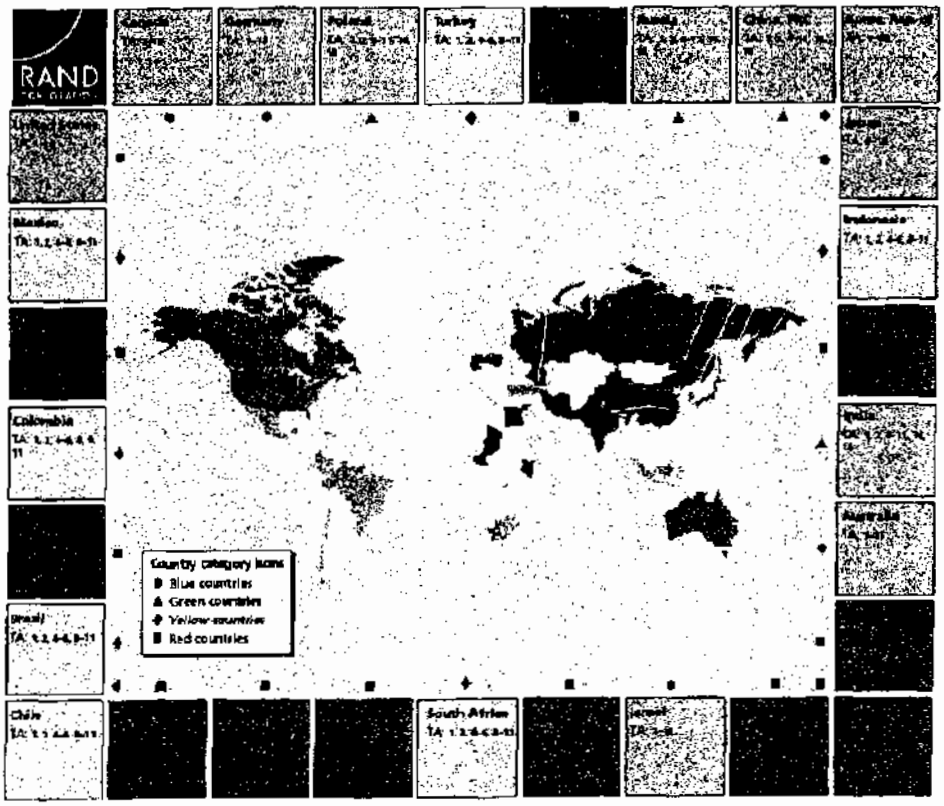
NOTE: We recognize that there are many ways to assign countries to regional groupings. In this instance, we placed Turkey in the European group because of the country's long and sustained commitment to join the European Union.

[2] Colombia will not be able to acquire ubiquitous RFID tagging because its economy is much less involved in international trade than the other countries in this group are, and its domestic and regional markets are unlikely to generate sufficient demand for this technology application.

America. Turkey in Europe, Indonesia in Asia, and South Africa in Africa are also included. These seven countries are shown in yellow boxes in Figure 1.

Eleven of the 29 countries will be *scientifically lagging* through 2020. They will have only enough S&T capacity to acquire five of the applications through 2020 (see Figure 2). Fiji in Oceania; the Dominican Republic in the Caribbean; Georgia in Europe; Nepal and Pakistan in Asia; Egypt, Iran, and Jordan in North Africa and the Middle East; and Kenya, Cameroon, and Chad in Africa are in this group. These countries are shown in red boxes in Figure 1.

Figure 1
Selected Countries' Capacity to *Acquire* the Top 16 Technology Applications

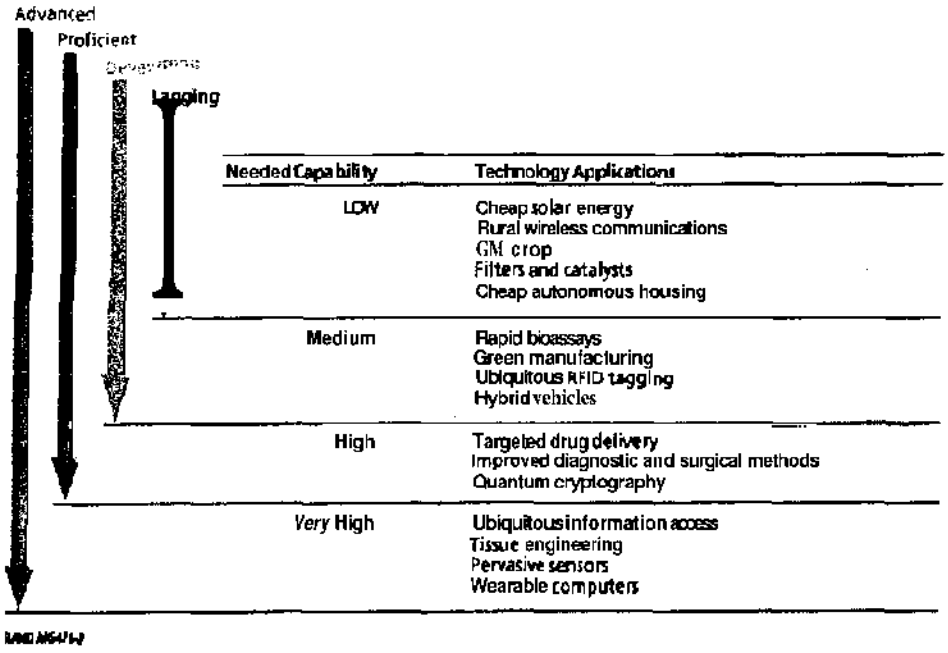


NOTE: Countries were selected as representative of groups of similar nations in a single geographical area. Countries are color coded by their S&T capacity: scientifically advanced (blue), scientifically proficient (green), scientifically developing (yellow), and scientifically lagging (red). Technology application (TA) numbers are as follows: (1) cheap solar energy, (2) rural wireless communications, (3) ubiquitous information access, (4) GM crops, (5) rapid bioassays, (6) filters and catalysts, (7) targeted drug delivery, (8) cheap autonomous housing, (9) green manufacturing, (10) ubiquitous RFID tagging, (11) hybrid vehicles, (12) pervasive sensors, (13) tissue engineering, (14) improved diagnostic and surgical methods, (15) wearable computers, (16) quantum cryptography.

RAND MG875-1

11-L-0559/OSD/58126

Figure 2
Mapping of Country Scientific Capability Rating to Top 16 Technology Applications



By 2020, one should be able to see several trends in the capacity of countries to acquire technology applications (see Figure 1). Most of North America and Western Europe, along with Australia and the developed economies of East Asia, will be scientifically advanced. Most of Asia and Eastern Europe will be scientifically proficient. Latin America and much of Southeast Asia are likely to be scientifically developing. The majority of Africa and the Middle East, as well as the Caribbean and the Pacific Islands, will be scientifically lagging.

What Drivers and Barriers Affect These Countries' Ability to *Implement* the Technology Applications They Could Acquire?

The S&T capacity that enables a country to acquire a technology application is only one of several factors determining whether that country will be able to implement it. The *drivers* facilitating innovation and the barriers hindering it also have a decisive influence on the ability to *implement* technology applications (i.e., to put the applications in place and get significant gains from them across the country). These assessments involve such things as whom an application will benefit and whether a country can sustain its use over time. Drivers and barriers involve the same dimensions: A dimension that is a driver in one context may be a barrier in another. For example, financing, when available, would be a driver, but financing, when

11-L-0559/OSD/58127

lacking, is a barrier. A high level of literacy among a nation's citizens would be a driver, but if literacy were low, it would form a barrier. And in certain cases, a dimension that is a barrier can simultaneously be a driver when only partial progress in that dimension has been made or when conflicting issues in the dimension are present. For example, education in the United States is a driver, but there are also concerns about problems in math and science education in the United States. Also, environmental concerns may dampen some S&T applications in China while promoting environmentally friendly applications, such as green manufacturing and hybrid vehicles.

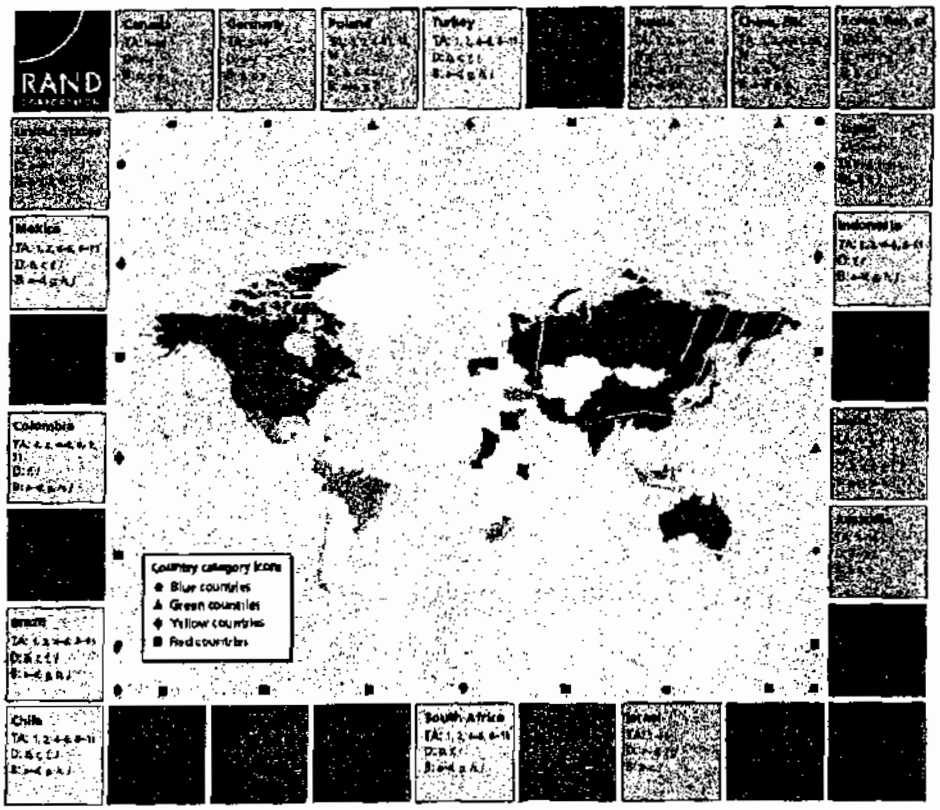
These are the major drivers and barriers that countries may face through 2020 (see Figure 3):[3]

- *Cost and financing*: The cost of acquiring the technology application and of building the physical infrastructure and human capital to introduce and sustain its use, the mechanisms and resources available to access the needed funds, and the costs of those funds.
- *Laws and policies*: Legislation and policies that either promote, discourage, or prohibit the use of a particular technology application.
- *Social values, public opinion, and politics*: Religious beliefs, cultural customs, and social mores that affect how a technology application is perceived within a society; compatibility of a new application with dominant public opinions; and the politics and economics underlying debates about an application.
- *Infrastructure*: Physical infrastructure at a consistent threshold of quality that can be maintained, upgraded, and expanded over time.
- *Privacy concerns*: Social values toward privacy in a country and personal preferences about the availability and use of personal data that arise from an individual's ideological inclinations and experience with the privacy issue.
- *Use of resources and environmental health*: Availability and accessibility of natural resources, concerns about pollution and its impact on humans, and social attitudes and politics about conservation and preserving land and wildlife.
- *R&D investment*: Funding to educate and train scientists, engineers, and technicians; build research laboratories, computer networks, and other facilities; conduct scientific research and develop new technologies; transfer technologies to commercial applications; and enter technology applications into the marketplace.
- *Education and literacy*: Levels of general education and literacy adequate to make a population comfortable with technology and able to interface with it, and the availability of sufficiently high-quality postsecondary education and training in the sciences to stock a workforce comfortable with developing, using, and maintaining technology applications.
- *Population and demographics*: Overall size, average age, and growth rate of the population and the relative size of different age groups within a population.

[3] For a detailed discussion of the country driver and barrier assignments in Figure 3, see Silberglitt, Anton, Howell, and Wong (2006).

11-L-0339/OSD/38129

Figure 3
Drivers (D) and Barriers (B) in Selected Countries



NOTE: Countries were selected as representative of groups of similar nations in a single geographical area. Countries are color coded by their S&T capacity: scientifically advanced (blue), scientifically proficient (green), scientifically developing (yellow), and scientifically lagging (red). Drivers (D) and barriers (B) are as follows: (a) cost and financing, (b) laws and policies, (c) social values, public opinion, and politics, (d) infrastructure, (e) privacy concerns, (f) use of resources and environmental health, (g) R&D investment, (h) education and literacy, (i) population and demographics, (j) governance and political stability. Technology application (TA) numbers are the same as in Figure 1: (1) cheap solar energy, (2) rural wireless communications, (3) ubiquitous information access, (4) GM crops, (5) rapid bioassays, (6) filters and catalysts, (7) targeted drug delivery, (8) cheap autonomous housing, (9) green manufacturing, (10) ubiquitous RFID tagging, (11) hybrid vehicles, (12) pervasive sensors, (13) tissue engineering, (14) improved diagnostic and surgical methods, (15) wearable computers, (16) quantum cryptography.

- *Governance and political stability*: Degree of effectiveness or corruption within all levels of government; the influence of governance and stability on the business environment and economic performance; and the level of internal strife and violence, as well as external aggression; number and type of security threats.

Figure 4 illustrates the overall capacity of the 29 nations in our sample to implement all the technology applications they will be able to acquire.[4] Of the seven scientifically advanced countries able to obtain all 16 applications, the United States and Canada in North America and Germany in Western Europe will also be fully capable of implementing them through 2020. Japan and South Korea in Asia, Australia in Oceania, and Israel in the Middle East will be highly capable of implementing all 16 as well. All these countries will have excellent S&T capacity, along with the highest number of drivers and lowest number of barriers.

China will fall somewhat below these top seven countries; however, it will lead the group of scientifically proficient nations able to obtain 12 applications, with a high level of S&T capacity and many drivers. Still, because it will also possess numerous barriers, China will have to deal with more challenges to implementation than the group of scientifically advanced nations will. India, Poland, and Russia—the other three scientifically proficient countries—will be somewhat less capable than China of implementing the applications they can acquire. In these countries, although the S&T capacity will be high, the number of barriers will slightly exceed the number of drivers, making it more difficult to introduce and sustain the full range of possible technology applications.

All the countries in the scientifically developing group of nations—those able to acquire nine of 16 top applications—will have even less capacity than the proficient group will to implement them beyond laboratory research, demonstrations, or limited diffusion. Brazil and Chile in South America, Mexico in North America, and Turkey in Europe will be the most capable, followed by South Africa, then Indonesia, and finally Colombia. None of these seven countries will have a high level of S&T capacity. And each will have significantly more barriers than drivers.

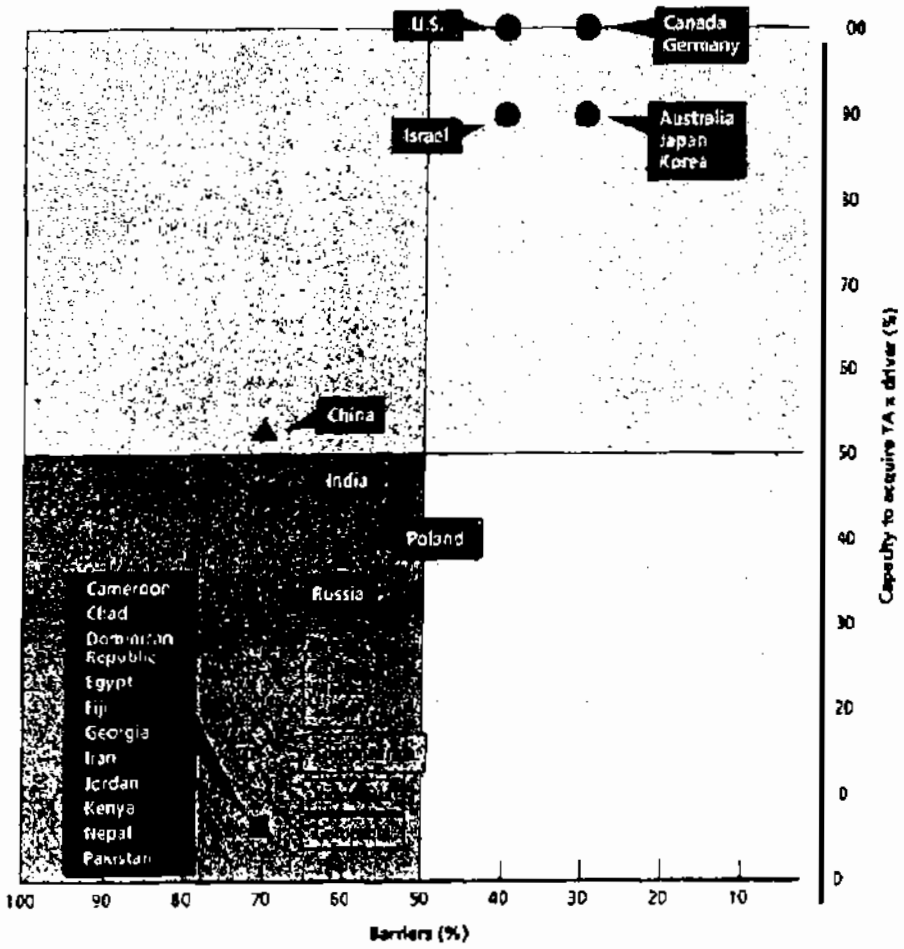
The nations in the scientifically lagging group are able to obtain only five of the top 16 applications. Cameroon, Chad, and Kenya in Africa; the Dominican Republic in the Caribbean; Georgia in Europe; Fiji in Oceania; Egypt, Iran, and Jordan in North Africa and the Middle East; and Nepal and Pakistan in Asia will be the least capable of implementing these applications through 2020. With low levels of S&T capacity, these countries will also face numerous barriers and will benefit from very few drivers. It will therefore be very difficult for these countries to implement any but the simplest technology applications (see Figure 2).

---

[4] We analyzed country capacity to implement technology applications by taking into account three factors: (1) capacity to acquire, defined as the fraction of the top 16 technology applications listed for that country in Figure 1; (2) the fraction of the ten drivers for implementation applicable to that country; and (3) the fraction of the ten barriers to implementation applicable to that country. Figure 4 shows the position of each of the 29 representative countries on a plot for which the y-axis is the product of factors (1) and (2)—i.e., capacity to acquire scaled by the fraction of drivers—and the x-axis is factor (3). (Multiplying capacity to acquire by the fraction of drivers is consistent with the view that the absence of drivers reduces the probability that *the* technology applications a country can acquire will be implemented.) Both axes are shown as percentages: The y-axis starts at 0 percent (i.e., no capacity to acquire technology applications or drivers) and ends at 100 percent (i.e., capacity to acquire all 16 technology applications, with all 10 drivers applicable). The x-axis starts at 100 percent (i.e., all 10 barriers are applicable) and ends at 0 percent (i.e., no barriers are applicable). This figure provides a first-order assessment of the capacity to implement technology applications, in that we applied equal weighting to all technology applications, drivers, and barriers. We recognize *that specific technology applications, drivers, and* barriers might be more or less significant in particular countries.

11-L-0559/OSD/58130

Figure 4
Selected Countries, Capacity to *Implement* the Top 16 Technology Applications



NOTE: The blue quadrant indicates a high level of S&T capacity plus many driven and few barriers; the green quadrant indicates a high level of S&T capacity with many drivers and many barriers; the yellow quadrant indicates the lack of a high level of S&T capacity plus few drivers and few barriers; the red quadrant indicates the lack of a high level of S&T capacity with more barriers than driven.

None of the countries in our sample, regardless of their level of S&T capacity, will have low numbers of both drivers and barriers through 2020. This reflects the fact that nations cannot reduce barriers without simultaneously developing drivers and S&T resources.

The overall capacity of these representative nations to implement the technology applications they can acquire suggests the following trends:

- The technological preeminence of the scientifically advanced countries in North America, Western Europe, and Asia
- The emergence of China and India as rising technological powers, with the scientifically proficient countries of Eastern Europe, as represented by Poland, not far behind
- The relative slippage of Russia as a technological powerhouse
- The wide variation in technological capability among the scientifically developing countries of Southeast Asia and Latin America
- The large scientific and technological gap between the scientifically developing countries of Latin America, as well as Turkey and South Africa, and the rising technological powers, China and India
- The enormous scientific and technological gap between the scientifically lagging countries of Africa, the Middle East, and Oceania and the scientifically advanced nations of North America, Western Europe, and Asia
- The significant gap that must be filled before the scientifically lagging nations can even reach the level of proficiency.

Different Countries, Different Issues: The Capacity of Various Nations to Use Technology Applications to Address National Problems

The overall capacity of countries to implement the technology applications they can acquire provides a good general indication of the variation in how technology might change the world through 2020. It offers a comparative perspective on which countries are likely to be able to actually put technological opportunities into practice, which will be the technological powerhouses, which will be the emerging powers, and which will still be saddled with too many obstacles to benefit from the innovations of the next 15 years. It also suggests how much progress, in general, some countries need to make to exploit the technology revolution.

But just because a country has the capacity to implement a certain technology application does not mean that it will want or need to. With distinct sets of problems and diverse profiles, different countries will continue to have different national priorities through 2020. Because technology applications are designed to perform specific functions, they pertain only to certain problems. Consequently, not all 16 applications will be equally relevant for all countries. A country will be unlikely to invest in developing and implementing applications that will not help it achieve its most important goals.

The 16 top technology applications in our study can all help achieve at least several of the following objectives. In theory, all these goals will be important items on national agendas over the next 15 years:

- Promote rural economic development.
- Promote economic growth and international commerce.
- Improve public health.
- Improve individual health.

- Reduce the use of resources and improve environmental health.
- Strengthen the military and warfighters of the future.
- Strengthen homeland security and public safety.

Yet in practical terms, a country will give *each* of these objectives different priorities, depending on its state of economic and social development, internal politics, and domestic public opinion. Some countries may not even be in a position to pursue some of these goals because they have not yet achieved other, more fundamental, building blocks on which the goals rest. For example, promoting basic rural economic development may be a first step before pursuing international commerce.

Generally, a country's level of S&T capacity links up with indicators of economic and social development. By and large, countries with less S&T capacity also rank lower in the other *two* areas, while countries with more S&T capacity rank higher.[5] Consequently, nations with different levels of S&T capacity often share similar problems and, as a result, tend to prioritize similar objectives. Promoting rural economic development, improving public health, and reducing the use of resources and improving environmental health—all basic development goals—are usually top concerns for countries on the lowest rungs of the development ladder. More-developed countries may also give these goals prominence on their national agendas but often for different reasons and with less urgency. For example, scientifically developing countries are likely to be motivated to implement technology applications that can help them use resources more efficiently and clean up pollution mainly for the possible economic benefits, with environmental gains a secondary goal or spillover effect. As long as their economies are sluggish and living standards low, countries on this rung of the development ladder will not be in a position to pay up front for the long-term health gains of prioritizing environmental issues. Yet in countries whose economies are *stronger* and whose citizens can better afford (literally) to be concerned about the environment, public demand for cleaner, healthier surroundings and responsible stewardship of natural resources can drive the use of these applications.

Why Countries Prioritize Economic Growth

Economic growth and *international commerce* push nations up the development ladder. Consequently, promoting them becomes an increasingly important goal as countries build infrastructures, better educate their populations, and enter the global marketplace. For scientifically proficient countries, and even certain scientifically developing ones, driving economic growth can become a firm-order concern. For scientifically advanced nations, this goal also usually takes top priority but for different reasons. The global marketplace is changeable and demanding, with new powers emerging and established ones continually vying for a competitive edge. To sustain current levels of prosperity and power, nations *at* the top of the develop-

[5] Compare the S&T capacity index in Appendix H of our in-depth analysis report (Silberglitt, Antón, Howell, and Wong, 2006) with the per capita gross domestic product and the Human Development Index rankings in Appendix J of the same document.

11-L-0559/OSD/58133

ment ladder must continually seek to push beyond what they already have. In this way, they can retain an advantage in the world of commerce and continue to improve the quality of life of their populations.

Countries at Various Levels of Development Prioritize Strengthening the Military

Strengthening a nation's military and warfighters does not necessarily or clearly correspond to a particular position on the development ladder. Certain countries sorely lacking in the most basic living standards have been observed to funnel the majority of their national budget into military spending, given certain circumstances. The same is true for strengthening homeland security and public safety. But in general, nations lower on the development ladder are not in a position to prioritize these two concerns. Meeting the essential needs of their populations—economic growth, health, nutrition, education, infrastructure—is their most urgent objective. Scientifically proficient and advanced countries with more power and more money can better afford to make these goals high priorities.

Individual Health as a National Priority Generally Follows Public Health

Improving individual health is by necessity a secondary goal for some nations. A country can usually only make this objective a matter of real national concern if its public health system is already functioning well and its population enjoys a high standard of living. For this reason, it is typically only a first-order goal in scientifically advanced countries. Technology applications that could help reduce infant mortality rates and increase the average life expectancy—both measures of good public health—are much more important for countries lower on the development ladder.

Countries' Capacity to Achieve Science and Technology Goals

Because national concerns tend to differ in these ways between countries with various levels of S&T capacity, particular sets of technology applications will be much more important, and their impacts much more dramatic, for certain nations than for others. But if a country were to establish a certain goal as a top priority in 2020 and resolve to address it, how capable would it be of actually implementing the applications that would enable it to do so? We looked at the scientifically lagging, developing, proficient, and advanced nations in our sample and for each one answered that question for the objectives likely to be relevant to countries at its level of S&T capacity.

Scientifically Lagging Countries

Countries in the scientifically lagging group tend to be at the bottom of the development ladder. Promoting rural economic development, improving public health, and reducing the use of resources and improving environmental health commonly rank highest on national agendas. The populations of many of the countries in our sample lack access to clean water and basic sanitation. Extreme poverty in rural areas can spur massive urban migration and discontent. Disease is often widespread. Essential resources, such as water and arable land, are frequently misused and rapidly dwindling. In many of these countries, the pervasive use of wood and coal-burning stoves is a major problem, generating indoor air pollution that has severe costs for the health of women and children in particular. The need for clean, cheap energy sources is urgent. With rapidly growing populations, low levels of literacy, and great disparities in wealth and power, these countries also frequently need to promote economic growth and international commerce. Stronger national economies would create jobs and generally improve the standard of living. But because very few countries at this level of S&T capacity are active participants in the global economy and because barriers are so abundant, this goal often takes a backseat to more basic development objectives.

All five of the technology applications these countries have the capacity to acquire—cheap solar energy, rural wireless communications, GM crops, filters and catalysts, and cheap autonomous housing—could help them both promote economic development in rural areas and improve public health. Solar energy would provide power for pumping water and irrigating crops, significantly improving agriculture and offering alternatives to subsistence farming (e.g., industrial cooperatives). It would also provide the power to run the filters that purify water supplies and the appliances to store medications. Better and more accessible water, food, and medicine would in turn improve public health. Providing lighting for homes and buildings and power for computers, solar energy could enable rural populations to participate in cottage industries and educate their children, growing the rural economy. Wireless communications would open the floodgate to economic development in remote areas, facilitating both commerce and education. Access to medical information and records would also significantly improve public health. GM crops would make food both more available and more nutritional, reducing the malnutrition and infant mortality that are so pervasive in these countries. Filters and catalysts would enable local populations to make unfit water sources usable and to clean wastewater for reuse. Cheap self-sufficient housing would provide rural populations with basic energy and shelter at minimal cost.

All five applications could also help these countries use fewer resources and improve environmental health. Cheap solar energy would provide energy without fuel combustion, reducing environmental emissions. Solar energy and cheap autonomous housing might help reduce the indoor air pollution generated by wood-and coal-burning stoves. Less reliance on firewood would promote healthy forests that would help control soil erosion; improve the quality of underground water; reduce sediment flows into rivers; and supply food, medicine, and construction materials. Rural wireless communications could help local and national governments monitor resources, environmental conditions, and pollution. GM crops would help conserve the natural resources used for agriculture and eliminate or reduce the magnitude of sources of pollution. Filters and catalysts would help conserve water and reduce waste streams.

Of the numerous technology applications that can promote economic growth in general, scientifically lagging nations will be able to acquire only two: cheap solar energy and rural wireless communications. Their benefits in this context lie mainly in helping to build more vital and productive rural economies that will be better able to contribute to their national economy and boost their global competitiveness.

If implemented broadly and sustainably, these technology applications have the potential to dramatically improve the quality of life of the vast majority of people living in poverty in these countries. But in practical terms, the nations in the scientifically lagging group will face considerable challenges in implementing any of the five despite the fact that they place the least demand on S&T capacity. Drivers are scarce and barriers abundant in these countries. Unless the barriers are addressed, the lack of financial resources; institutional, physical, and human capacity; open markets; and transparent and stable governments will make it very difficult for the countries that could most benefit from these applications to put them to use.

Scientifically Developing Countries

Nations in the scientifically developing group commonly face many of the same problems as those in the scientifically lagging group. For example, in most of these countries, a significant percentage of the population is rural, with many people living at or below the poverty line. Outside the capital, infrastructure is typically poor. Provincial areas commonly lack cheap and stable electricity, a clean and dependable water supply, basic health services, good roads, and schools. As a result, urban populations in many of these nations are growing rapidly as people flock to the cities in hope of better economic opportunities. Consequently, promoting rural economic development is usually a top concern, to reduce rural poverty, soothe discontent, and slow urban migration.

Improving public health is often another leading goal. Because people in many of these countries frequently lack clean water and good sanitation, waterborne diseases are common and generally spread easily. The largely rural populations usually have little access to health care. In nations where cities are growing and people are traveling more frequently both domestically and abroad, the threat of epidemics can increase. In South Africa, for example, AIDS is taking a tremendous toll. Resources can present another major problem. In many nations at this level of S&T capacity, economic activities are further depleting already scarce natural resources and spoiling the environment. At the same time, energy prices are rising. For these reasons, it is imperative for many of them to use their resources more efficiently and improve the health of the environment.

Many of the countries with this level of S&T capacity frequently put promoting economic growth and international commerce higher on national agendas than scientifically lagging countries typically do (but still usually much lower than nations in the proficient and advanced groups). Most of them very much need to manage urban migration, create jobs, and expand the middle class. For countries that are to some degree actively exporting products to the global marketplace (e.g., Chile and Mexico), increasing economic competitiveness is a realistic development goal. Colombia is a clear exception in this regard; its economy is much less involved in international trade than most other nations in this group. The heightened politi-

11-L-0559/OSD/58136

cal instability in some of the countries at this level could lead them to give increased prominence to strengthening homeland security and public safety. For example, in Colombia and Indonesia, political coups and military insurgencies are an ongoing threat.

Cheap solar energy, rural wireless communications, GM crops, filters and catalysts, and cheap autonomous housing could help scientifically developing nations promote economic development in rural areas, for the same reasons as in the *scientifically lagging* countries. These five, plus two others—rapid bioassays *and* green manufacturing–could help improve public health as well. The ability to use bioassays to quickly screen for diseases would enable governments to prevent epidemics. It would also increase the probability of correctly prescribing medications, decreasing resistance to antibiotics and other drugs. Reducing the volume of toxic materials in the environment produced by conventional manufacturing processes would improve public health.

Cheap solar energy, rural wireless communications, GM crops, filters and catalysts, green manufacturing, and hybrid vehicles could enable nations in this group to reduce the use of resources and improve environmental health. Again, the benefits would be the same as for the scientifically lagging countries. In addition, green manufacturing would diminish waste streams, allowing energy, water, and land to be used more *efficiently*; cut down pollutants in the environment; and reduce the burden on local governments of cleaning up *polluted* areas. Hybrid vehicles would significantly improve air quality, particularly in smog-ridden urban areas in these countries, where emissions are not tightly controlled. This problem is in part a result of urban migration. By addressing it, these countries would make it more appealing to move to the cities, which would allow the resulting economic growth without the negative environmental impact.

As in the lagging countries, cheap solar energy and rural wireless communications could help *scientifically* developing nations promote economic growth and international commerce. Rapid bioassays and ubiquitous RFID tagging, which nations at this level of S&T capacity *can* acquire as well, could be equally useful. Rapid bioassays would provide a means of ensuring that people can move safely across borders to conduct business, because it would allow governments to detect unintended transport of infectious disease more effectively. RFID tagging could enhance performance of retail industries, enabling greater control of inventories throughout the supply chain and making marketing more efficient.

Finally, for any country in this group that resolves to strengthen homeland security and public safety, rural wireless communications, rapid bioassays, filters and catalysts, and cheap autonomous housing could all help toward this end. Rural wireless communications would allow law enforcement and emergency response personnel to collect information from remote locations to prevent or respond to terror attacks, internal insurgencies, and disasters. Personnel on the scene would also be able to rapidly transfer information about the incident and response to local authorities. Rapid bioassays could help experts determine types of infections resulting from attacks, along with appropriate response measures. Filters and catalysts would provide potable water when water supplies are not safe. Cheap autonomous housing could provide temporary living quarters for relief workers and people made homeless by an incident.

Scientifically developing countries will vary significantly in their capacity to put *technology* applications into practice through 2020. Brazil, Chile, Mexico, and Turkey will be most

11-L-0559/OSD/58137

capable of implementing relevant sets of applications (sometimes even on par with Russia in the proficient group). But compared with most of the proficient and advanced countries, their level of capacity will still be very low. South Africa will have even less capacity, and Colombia and Indonesia will have little more than that of the scientifically lagging countries. Overall, nations in this group will be most able to implement the applications that would spur the development of rural economies and reduce the use of resources. They will be somewhat less able to implement applications that could serve to improve public health. South Africa, Colombia, and Indonesia in particular may be severely impaired by the plethora of barriers they face. In terms of promoting economic growth, all the countries in this group will face considerable implementation challenges, and their capacity will be extremely low. These countries may develop more capacity if current positive economic and development trends continue, but without quality infrastructure beyond metropolitan areas, the use of relevant applications may be significantly limited. Finally, nations that aspire to strengthen homeland security will also have very limited capacity to implement the applications that can help in this area.

Scientifically Proficient Countries

Nations in the scientifically proficient group face a dynamic mix of problems. Promoting economic development and international commerce is often a top priority for countries with this level of S&T capacity but for very diverse reasons. The populations of China and India, for example, are quite large and continually growing. These countries urgently need to feed their many people, create jobs, and sustain wide-scale economic development. Yet while Poland and Russia have much smaller populations, economic growth is no less a concern. In the decade following the dissolution of the Soviet Union, Russia has encountered considerable economic difficulties. Although its population is shrinking in real terms, unemployment is high. The exodus of Russian scientists, engineers, and other professionals beginning in the 1990s has weakened the country's institutional and human capacity in science, health, and administration. Poland, as a relatively recent member of the European Union, is in a very different situation: It needs to bring its economy in line with EU standards.

In China and India, a significant fraction of the population is rural and impoverished. The rural economy is not much different from that of scientifically lagging and developing countries: Rapid economic growth is largely confined to urban areas, and rural and urban populations have great disparities in income, as well as health and education. In China in particular, the income gap is widening. Consequently, for both these nations, promoting rural economic development to reduce rural poverty is a much more pressing concern than it is for countries like Poland and Russia—although they still retain a national focus on promoting overall economic growth.

In many scientifically proficient countries, reducing the use of resources and improving environmental health is also among the most important objectives. Valuable assets such as arable land and fresh water—already scarce—are lost every day to land degradation, industrial pollution, and urban growth. In addition, many of these countries are at a level of development at which their populations are becoming increasingly aware of the high economic and health costs of environmental destruction and pollution.

11-L-0559/OSD/58138

For countries in the proficient group that lack clean water, electricity, and good sanitation in certain areas, improving public health is still a first-order concern. Countries at this level can suffer from the same public health issues as countries lower on the development ladder. Contagious diseases can spread easily, making epidemics a significant threat. Infant mortality rates can exceed international standards, and life expectancies can be lower than desirable. Yet at the same time, many countries with this level of S&T capacity are approaching the point on the development ladder where they can begin to aspire to improve individual health as well.

Strengthening the military and warfighters of the future is often a prominent concern for countries in the scientifically proficient group. For example, as a new EU member, Poland needs to modernize its military for greater compatibility with its new security partners. Russia wants to preserve its former status as a world military power. Strengthening homeland security and public safety can also be a relatively high priority. Russia, for instance, faces considerable internal security problems, such as organized crime and armed opposition in Chechnya.

As in the scientifically lagging and developing countries, cheap solar energy, rural wireless communications, rapid bioassays, and ubiquitous RFID tagging could promote economic growth and international commerce in the scientifically proficient countries. In addition, these countries will be able to acquire quantum cryptography, which, in providing a means of transferring information in a secure, reliable manner, could further aid economic development. This application would offer attractive benefits to banking and finance organizations, for example. Just as in the lagging and developing countries, cheap solar energy, rural wireless communications, GM crops, filters and catalysts, and cheap autonomous housing could enable those scientifically proficient nations that make it a priority to do so to promote rural economic development.

In terms of improving public health, the same applications that the developing countries have the S&T capacity to acquire toward this end—cheap solar energy, rural wireless communications, GM crops, filters and catalysts, cheap autonomous housing, rapid bioassays, and green manufacturing — could help the proficient nations as well. In addition, these countries have the S&T capacity to acquire targeted drug delivery, which is likely to eventually become such a widespread application that it will enable cancers and other diseases to be treated on site in remote areas, with significant benefits to public health. Similarly, they will be able to acquire the same applications as the developing countries to reduce the use of resources and improve environmental health: cheap solar energy, rural wireless communications, GM crops, filters and catalysts, green manufacturing, and hybrid vehicles.

The benefits to public health from cheap solar energy, rural wireless communications, GM crops, rapid bioassays, filters and catalysts, cheap autonomous housing, and green manufacturing would also better the health of individuals. In addition, targeted drug delivery, by limiting damage to healthy cells and tissues when administering therapies, would enable less-invasive, debilitating treatments and better outcomes. Improved diagnostic and surgical methods would make diagnoses more precise and surgical procedures more effective, and reduced recovery times would give a wider group of patients the option of surgery.

Rural wireless communications, rapid bioassays, filters and catalysts, cheap autonomous housing, ubiquitous RFID tagging, and quantum cryptography would help these proficient nations strengthen their military and warfighters. Military command, control, and commu-

11-L-0559/OSD/58139

nication could be improved with rural wireless communications. Rapid bioassays would allow military medical personnel to identify weapon-grade pathogens in the environment. Filters and catalysts could be employed in situations involving chemical or biological contaminants. Cheap autonomous housing could provide personnel on the ground with improved living quarters. RFID tagging would enable command centers to track the location and conditions of personnel engaged in operations. Quantum cryptography could safeguard tactical communications.

These technology applications could also enhance homeland security and public safety. The benefits would be the same as for the scientifically developing countries. Quantum cryptography could protect critical data and networks from hackers and attackers. In addition, targeted drug delivery, also obtainable by the proficient nations, could expedite responses to chemical and biological attacks and minimize casualties.

In terms of capacity to implement, China consistently has the most, followed by India, and then Poland. In every case, Russia trails, with the least capacity in the group to implement the relevant applications for any of the problem areas. As a whole, these countries have a fairly high capacity to put applications into practice to promote rural economic development and to reduce the use of resources and improve environmental health. Their ability to improve public health will be only slightly less than that. In the first two cases, China approaches the capacity level of several of the scientifically advanced countries, with India not far behind. Russia, in contrast, has no more capacity than the most capable of the scientifically developing nations. The scientifically proficient countries will be moderately capable of implementing the applications that would improve individual health. Implementation capacity will still be substantial but somewhat less for strengthening the military and warfighters and increasing homeland security and public safety. As much as these countries may need to achieve this goal, promoting economic growth and international commerce will be the most challenging of all. The capacity of the proficient countries to implement the relevant applications toward this end will be less than for all the other goals. There will be a very large gap, for example, between their ability to use technology applications to develop their international economy and that to improve public health or reduce the use of resources.

Scientifically Advanced Countries

Nations with the highest level of S&T capacity sit atop the development ladder. Their leading concerns are usually quite different from those of countries with less capacity because they have already achieved the more basic development objectives prerequisite to focusing on those goals. When a national priority is the same, a scientifically advanced country often has very different motivations from those of a lagging or developing one. Promoting economic growth and international commerce is a case in point. The nations in this group are already world economic leaders; their problem is usually to maintain or capture even more of a competitive advantage in an aggressive global market. South Korea, for example, has to deal with a China rapidly gaining S&T capacity and emerging as a commanding economic force. It also needs to gain ground on Japan, the United States, and other economic superpowers. Other advanced countries are contending with skyrocketing health costs. With rapidly aging populations, they need to increase the productivity of their future workforce to finance cutting-edge medical treatment.

Aging populations and a high standard of living also put improving individual health at the head of the national agenda in many scientifically advanced countries. Enhancing public health is often an objective, too, but usually a much less prominent one, given that these nations have already achieved very effective public health systems and will gain only marginal benefits. Exceptional circumstances, such as a need to provide emergency medical relief should a disaster strike, usually drive this goal.

Energy can be very costly in some countries in this group. At the same time, public awareness of the negative impacts of pollution and inefficient management of resources is often high. Consequently, citizens in nations at this level of S&T capacity frequently demand cleaner environments and more responsible consumption of natural assets. This can make reducing the use of resources and improving environmental health an important national objective.

Strengthening homeland security and public safety is a principal concern for some nations at this level of S&T capacity. While some nations have had terrorism prevention on their national agendas for a long time, this issue has become more prominent as a number of advanced countries have had recent experiences with terrorism—the United States with the attacks of September 11, 2001, and Spain and the United Kingdom with train bombings, for instance. Public demand in such countries to reduce internal security threats can run very high. Making the military and warfighters of the future stronger is often among their foremost concerns as well, for varying reasons. Both Israel and South Korea face potential threats from hostile neighboring countries; the United States seeks to maintain its global military predominance.

Just as for countries with less S&T capacity that can acquire these applications, cheap solar energy, rural wireless communications, rapid bioassays, ubiquitous *RFID* tagging, and quantum cryptography could also help the scientifically advanced nations promote economic growth and international commerce. But these countries will be able to acquire more sophisticated applications as well—ubiquitous information access, pervasive sensors, tissue engineering, and wearable computers. Agile access to information could improve productivity, create new avenues for conducting business on the run, and expand global Internet commerce. Pervasive sensors could help manage logistics, determine market demand, and safeguard electronic transactions. Expertise in sensor development and data management would expand a company's commercial opportunities. The technical or medical expertise to engineer tissue, the capability to manufacture it, or any related intellectual property rights would have the same effect. Wearable computers would open exciting new doors for economic sectors based on computation.

To improve individual health, the scientifically advanced nations could acquire cheap solar energy, rural wireless communications, GM crops, rapid bioassays, filters and catalysts, targeted drug delivery, cheap autonomous housing, green manufacturing, tissue engineering, and improved diagnostic and surgical methods. In addition, ubiquitous information access would make health information available anywhere and anytime and facilitate information sharing between patients and providers. Tissue engineering would minimize medical complications and recurrences by providing new ways of treating wounds, disease, and injuries. It might also permit classes of chronically ill or formerly untreatable individuals to join the workforce. Wearable computers could enable patients or their doctors to continuously moni-

11-L-0559/OSD/58141

tor patients' health status. Along with the relevant applications obtainable by countries lower on the development ladder, ubiquitous information access would also contribute to improving public health at this level of S&T capacity.

All the applications that could help reduce the use of resources and improve environmental health would be available to the advanced nations: cheap solar energy, rural wireless communications, GM crops, filters and catalysts, green manufacturing, and hybrid vehicles. To strengthen homeland security and public safety, advanced countries will be able to acquire rnral wireless communications, rapid bioassays, filters and catalysts, targeted drng delivery, cheap autonomous housing, and quantum cryptography. In addition, ubiquitous access to information would facilitate information sharing and increase the ability to track individual's activities. Pervasive sensors would provide governments with a powerful tool for law enforcement. Together with miniaturized communications devices, wearable computers could enable personnel to send and receive instructions in conflict situations.

Rural wireless communications, rapid bioassays, filters and catalysts, cheap autonomous housing, ubiquitous RFID tagging, and quantum cryptography could all help strengthen the military and warfighters. Beyond these, ubiquitous information access could improve combat planning and execution, logistics, and support functions. Pervasive sensors could be implemented in tactical situations to provide updated intelligence and targeting. The increased ability to exchange instructions provided by wearable computers would be a significant advantage in military situations as well.

For any of the national objectives that they choose to prioritize, all the scientifically advanced countries will he highly capable of implementing the full set of relevant technology applications. With abundant drivers, relatively few barriers, and unrivaled S&T ability, these advanced countries are the only ones among our sample likely to be able to implement, on a broad scale, the applications that demand the highest level of infrastructure and institutional, physical, and human capacity.

The Science and Technology Path to 2020

As the global technology revolution proceeds over the next 15 years, it will follow a trajectory with certain defining characteristics.

Accelerated Technology Development Will Continue

We see no indication that the rapid pace of technology development will slow in the next decade and a half. Neither will the trends toward *multidisciplinarity* and the increasingly integrated nature of technology applications reverse. Indeed, most of the top 16 technology applications for 2020 draw from at least three of the areas addressed in this study-biotechnology, nanotechnology, materials technology, and information technology—and many involve all four. Underlying these trends are global communications (Internet connectivity, scientific conferences, and publications) and instrumentation advances (the development and cross-fertilization of ever more-sensitive and selective instrumentation).

11-L-0559/OSD/58142

Countries Will Benefit in Considerably Different Ways

Over the next 15 years, certain countries will possess vastly different S&T capacities. They will also vary considerably in the institutional, human, and physical capacity required to develop drivers for implementing technology applications and overcome barriers. Consequently, the global technology revolution will play out quite differently among nations.

The scientifically advanced countries of North America, Western Europe, and Asia, along with Australia, are likely to gain the most, as exemplified by their capacity to acquire and implement all the top 16 example technology applications. For whatever problems and issues that rank high on their national agendas, they will be able to put into practice a wide range of applications to help address them.

If they can address multiple barriers to implementation, emerging economies, such as China and India in Asia and Brazil and Chile in South America, will be able to use technology applications to support continued economic growth and human development for their populations. Emerging technological powers China and India will have the best opportunity to approach the ability of the scientifically advanced countries to use applications to achieve national goals. The scientifically proficient countries of Eastern Europe, as represented by Poland, appear to be poised next in line behind China and India. In contrast, it looks likely that Russia's capacity to implement technology applications will continue to deteriorate, with the most advanced of the scientifically developing countries (represented by Brazil, Chile, Mexico, and Turkey) potentially overtaking her.

The scientifically lagging countries around the world will face the most severe problems—disease, lack of clean water and sanitation, and environmental degradation. They will also likely lack the resources to address these problems. Consequently, they stand to gain the most from implementing the 2020 technology applications. However, to do so, these nations will need to make substantial inroads in building institutional, physical, and human capacity. The efforts and sponsorship of international aid agencies and other countries may assist in these efforts, but the countries themselves will have to improve governance and achieve greater stability before they will be able to benefit from available S&T innovations.

Action Will Be Required to Maintain a High level of S&T Capacity

The accelerating pace of technology development and the growing capacity of emerging economies to acquire and implement technology applications will make economic security a moving target even for the most advanced nations. If countries are to stay ahead in their capacity to implement applications, they will need to make continuing efforts to ensure that laws, public opinion, investment in R&D, and education and literacy are drivers for, and not barriers to, technology implementation. In addition, they will have to build and maintain whatever infrastructure is needed to implement the applications that will give them a competitive advantage.

Countries That Lack Capacity Will Need to Build It

For scientifically lagging and developing countries, implementing technology applications to address problems and issues will not be primarily about technology, or even S&T capacity. The greater challenge they will face is the lack of institutional, human, and physical capacity.

11-L-0559/OSD/58143

including effective and honest governance. Development results from improvements in economic growth, social equity, health and the environment, public safety and security, and good governance and stability. The countries with the best performance in these indicators of development will most likely have the greatest institutional, human, and physical capacity to implement technology applications. Less-developed countries that hope to benefit from technology applications will have to improve their performance in these development areas to build the requisite institutional, human, and physical capacity.

Certain Technology Applications Will Spark Heated Public Debate

Several of the top 16 technology applications will raise significant public policy issues that will trigger strong, and sometimes conflicting, reactions and opinions between countries, regions, and ethnic, religious, cultural, and other interest groups. Many of the most controversial applications will involve biotechnology (e.g., GM crops). Others, such as pervasive sensors and certain uses of RFID implants to track and identify people, will potentially have provocative implications for personal privacy and freedom. Yet any controversy that flares up will probably not be the same around the world. A technology application that raises extremely divisive questions in one country may cause no stir at all in another because of different social values.

Consideration Could Head Off Problems and Maximize Benefits

Public policy issues will need to be resolved before a country will be able to realize the full benefits of a technology application. Not all technology may be good or appropriate in every circumstance, and just because a country has the capacity to implement a technology application does not necessarily mean that it should. Ethical, safety, and public concerns will require careful analysis and consideration. Public policy issues will need to be debated in an environment that seeks to resolve conflicts. Such public debate, in addition to being based on sound data, will need to be inclusive and sensitive to the range of traditions, values, and cultures within a society. In some cases, issues will remain after the debate, slowing or even stopping technology implementation. Sometimes the reasons clearly will be good (e.g., when safety concerns cannot be adequately addressed), and sometimes the result will simply reflect collective decisionmaking determining what a particular society wants and does not want.

A Few Words in Conclusion

As the global technology revolution proceeds, market forces will moderate and vector its course, its technology applications, and their implementation. Predicting the net effect of these forces is predicting the future—wrought with all the difficulties of such predictions. But current technology trends have substantial momentum behind them and will certainly be the focus of continued R&D, consideration, and debate over the next 15 years. By 2020, countries will be applying many of these technologies in some guise or other and the effects will be significant, changing lives across the globe.

Selected Bibliography

For a more detailed discussion of the material described in this report, including further documentation and references, the reader is strongly encouraged to review our in-depth analyses in the following companion report:

Silberglitt, Richard, Philip S. Antón, David R. Howell, and Anny Wong, with Natalie Rose Gassman, Brian A. Jackson, Eric Landree, Shari Lawrence Pfleeger, Elaine M. Newton, and Felicia Wu, *The Global Technology Revolution 2020—In-Depth Analyses: Bio/Nano/Materials/Info Trends, Drivers, Barriers, and Social Implications*, Santa Monica, Calif.: RAND Corporation, TR-303-NIC, 2001. Online at http://www.rand.org/pubs/technical_reports/TR303/index.html.

Technology Foresight

Applewhite, Ashton, "The View from the Top: Forty Leading Lights Ponder Tech's Past and Consider Its Future," *IEEE Spectrum*, Vol. 41, No. 11, November 2004, pp. 36–51.

Christensen, Clayton M., *The Innovator's Dilemma*, New York: HarperCollins, 2003.

Glenn, Jerome C., and Theodore J. Gordon, *Future S&T Management Policy Issues: 2025 Global Scenarios*, Washingron, D.C.: Millennium Project, American Council for the United Nations University, undated. Online at http://www.acunu.org/millennium/scenarios/st-scenarios.html (as of March 2006).

———, "Millennium 3000 Scenarios," excerpt from *State of the Future at the Millennium*, Washington, D.C.: Millennium Project, American Council for the United Nations University, undated. Online at http://www.acunu.org/millennium/m3000-scenarios.html (as of March 2006).

———, *2004 State of the Future*, executive summary, Washington, D.C.: Millennium Project, American Council for the United Nations University, 2004.

National Intelligence Council, *Global Trends 2015: A Dialogue About the Future with Nongovernment Experts*, Central Intelligence Agency, NIC 2000-02, 2000. Online at http://www.cia.gov/cia/reports/globaltrends2015/ (as of March 2006).

———, *Mapping the Global Future: Report of the National Intelligence Council's 2020 Project*, Central Intelligence Agency, NIC 2004-13, 2004. Online at http://www.cia.gov/nic/NIC_globaltrend2020.html (as of March 2006).

Salo, Ahd, and Kerstin Cuhls, "Technology Foresight: Past and Future," *Journal of Forecasting*, Vol. 22, Nos. 2–3, March–April 2003, pp. 79–82.

11-L-0559/OSD/58145

Technology Trends and Applications

Anderson, Robert H., Philip S. Antón, Steven C. Bankes, Tora K. Bikson, Jonathan P. Caulkins, Peter J. Denning, James A. Dewar, Richard O. Hundley, and C. Richard Neu, *The Global Course of the Information Revolution: Technological Trends—Proceedings of an International Conference*, Santa Monica, Calif.: RAND Corporation, CF-157-NIC, 2000. Online at http://www.rand.org/pubs/conf_proceedings/CF157/index.html (as of March 2006).

Antón, Philip S., Richard Silberglitt, and James Schneider, *The Global Technology Revolution: Bio/Nano/Materials Trends and Their Synergies with Information Technology by 2015*, Santa Monica, Calif.: RAND Corporation, MR-1307-NIC, 2001. Online at http://www.rand.org/pubs/monograph_reports/MR1307/index.html (as of March 2006).

Cohen, Smadar, and Jonathan Leor, "Rebuilding Broken Hearts," *Scientific American*, Vol. 291, No. 5, November 2004, pp. 44–51. Online at http://www.sciam.com/article.cfm?articleID=0007428C-6DD4-1178-AD6883414B7F0000 (as of March 2005).

Hundley, Richard O., Robert H. Anderson, Tora K. Bikson, and C. Richard Neu, *The Global Course of the Information Revolution: Recurring Themes and Regional Variations*, Santa Monica, Calif.: RAND Corporation, MR-1680-NIC, 2003. Online at http://www.rand.org/pubs/monograph_reports/MR1680/index.html (as of March 2006).

International Roadmap Committee, "Emerging Research Devices," in *International Technology Roadmap for Semiconductors, 2003 Edition*, San Jose, Calif.: Semiconductor Industry Association, 2003. Online at http://public.itrs.net/Files/2003ITRS/Home2003.htm (as of March 2006).

———, *International Technology Roadmap for Semiconductors: 2004 Update*, San Jose, Calif.: Semiconductor Industry Association, 2004. Online at http://www.itrs.net/Common/2004Update/2004Update.htm (as of March 2006).

Langer, Robert, and David A. Tirrell, "Designing Materials for Biology and Medicine," *Nature*, Vol. 428, No. 6982, April 1, 2004, pp. 487–492.

National Nanotechnology Initiative, "What Is Nanotechnology?" Web page, undated, http://www.nano.gov/html/facts/whatIsNano.html (as of March 2006).

Royal Academy of Engineering, *Nanoscience and Nanotechnologies: Opportunities and Uncertainties*, London, 2004. Online at http://www.raeng.org.uk/policy/reports/nanoscience.htm (as of March 2006).

U.S. Department of Commerce, Technology Administration, *A Survey of the Use of Biotechnology in Industry*, October 2003. Online at http://www.technology.gov/reports/Biotechnology/CD120a_0310.pdf (as of March 2006).

U.S. National Science Foundation and U.S. Department of Commerce, *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology and Cognitive Science*, Arlington, Va., June 2002. Online at http://www.wtec.org/ConvergingTechnologies (as of March 2006).

11-L-0559/OSD/58146

Country Capacity to Acquire and Implement Technology Applications

Bhargava, Vinay, and Emil Bolongaita, Challenging *Corruption in Asia: Case Studies and a Framework for Action*, Washington, D.C.: The World Bank, 2004.

Central Intelligence Agency, *The World Factbook*, July 14, 2005. Online at http://www.cia.gov/cia/publications/factbook/ (as of March 2006).

Freedom House, *Freedom in the World 2005: The Annual Survey of Political Rights and Civil Liberties*, 2004. Online at http://www.freedomhouse.org/template.cfm?page=15&year=2005 (as of March 2006).

Kaufman, Daniel, and Aart Kraay, "Governance and Growth: Causality Which Way?—Evidence for the World, in Brief," The World Bank, February 2003. Online at http://www.worldbank.org/wbi/governance/pdf/growthgov_synth.pdf (as of March 2006).

Kaufman, Daniel, Aart Kraay, and Massimo Mastruzzi, *Governance Matters IV: Governance Indicators for 1996–2004*, Washington, D.C.: World Bank Institute, May 9, 2005. Online at http://www.worldbank.org/wbi/governance/pubs/govmatters4.html (as of March 2006).

Transparency International, Transparency International Global Corruption Barometer," July 3, 2003. Online at http://www.transparency.org/policy_and_research/surveys_indices (as of March 2006).

——— Corruption Perception Index 2005. Online at http://www1.transparency.org/cpi/2005/cpi2005_infocus.html (as of March 2006).

Wagner, Caroline, Irene Brahmakulam, Brian Jackson, Anny Wong, and Tatsuro Yoda, *Science and Technology Collaboration: Building Capacity in Developing Countries*, Santa Monica, Calif.: RAND Corporation, MR-1357.0-WB, 2001. Online at http://www.rand.org/pubs/monograph_reports/MR1357.0/index.html (as of March 2006).

Wilson, Ernest J., *The Information Revolution and Developing Countries*, Cambridge, Mass.: MIT Press, 2004.

Wong, Anny, Aruna Balakrishnan, James Garulski, Thor Hogan, Eric Landree, and Maureen McArthur, Science and *Technology Research and Development Capacity in Japan: Observations from Leading U.S. Researchers and Scientists*, Santa Monica, Calif.: RAND Corporation, TR-211-MRI, 2004. Online at http://www.rand.org/pubs/technical_reports/TR211/index.html (as of March 2006).

Problems and issues

Board on Global Health and Institute of Medicine, *Microbial Threats to Health: Emergence, Detection, and Response*, Washington, D.C.: National Academies Press, 2003. Online at http://www.nap.edu/books/030908864X/html/ (as of March 2006).

Cohen, Desmond, "Poverty and HIV/AIDS in Sub-Saharan Africa," Issue Paper No. 27, United Nations Development Programme, undated. Online at http://www.undp.org/hiv/publications/issues/english/issue27e.html (as of March 2006).

11-L-0559/OSD/58147

Food and Agriculture Organization of the United Nations, *The State of Food and Agriculture, 2003–2004—Agricultural Biotechnology: Meeting the Needs of the Poor?* Rome, Italy: United Nations, 2004. Online at http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/006/Y5160E/Y5160E00.htm (as of March 2006).

National Research Council, Review *of the Research Program of the Partnership for a New Generation of Vehicles: Seventh Report*, Washington, D.C. National Academy Press, 2001.

———, *The Hydrogen Economy Opportunities, Costs, Barriers, and R&D Needs*, Washington, D.C.: National Academies Press, 2004.

Pew Initiative on Food and Biotechnology, *Bugs in the System? Issues in the Science and Regulation of Genetically Modified Insects*, Washington, D.C.: Pew Charitable Trusts, 2004. Online at http://www.pewtrusts.com/pdf/pifb_bugs_012204.pdf (as of March 2006).

Sustainable Mobility Project, *Mobility 2030: Meeting the Challenges to Sustainability*, Geneva, Switzerland: World Business Council for Sustainable Development, 2004. Online at http://www.wbcsd.org/Plugins/DocSearch/details.asp?DocTypeId=25&ObjectId=NjA5NA&URLBack=%2Ftemplates%2FTemplateWBCSD2%2Flayout%2Easp%3Ftype%3Dp%26MenuId%3DMjYz%26doOpen%3D1%26ClickMenu%3DLeftMenu (as of March 2006).

U.S. Department of Energy, "Basic Research Needs for the Hydrogen Economy," Basic Energy Sciences Workshop on Hydrogen Production, Storage, and Use, Rockville, Md., May 13–15, 2003. Online at http://www.sc.doe.gov/bes/reports/abstracts.html#NHE (as of March 2006).

Woodward, John D., Katharine Watkins Webb, Elaine M. Newton, Melissa Bradley, David Rubenson, Kristina Larson, Jacob Lilly, Katie Smythe, Brian K. Houghton, Harold Alan Pincus, Jonathan M. Schachter, and Paul Steinberg, *Army Biometric Applications: Identifying and Addressing Sociocultural Concerns*, Santa Monica, Calif.: RAND Corporation, MR-1237-A, 2001. Online at http://www.rand.org/pubs/monograph_reports/MR1237/index.html (as of March 2006).

World Health Organization, "Water-Related Diseases," Web page, undated, http://www.who.int/water_sanitation_health/diseases/oncho/en/ (as of March 2006).

———, *Emerging Issues in Water and Infectious Diseases*, Geneva, Switzerland, 2003. Online at http://www.who.int/water_sanitation_health/emerging/emerging_issues/en/ (as of March 2006).

———, *Avian Influenza: Assessing the Pandemic Threat*, Geneva, Switzerland, 2005

———, Food Safety Department, *Modern Food Biotechnology, Human Health and Development*, Geneva, Switzerland, 2005. Online at http://www.who.int/foodsafety/biotech/who-study/d (as of March 2006).

Wu, Felicia, and William P. Butz, *The Future of Genetically Modified Crops: Lessons from the Green Revolution*, Santa Monica, Calif.: RAND Corporation, MG-161-RC, 2004. Online at http://www.rand.org/pubs/monographs/MG161/index.html (as of March 2006).

11-L-0559/OSD/58148

JUL 2 8 2006

INFO MEMO

FOK: SECRETARY OF DEFENSE

FROM: Gordon England

SUBJECT: "The Global Technology Revolution 2020" by RAND

- Net Assessment, Defense Research, and Engineering and Policy Planning took a look at the RAND report but did not see direct defense applications for the technologies listed.

- They missed the implications as the primary effects of the technologies cited were economic, health, and environmental in nature – not technology per se.

- "Upon reflection," Policy Planning is now undertaking a strategic futures assessment to study long-term trends and will wargame potential "strategic shocks" which could alter our security approach.

7/28

OSD 10055-06
7/31/2006 9:57:02 AM
11-L-0559/OSD/58149

~~FOUO~~

June 12,2006

TO: Gordon England

FROM: Donald Rumsfeld D.R.

SUBJECT: "The Global Technology Revolution **2020**" by RAND

I just went through this *Global Technology* ***Revolution*** 2020 ***summary.*** It **has** some interesting material. Assuming it is close to correct, it seems to me you ougbt to put together a group to think through the extent to which the Department of Defense is focusing on these technologies, the extent to which they can be used against us, the extent to which we can improve our defense and deterrence.

Please come **up** with a proposal **and** we will decide how we want to proceed.

Thanks.

Attach: ***The*** *Global Technology Revolution* 2020 Executive Summary by RAND

DHR.ss
SF061206-13

Please Respond By 07/14/06

~~FOUO~~

OSD 10055-06
11-L-0559/OSD/58150
6/22/2006 3:03:43 PM

OFFICE OF THE SECRETARY OF DEFENSE
1920 DEFENSE PENTAGON
WASHINGTON, DC 20301-1920

DIRECTOR OF
NET ASSESSMENT

5 July 2006

MEMORANDUM FOR Office of the Deputy Secretary of Defense

SUBJECT The Global Technological Revolution 2020

In accordance with a 22 June memo from your office, we reviewed *The* Global *Technological* Revolution of 2020 Executive Summary by RAND for the implications within the report's conclusions and their potential impacts on the DoD. We found the document is a direct, albeit simple, extrapolation assaying sixteen selected technologies (of 56 originally under consideration) and their potential impacts around the globe. The report breaks down the impact of these technologies based upon the ability of the selected nations to either acquire or apply these technologies. Few of the technologies have any purely military applications, or applications exclusive to national defense. Almost all of the technologies may have dual uses which could benefit the US security sector, although not necessarily exclusively within the DoD. The most directly relevant technology mentioned is the application of aspects of some quantum mechanic properties to the field of encryption, although the Executive Summary did not address this aspect. The Executive Summary of the report limited itself to extant or developing technologies.

The primary security implications contained within this report are the potential (and unstated) second-order effects of some of the technologies. For example, the widespread availability of cheap solar energy and rural wireless communications, as well as advanced filters and catalysts for water purification, may result in population explosions unforecast at this time due to drastically reduced child mortality rates in several Third-World nations. The report's conclusions, however, are limited to First-Order effects related to the separate nation's abilities to either acquire and field the selected technologies. The effects cited, as expected given the technologies selected, were not defense related but were primarily involved in developing economic, health, and environmental results. With the exception of the aforementioned quantum encryption, none seem to have a direct defense application that might be used against us.

The SECDEF's recommendation for a panel investigation may not be viable, as we do not see any obvious direct defense applications for the great majority of the technologies listed. The SECDEF may be better served with a roundtable study and brief report which examines the Second-Order effects of societal and economic shifts and byproducts resultant from the technologies identified in this RAND Executive Summary. The point of contact on this topic is LTC Robert Bateman at (b)(6) or Robert.Bateman@osd.mil.

A.W. MARSHALL

OSD 10055-06
7/6/2006 12:02:56 PM
11-L-0559/OSD/58151

~~FOUO~~

June 12,2006

TO: Gordon England

FROM: Donald Rumsfeld D.R.

SUBJECT "The Global Technology Revolution **2020**" by **RAND**

I just went through this ***Global Technology Revolution 2020 summary.*** It has some interesting material. Assuming it is close to correct, it seems to me you ought to put together a group to think through the extent to which the Department of Defense is focusing on these technologies, the extent to which they can be used against us, the extent to which we can improve our defense and deterrence.

Please come up with a proposal and we will decide how we want to proceed.

Thanks.

Attach ***The Global Technology Revolution 2020*** Executive ***Summary*** by RAND

DHR.ss
SF061206-13

Please Respond By 07/14/06

11-L-0559/OSD/58152

OSD 10055-06

8/22/2006 3:03:43 PM

The Global Technology Revolution 2020

EXECUTIVE SUMMARY

Bio/Nano/Materials/Information Trends, Drivers, Barriers, and Social Implications

Richard Silberglitt • Philip S. Antón • David R. Howell • Anny Wong
with S. R. Bohandy, Natalie Gassman, Brian A. Jackson, Eric Londree, Shori Lawrence Pfleeger, Elaine M. Newton, and Felicia Wu

Prepared for the
National Intelligence Council

Approved for public release; distribution unlimited

NATIONAL SECURITY RESEARCH DIVISION

11-L-0559/OSD/58153

The research described in this report was prepared for the National Intelligence Council.

Library of Congress Cataloging-in-Publication Data

The Global technology revolution 2020, executive summary : bio/nano/materials/information trends, drivers, barriers, and social implications / Richard Silberglitt ... [et al.].
p. cm.
"MG-475."
Includes bibliographical references.
ISBN 0-8330-3910-5 (pbk. : alk. paper)
1. Nanotechnology. I. Silberglitt, R. S. (Richard S.).

T174.7.G384 2006
338.9'260905—dc22

2006009729

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND is a registered trademark.

© Copyright 2006 RAND Corporation

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from RAND.

Published 2006 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
1200 South Hayes Street, Arlington, VA 22202-5050
4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213
RAND URL: http://www.rand.org/
To order RAND documents or to obtain additional information, contact
Distribution Services: Telephone: (310) 451-7002;
Fax: (310) 451-6915; Email: order@rand.org

11-L-0559/OSD/58154

Foreword

The National Intelligence Council (NIC) sponsored this study by the RAND Corporation to inform the NIC's 2020 project[1] and help provide US policymakers with a view of how world developments could evolve, identifying opportunities and potentially negative developments that might warrant policy action. From June 2004 through August 2005, RAND undertook the challenging task of identifying technologies and applications that have the potential for significant and dominant global impacts by 2020.

As RAND found in its prior study for the NIC, *The Global Technology Revolution* (Antón, Silberglitt, and Schneider, 2001), technology will continue to accelerate and integrate developments from multiple scientific disciplines in a "convergence" that will have profound effects on society. RAND's new study, however, has delved further into sodal impacts and concluded that

- Regional and country-specific differences in social need and science and technology (S&T) capabilities are resulting in differences in how technology is revolutionizing human affairs around the world,
- Regional differences in public opinion and issues may strongly influence technology implementation,
- Maintaining S&T capacity requires consideration and action across a large number of social capabilities and stability dimensions,
- Capacity building is an essential component of development, and
- Public policy issues relating to some technology applications will engender strong public debate.

The implications of these findings are important to US policymakers. For example, while the United States remains a leader in S&T capability and innovation, it is not the sole kader and thus will not always dominate every technical area. Also, many technologies will evolve globally in ways that differ from their evolution in the United States, so we cannot merely apply a US view as a cookie cutter to understanding how technology will change the world. In addition, US understanding of potential technological threats from foreign powers quires a broad understanding not just of S&T skills and capabilities but also the institutional, human,

[1] See http://www.cia.gov/nic/NIC_2020_project.html for further information on the NIC 2020 Project and its final report, *Mapping the Global Future*.

11-L-0559/OSD/58155

and physical capacity to exploit technological opportunities. Finally, innovative combinations of new and existing technologies can help to meet region-specific needs despite their lack of use in the US sector.

I commend this report to you as a resource for understanding how S&T and social issues interact and depend not only on technological advances but also on the broader capabilities of countries that seek development and economic rewards through S&T exploitation. As important as S&T is today to the United States and the world, it will become even more important in the future.

Dr. Lawrence K. Gershwin
National Intelligence Officer for Science and Technology
Office of the Director of National Intelligence

11-L-0559/OSD/58156

Preface

Various technologies (including biotechnology, nanotechnology [broadly defined], materials technology, and information technology) have the potential for significant and dominant global impacts by 2020. This report is based on a set of *foresights* (not predictions or forecasts)[1] into global technology trends in biotechnology, nanotechnology, materials technology, and information technology and their implications for the world in the year 2020. These foresights were complemented by analysis of data on current and projected science and technology capabilities, drivers, and barriers in countries across the globe. For a more detailed discussion of the material described in this report, including further documentation and references, the reader is strongly recommended to review the in-depth analyses from this study.[2]

This work was sponsored by the National Intelligence Council (NIC) to inform its publication *Mapping the Global Future: Report of the National Intelligence Council's 2020 Project Based on Consultations with Nongovernmental Experts Around the World*, December 2004. In addition, funding was provided by the Intelligence Technology Innovation Center (ITIC) and the U.S. Department of Energy. It is a follow-on report to a RAND Corporation report, *The Global Technology Revolution* (Antón, Silberglitt, and Schneider, MR-1307-NIC, 2001), which was sponsored by the NIC to inform its 2000 document, *Global Trends 2015. Global Trends 2015* and the *1996* NIC document *Global Trends 2010* identified key factors that appeared poised to shape the world by 2015 and 2010, respectively.

This report should be of interest to policymakers, Intelligence Community analysts, technology developers, the public at large, and regional experts interested in potential global technology trends and their broader social effects.

This project was conducted jointly in the Intelligence Policy Center and the Acquisition and Technology Policy Center of the RAND National Security Research Division (NSRD). NSRD conducts research and analysis for the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Department of the Navy, the Marine Corps, the defense agencies, and the Defense Intelligence Community, allied foreign governments, and foundations.

[1] A foresight activity examines trends and indicators of possible future developments without predicting or describing a single state or timeline and is thus distinct from a forecast or scenario development activity (Salo and Cuhls, 2003).

[2] See Silberglitt, Antón, Howell, and Wong (2006), available on the *CD-ROM* included with the hard copies of this report, or from the RAND Web site at http://www.rand.org/pubs/technical_reports/TR303/.

11-L-0559/OSD/58157

For further information regarding this report, contact its authors or the Intelligence Policy Center Director, John Parachini, at RAND Corporation, 1200 South Hayes Street, Arlington, VA 22202-5050; by telephone at 703.413.1100x5579, or by email at john_parachini@rand.org. For more information on RAND's Acquisition and Technology Policy Center, contact the Director, Philip Antón. He can be reached by email at atpc-director@rand.org; by telephone at 310.393.0411, x7798; or by mail at RAND Corporation, 1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138. More information about RAND is available at www.rand.org.

11-L-0559/OSD/58158

Contents

Foreword iii
Preface v
Figures and Tables ix
Summary ..... ---
Acknowledgments ..... ---

Executive Summary 1
Introduction 1
Some Top Technology Applications for 2020 2
Nations Will Continue to Vary in Their Capacity to Reap the Benefits of Technology Applications 4
What Countries Will Be Able to Acquire Which Technology Applications by 2020? 5
What Drivers and Barriers Affect These Countries' Ability to *Implement* the Technology Applications They Could Acquire? 7
Different Countries, Different Issues: The Capacity of Various Nations to Use Technology Applications to Address National Problems 12
Why Countries Prioritize Economic Growth 13
Countries at Various Levels of Development Prioritize Strengthening the Military 14
Individual Health as a National Priority Generally Follows Public Health 14
Countries' Capacity to Achieve *Science* and Technology Goals 14
Scientifically Lagging Countries 15
Scientifically Developing Countries 16
Scientifically Proficient Countries 18
Scientifically Advanced Countries 20
The Science and Technology Path to 2020 22
Accelerated Technology Development Will Continue 22
Countries Will Benefit in Considerably Different Ways 23
Action Will Be Required to Maintain a High Level of S&T Capacity 23
Countries That Lack Capacity Will Need to Build It 23
Certain Technology Applications Will Spark Head Public Debate 24
Consideration Could Head Off Problems and Maximize Benefits 24

11-L-0559/OSD/58159

A Few Words in Conclusion..... 24

Selected Bibliography..... 27

11-L-0559/OSD/58160

Figures and Tables

Figures

1. Selected Countries' Capacity to *Acquire* the Top 16 Technology Applications 6
2. Mapping of Country Scientific Capability Rating to Top 16 Technology Applications .. 7
3. Drivers and Barriers in Selected Countries 9
4. Selected Countries' Capacity to *Implement* the Top 16 Technology Applications..... 11

Tables

1. Technical and Implementation Feasibility of Illustrative 2020 Technology Applications 4
2. Representative Countries Across Regions of the World Selected for Analysis..... 5

11-L-0559/OSD/58161

Summary

This report presents the results from a set of foresights into global technology trends and their implications for the world in the year 2020. Areas of particular importance include biotechnology, nanotechnology, materials technology, and information technology. A sample of 29 countries across the spectrum of scientific advancement (low to high) was assessed with respect to the countries' ability to acquire and implement 16 key technology applications (e.g., cheap solar energy, rural wireless communications, genetically modified crops). The study's major conclusions include the following:

- Scientifically advanced countries, such as the United States, Germany, and Japan, will be able to implement all key technologies assessed.
- Countries that are not scientifically advanced will have to develop significant capacity and motivation before barriers to technology implementation can be overcome.
- Public policy issues in certain areas will engender public debate and strongly influence technology implementation.

Many technology trends and applications have substantial momentum behind them and will be the focus of continued research and development, consideration, market forces, and debate. These technologies will be applied in some guise or other, and the effects could be dramatic, including significant improvements in human lifespan, reshuffling of wealth, cultural amalgamation or innovation, and reduced privacy.

11-L-0559/OSD/58162

Acknowledgments

We would like to thank Lawrence K. Gershwin, Maj Gen Richard L. Engel (Ret.), William A. Anderson, Brian Shaw, and Julianne Chesky of the National Intelligence Council for their wonderful support and encouragement throughout this study.

The authors thank the following RAND regional experts for very helpful discussions of social and public policy issues, development needs, technological status, and the environment for implementation of technology applications: Keith Crane, Heather Gregg, Nina Hachigian, Rollie Lal, Kevin O'Brien, William Overholt, D.J. Peterson, Angel Rabasa, and Somi Seong. We also acknowledge the helpful discussions of quantum computing and cryptography we had with Calvin Shipbaugh and the several useful inputs on the status of science and technology in India from Ramesh Bapat, and are extremely grateful to Michael Tseng for quantifying the country data on capacity to acquire, drivers, and barriers.

The authors owe a special debt of gratitude to Robert Anderson, Steve Berner, Jennifer Brower, Ted Gordon, and Stephen Larrabee for their insightful reviews of this study and for several important suggestions that contributed greatly to improving the report. We also thank Linda Barron for her help in compiling, formatting, and producing the manuscript. Finally, we acknowledge the outstanding efforts of Stephen Bloodsworth in designing and producing the maps and quadrant charts.

11-L-0559/OSD/58163

Executive Summary

Introduction

The world is in the midst of a global technology revolution. For the past 30 years, advances in biotechnology, nanotechnology, materials technology, and information technology have been occurring at an accelerating pace, with the potential to bring about radical changes in all dimensions of life. The pace of these developments shows no sign of abating over the next 15 years, and it appears that their effects will be ever more remarkable. The technology of 2020 will integrate developments from multiple scientific disciplines in ways that could transform the quality of human life, extend the human lifespan, change the face of work and industry, and establish new economic and political powers on the global scene.

While people often do not understand a technology itself, they can often understand what that technology, when applied, might do for them and the societies in which they live when an application concept is presented to them. Actual adoption, however, is not necessarily automatic because of the confluence of economic, social, political, and other mitigating factors. Such technology applications, designed to accomplish specific functions, and their mitigating factors are the focus of our study.

Increasingly, such applications entail the integration of multiple technologies. New approaches to harnessing solar energy, for instance, are using plastics, biological materials, and nanoparticles. The latest water purification systems use nanoscale membranes together with biologically activated and catalytic materials. Technology applications such as these may help to address some of the most significant problems that different nations face—those involving water, food, health, economic development, the environment, and many other critical sectors.

While extensive, this technology revolution will play out differently around the globe. Although a technology application may be technically possible by 2020, not all countries will necessarily be able to acquire it—much less put it widely to use—within that time frame. An adequate level of science and technology (S&T) capacity is the first requirement for many sophisticated applications. A country might obtain a technology application through its domestic research and development (R&D) efforts, a technology transfer, or an international R&D collaboration—all various indicators of a country's S&T capacity. Or it could simply purchase a commercial off-the-shelf system from abroad. But many countries will not have achieved the necessary infrastructure or resources in 15 years to do such things across the breadth of the technology revolution.

11-L-0559/OSD/58164

What is more, the ability to acquire a technology application does not equal the ability to implement it. Doing research or importing know-how is a necessary initial step. But successful implementation also depends on the drivers within a country that encourage technological innovation and the barriers that stand in its way. Such drivers and barriers reflect a country's institutional, human, and physical capacity;[1] its financial resources; and its social, political, and cultural environment. Each of these factors plays a part in determining a nation's ability to put a new technology application into the hands of users, cause them to embrace it, and support its widespread use over time.

For these reasons, different countries will vary considerably in their ability to utilize technology applications to solve the problems they confront. To be sure, not all technology applications will require the same level of capacity to acquire and use. But even so, some countries will not be prepared in 15 years to exploit even the least demanding of these applications—even if they can acquire them—whereas other nations will be fully equipped to both obtain and implement the most demanding.

Some Top Technology Applications for *2020*

Of *56* illustrative applications that we identified as possible by *2020,* 16 appear to have the greatest combined likelihood of being widely available commercially, enjoying a significant market demand, and affecting multiple sectors (e.g., water, food, land, population, governance, social structure, energy, health, economic development, education, defense and conflict, and environment and pollution).

- *Cheap solar energy*: Solar energy systems inexpensive enough to be widely available to developing and undeveloped countries, as well as economically disadvantaged populations.
- *Rural wireless communications*: Widely available telephone and Internet connectivity without a wired network infrastructure.
- *Communication devices for ubiquitous information access*: Communication and storage devices—both wired and wireless—that provide agile access to information sources anywhere, anytime. Operating seamlessly across communication and data storage protocols, these devices will have growing capabilities to store not only text but also meta-text with layered contextual information; images, voice, music, video, and movies.
- *Genetically modified (GM) crops*: Genetically engineered foods with improved nutritional value (e.g., through added vitamins and micronutrients), increased production (e.g., by tailoring crops to local conditions), and reduced pesticide use (e.g., by increasing resistance to pests).
- *Rapid bioassays*: Tests that can be performed quickly, and sometimes simultaneously, to verify the presence or absence of specific biological substances.

[1] Institutional capacity includes honest and effective systems of governance, banking and finance, law, education, and health. Human capacity entails the quality and quantity of a country's educated and skilled personnel, as well as the level of education and scientific literacy of its people. Physical capacity involves the quality and quantity of critical infrastructures—e.g., transport and freight networks, schools, hospitals, research facilities, and utilities.

11-L-0559/OSD/58165

- *Filters and catalysts*: Techniques and devices to effectively and reliably filter, purify, and decontaminate water locally using unskilled labor.
- *Targeted drug delivery*: Drug therapies that preferentially attack specific tumors or pathogens without harming healthy tissues and cells.
- *Cheap autonomous housing*: Self-sufficient and affordable housing that provides shelter adaptable to local conditions, as well as energy for heating, cooling, and cooking.
- *Green manufacturing*: Redesigned manufacturing processes that either eliminate or greatly reduce waste streams and the need to use toxic materials.
- *Ubiquitous radio frequency identification (MID) tagging of commercial products and individuals*: Widespread use of RFID tags to track retail products from manufacture through sale and beyond, as well as individuals and their movements.
- *Hybrid vehicles*: Automobiles available to the mass market with power systems that combine internal combustion and other power sources while recovering energy during braking.
- *Pervasive sensors*: Presence of sensors in most public areas and networks of sensor data to accomplish real-time surveillance.
- *Tissue engineering*: The design and engineering of living tissue for implantation and replacement.
- *Improved diagnostic and surgical methods*: Technologies that improve the precision of diagnoses and greatly increase the accuracy and efficacy of surgical procedures while reducing invasiveness and recovery time.
- *Wearable computers:* Computational devices embedded in clothing or in other wearable items, such as handbags, purses, or jewelry.
- *Quantum cryptography*: Quantum mechanical methods that encode information for secure transfer.

The technology applications we identified vary significantly in assessed technical feasibility and implementation feasibility by 2020. Table 1 shows the range of this variation on a matrix of 2020 technical feasibility versus 2020 implementation feasibility for all 56 technology applications. *Technical feasibility* is defined as the likelihood that the application will be possible on a commercial basis by 2020. *Implementation feasibility* is the net of all nontechnical barriers and enablers, such as market demand, cost, infrastructure, policies, and regulations. We based its assessment on rough qualitative estimates of the size of the market for the application in 2020 and whether or not it raises significant public policy issues. The numbers in parentheses are the number of sectors that the technology can affect, and the designation global (G) or *moderated* (M) indicates our estimate, based on both the technical foresights and our discussions with RAND regional experts, of whether the application will be diffused globally in 2020 or will be moderated in its diffusion (i.e., restricted by market, business sector, country, or region).

11-L-0559/OSD/58166

Table 1
Technical and Implementation Feasibility of Illustrative 2020 Technology Applications

	Niche market only (–→)	May satisfy a need for a medium or large market, but raises significant public policy issues (–)	Satisfies a well-documented need for a medium market and raises no significant public policy issues (+)	Satisfies a well-documented need for a large market and raises no significant public policy issues (+→)
Highly feasible (+→)	• Chemical, biological, radiological, or nuclear (CBRN) sensors on emergency response teams (2,G)	• Genetic screening (2,G) • GM crops (8,M) • Pervasive sensors (4,G)	• Targeted drug delivery (5,M) • Ubiquitous information access (6,M) • Ubiquitous RFID tagging (4,G)	• Hybrid vehicles (2,G) • Internet (for purposes of comparison) (7,G) • Rapid bioassays (4,G) • Rural wireless communications (7,G)
Feasible (+)	• GM animals for R&D (2,M) • Unconventional transport (3,M)	• Implants for tracking and identification (1,M) • Xenotransplantation (1,M)	• Cheap solar energy (10,M) • Drug development from screening (2,M) • Filters and catalysts (7,M) • Green manufacturing (5,M) • Monitoring and control for disease management (3,M) • Smart systems (1,M) • Tissue engineering (4,M)	• Improved diagnostic and surgical methods (2,G) • Quantum cryptography (2,G)
Uncertain (U)	• Commercial unmanned aerial vehicles (4,M) • High-tech terrorism (3,M) • Military nanobiotechnology (2,G) • Military robotics (2,G)	• Biometrics at sole identification (3,M) • CBRN sensor network in cities (4,M) • Gene therapy (2,G) • GM insects (5,M) • Hospital robotics (2,M) • Secure video monitoring (3,M) • Therapies based on stem cell R&D (5,M)	• Enhanced medical recovery (3,M) • Immunotherapy (2,M) • Improved treatments from data analysis (2,M) • Smart textiles (4,M) • Wearable computers (5,M)	• Electronic transactions (2,G) • Hands-free computer interface (2,G) • "Invisible" drug R&D (2,G) • Resistant textiles (2,G) • Secure data transfer (2,M)
Unlikely (–)	• Memory enhancing drugs (3,M) • Robotic scientist (1,M) • "Super soldiers" (2,M)	• Chip implants for brain (4,M)	• Drugs tailored to genetics (2,M)	• Cheap autonomous housing (6,G) • Print-to-order books (2,G)
Highly unlikely (←)	• Proxy-bot (3,M) • Quantum computers (3,M)	• Genetic selection of offspring (2,M)	• Artificial muscles and tissue (2,M)	• Hydrogen vehicles (2,G)

Nations Will Continue to Vary in Their Capacity to Reap the Benefits of *Technology* Applications

Global diffusion of a technology application **does** not mean universal diffusion: Not **every** *nation* in the world will be able to implement, or even acquire, all technology applications **by 2020.** *The* level of direct S&T capacity may be markedly different from one country to another. Within different geographical regions, countries also have considerable differences that play into their ability. These differences may include variations in physical size, natural conditions (e.g., climate), and location (e.g., proximity to **oceans** and water). The size of the population and demographics (e.g., birthrate) may vary dramatically between countries in a single region. Countries may have very different types of government, economic **systems, and** levels of economic development.

11-L-0559/OSD/58167

The 29 countries we compared (Table 2) represent not only the world's major geographical regions but also the range of national differences within them. We selected many of these countries specifically as representative of groups of similar nations, trying not to include in a single geographical area more than one country with similar characteristics. If several countries in a given region were very large, for example, we brought in one that would grossly represent all the large countries. If a number of other nations in the same region were small, we included a representative small country.

What Countries Will Be Able to *Acquire* Which Technology Applications by 2020?

Seven of the 29 countries we compared will be *scientifically advanced* through 2020. They will almost certainly have the S&T capacity to acquire all 16 of the top technology applications by 2020. The United States and *Canada* in North America, Germany in Western Europe, and South Korea and Japan in Asia fall into this category. In Oceania, Australia takes its place on this list, as does Israel in the Middle East. These countries are in blue boxes in Figure 1.

Four of the 29 countries will be *scientifically proficient* through 2020. They will very likely have the necessary S&T capacity through 2020 to acquire 12 of the top 16 technology applications (see Figure 2). China and India in Asia, Poland in Eastern Europe and Russia represent this group. They are shown in green boxes in Figure 1.

Seven of the 29 countries will be *scientifically developing* through 2020. They will have sufficient S&T capacity through 2020 to acquire nine of the top 16 applications (see Figure 2).[2] From South America, Chile, Brazil, and Colombia fall into this group. Mexico in North

Table 2
Representative Countries Across Regions of the World Selected for Analysis

Aria	Oceania	North Africa and the Middle East	Europe	Afriu	North America	Central and South America and the Caribbean
China	Australia	Egypt	Georgia	Cameroon	Canada	Brazil
India	Fiji	Iran	Germany	Chad	Mexico	Chile
Indonesia		Israel	Poland	Kenya	United States	Colombia
Japan		Jordan	Russia	South Africa		Dominican Republic
South Korea			Turkey			
Nepal						
Pakistan						

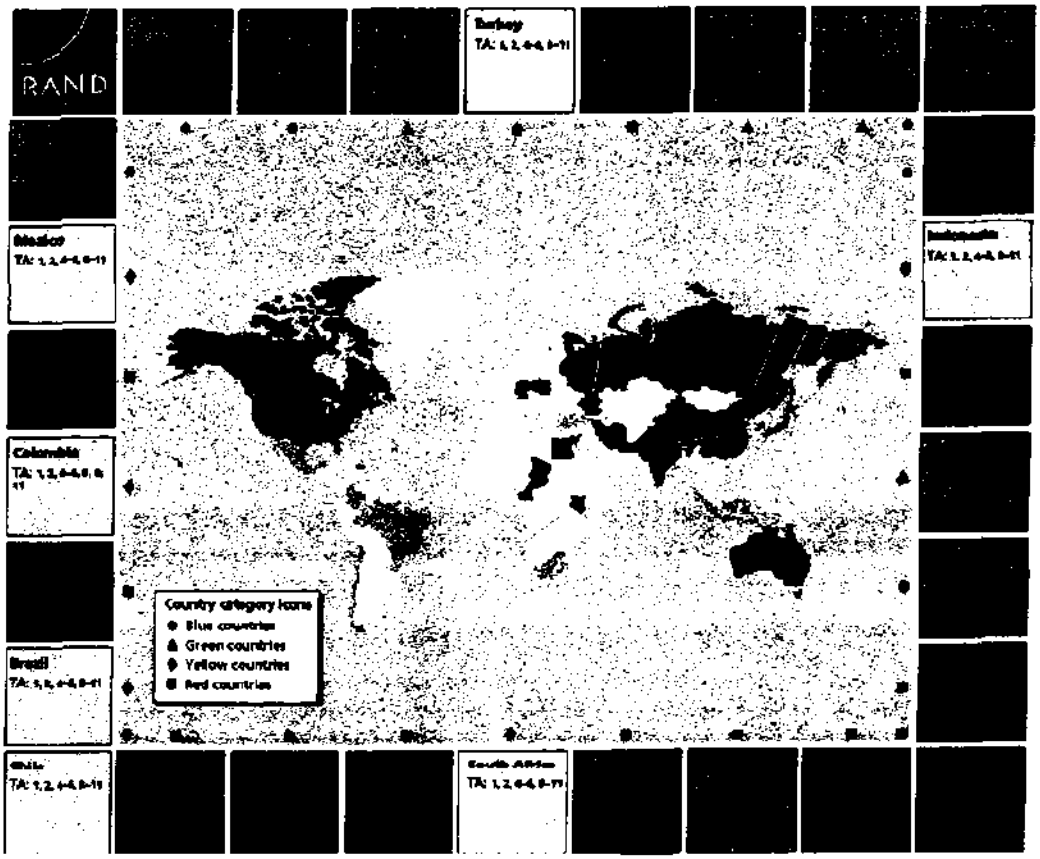
NOTE We recognize that there are many ways to assign countries to regional groupings. In this instance, we placed Turkey in the European group because of the country's long and sustained commitment to join the European Union.

[2] Colombia will not be able to acquire ubiquitous RFID tagging because its economy is much less involved in international trade than the other countries in this group are, and its domestic and regional markets are unlikely to generate sufficient demand for this technology application

America, Turkey in Europe, Indonesia in Asia, and South Africa in Africa are also included. These seven countries are shown in yellow boxes in Figure 1.

Eleven of the 29 countries will be *scientifically lagging* through *2020*. They will have only enough S&T capacity to acquire **five** of the applications through *2020* (see Figure 2). Fiji in Oceania; the Dominican Republic in the Caribbean; Georgia in Europe; Nepal and Pakistan in Asia; Egypt, Iran, and Jordan in North Africa and the Middle East; and Kenya, Cameroon, and Chad in Africa are in this group. These countries are shown in red boxes in Figure 1.

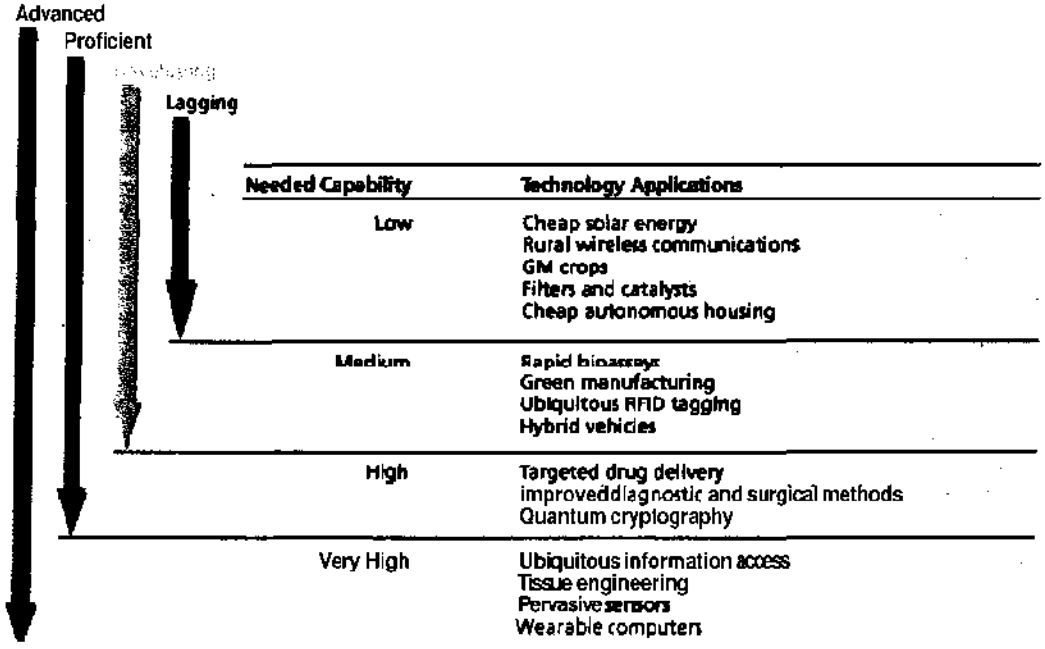
Figure 1
Selected Countries' Capacity to *Acquire* the Top 16 Technology Applications



NOTE Countrieswere selected as representative of groups of similar nations in a single geographical area. Countries arecolor coded by their S&T capacity: scientifically advanced (blue), scientifically proficient (green), scientifically developing (yellow), and scientifically lagging (red). Technology application (TA) numbers are as follows: (1) cheap solar energy, (2) rural wireless communications, (3) ubiquitous information access, (4) GM crops, (5) rapid bioassays, (6) filters and catalysts, (7) targeted drug delivery, (8) cheap autonomous housing, (9) green manufacturing, (10) ubiquitous RFID tagging, (11) hybrid vehicles, (12) pervasive sensors, (13) tissue engineering, (14) improved diagnostic and surgical methods, (15) wearable computers, (16) quantum cryptography.

RAND MG405-1

Figure 2
Mapping of Country Scientific Capability Rating to Top 16 Technology Applications



RAND MG754-2

By 2020, one should be able to see several trends in the capacity of countries to acquire technology applications (see Figure 1). Most of North America and Western Europe, along with Australia and the developed economies of East Asia, will be scientifically advanced. Most of Asia and Eastern Europe will be scientifically proficient. Latin America and much of Southeast Asia are likely to be scientifically developing. The majority of Africa and the Middle East, as well as the Caribbean and the Pacific Islands, will be scientifically lagging.

What Drivers and Barriers Affect These Countries' Ability to *Implement* the Technology Applications They Could Acquire?

The S&T capacity that enables a country to acquire a technology application is only *one* of several factors determining whether that country will be able to implement it. The *drivers* facilitating innovation and the *barriers* hindering it also have a decisive influence on the ability to *implement* technology applications (i.e., to put the applications in place and get significant gains from them across the country). These assessments involve such things as whom an application will benefit and whether a country can sustain its use over time. Drivers and barriers involve the same dimensions: A dimension that is a driver in *one* context may be a barrier in another. For example, financing, when available, would be a driver, but financing, when

11-L-0559/OSD/58170

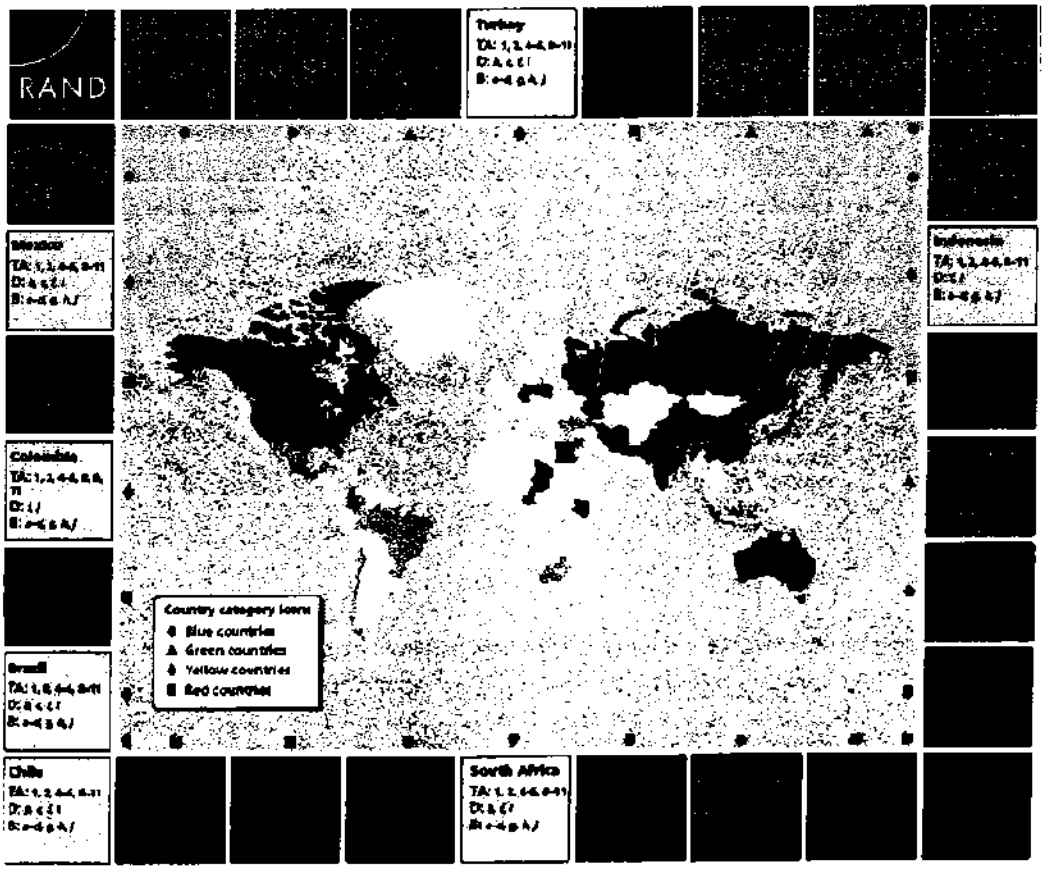
lacking, is a barrier. A high level of literacy among a nation's citizens would be a driver, but if literacy were low, it would form a barrier. And in certain cases, a dimension that is a barrier can simultaneously be a driver when only partial progress in that dimension has been made or when conflicting issues in the dimension are present. For example, education in the United States is a driver, but there are also concerns about problems in math and science education in the United States. Also, environmental concerns may dampen some S&T applications in China while promoting environmentally friendly applications, such as green manufacturing and hybrid vehicles.

These are the major drivers and barriers that countries *may* face through 2020 *(see* Figure 3);[3]

- ***Cost and financing:*** The cost of acquiring the technology application and of building the physical infrastructure and human capital to introduce and sustain its use, the mechanisms and resources available to access the needed funds, and the costs of those funds.
- Laws ***and policies:*** Legislation and policies that either promote, discourage, or prohibit the use of a particular technology application.
- Social ***values, public opinion and politics:*** Religious beliefs, cultural customs, and social mores that affect how a technology application is perceived within a ***society;*** compatibility of a new application with dominant public opinions; and the politics and economics underlying debates about an application.
- *Infrastructure:* Physical infrastructure at a consistent threshold of quality that can be maintained, upgraded, and expanded over time.
- ***Privacy concerns:*** Social values toward privacy in a country and personal preferences about the availability and use of personal data that arise from an individual's ideological inclinations and experience with the privacy issue.
- ***Use of resources and environmental health:*** Availability and accessibility of natural resources, concerns about pollution and its impact on humans, and social attitudes and politics about conservation and preserving land and wildlife.
- ***R&D investment:*** Funding to educate and train scientists, engineers, and technicians; build research laboratories, computer networks, and other facilities conduct scientific research and develop new technologies; transfer technologies to commercial applications; and enter technology applications into the marketplace.
- ***Education and literacy:*** Levels of general education and literacy adequate to make a population comfortable with technology and able to interface with it, and the availability of sufficiently high-quality postsecondary education and training in the sciences to stock a workforce comfortable with developing, using, and maintaining technology applications.
- ***Population and demographics:*** Overall size, average age, and growth rate of the population and the relative size of different age group within a population.

[3] For a detailed discussion of the country driver and barrier assignments in Figure 3, see Silberglitt, Antón, Howell, and Wong (2006).

Figure 3
Drivers(D) and Barriers(B) in Selected Countries



NOTE: Countries were selected as representative of groups of similar nations in a single geographical area. Countries are color coded by their S&T capacity: scientifically advanced (blue), scientifically proficient (green), scientifically developing (yellow), and scientifically lagging (red). Drivers (D) and barriers (B) are as follows: (a) ICT and financing, (b) laws and policies, (c) social values, public opinion, and politics, (d) infrastructure, (e) privacy concerns, (f) use of resources and environmental health, (g) R&D investment, (h) education and literacy, (i) population and demographics, (j) governance and political stability. Technology application (TA) numbers are the same as in Figure 1: (1) cheap solar energy, (2) rural wireless communications, (3) ubiquitous information access, (4) GM crops, (5) rapid bioassays, (6) filters and catalysts, (7) targeted drug delivery, (8) cheap autonomous housing, (9) green manufacturing, (10) ubiquitous RFID tagging, (11) hybrid vehicles, (12) pervasive sensors, (13) tissue engineering, (14) improved diagnostic and surgical methods, (15) wearable computers, (16) quantum cryptography.
RAND MG-673-2

- *Governance and political stability*: Degree of effectiveness or corruption within all levels of government; the influence of governance and stability on the business environment and economic performance; and the level of internal strife and violence, as well as external aggression; number and type of security threats.

Figure 4 illustrates the overall capacity of the 29 nations in our sample to implement all the technology applications they will be able to acquire.[4] Of the seven scientifically advanced countries able to obtain all 16 applications, the United States and Canada in North America and Germany in Western Europe will also be fully capable of implementing them through 2020. Japan and South Korea in Asia, Australia in Oceania, and Israel in the Middle East will be highly capable of implementing all 16 as well. All these countries will have excellent S&T capacity, along with the highest number of drivers and lowest number of barriers.

China will fall somewhat below these top seven countries; however, it will lead the group of scientifically proficient nations able to obtain 12 applications, with a high level of S&T capacity and many drivers. Still, because it will also possess numerous barriers, China will have to deal with more challenges to implementation than the group of scientifically advanced nations will. India, Poland, and Russia—the other three scientifically proficient countries—will be somewhat less capable than China of implementing the applications they can acquire. In these countries, although the S&T capacity will be high, the number of barriers will slightly exceed the number of drivers, making it more difficult to introduce and sustain the full range of possible technology applications.

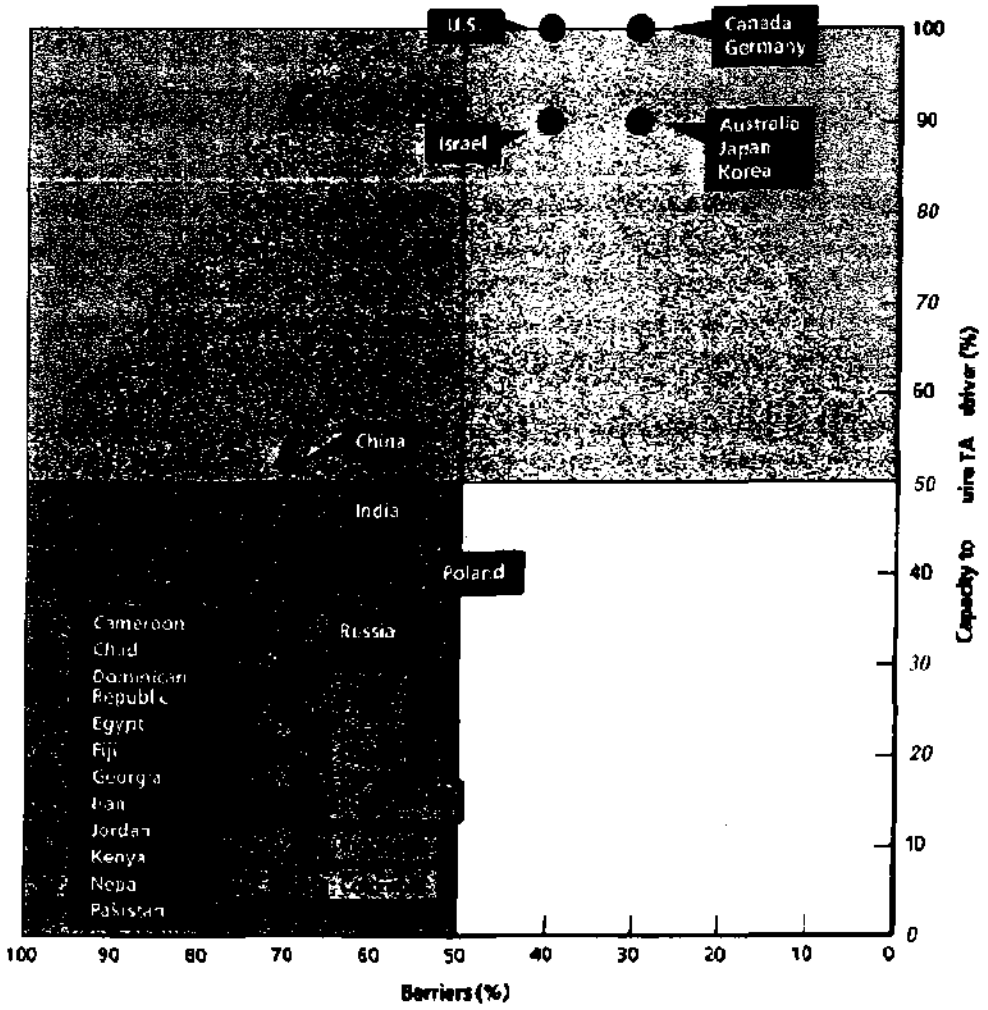
All the countries in the scientifically developing group of nations—those able to acquire nine of 16 top applications—will have even less capacity than the proficient group will to implement them beyond laboratory research, demonstrations, or limited diffusion. Brazil and Chile in South America, Mexico in North America, and Turkey in Europe will be the most capable, followed by South Africa, then Indonesia, and finally Colombia. None of these seven countries will have a high level of S&T capacity. And each will have significantly more barriers than drivers.

The nations in the scientifidly lagging group are able to obtain only five of the top 16 applications. Cameroon, Chad, and Kenya in Africa; the Dominican Republic in the Caribbean; Georgia in Europe; Fiji in Oceania; Egypt, Iran, and Jordan in North Africa and the Middle East; and Nepal and Pakistan in Asia will be the least capable of implementing these applications through 2020. With low levels of S&T capacity, these countries will also face numerous barriers and will benefit from very few drivers. It will therefore be very difficult for these countries to implement any but the simplest technology applications (see Figure 2).

---

[4] We analyzed country capacity to implement technology applications by taking into account three factors: (1) capacity to acquire, defined as the fraction of the top 16 technology applications listed for that country in Figure 1; (2) the fraction of the ten drivers for implementation appliable to that country; and (3) the fraction of the ten barriers to implementation applicable to that country. Figure 4 shows the position of each of the 29 representative countries on a plot for which the y-axis is the product of factors (1) and (2)—i.e., capacity to acquire scaled by the fraction of drivers—and the x-axis is factor (3). (Multiplying capacity to acquire by the fraction of drivers is consistent with the view that the absence of driven reduces the probability that the technology applications a country can acquire will be implemented.) Both axes are shown as percentages: The y-axis starts at 0 percent (i.e., no capacity to acquire technology appliations or drivers) and ends at 100 percent (i.e., capacity to acquire all 16 technology appliations, with all 10 drivers applicable). The x-axis starts at 100 percent (i.e., all 10 barriers are applicable) and ends at 0 percent (i.e., no barriers are applicable). This figure provides a first-order assessment of the capacity to implement technology applications, in that we applied equal weighting to all technology applications, drivers, and barriers. We recognize that specific technology applications, driven, and barriers might be more or less significant in particular countria.

Figure 4
Selected Countries' Capacity to Implement the Top 16 Technology **Applications**



NOTE: The blue quadrant indicates a high level of S&T capacity plus many drivers and few barriers; the green quadrant indicates a high level of S&T capacity with many drivers and many barriers; the yellow quadrant indicates the lack of a high level of S&T capacity plus few drivers and few barriers; the red quadrant indicates the lack of a high level of S&T capacity with more barriers than drivers.

None of the countries in our sample, regardless of their level of S&T capacity, will have low numbers of both drivers and barriers through 2020. This reflects the fact that nations cannot reduce barriers without simultaneously developing drivers and S&T resources.

The overall capacity of these representative nations to implement the technology applications they can acquire suggests the following trends:

11-L-0559/OSD/58174

- The technological preeminence of the scientifically advanced countries in North America, Western Europe, and Asia
- The emergence of China and India as rising technological powers, with the scientifically proficient countries of Eastern Europe, as represented by Poland, not far behind
- The relative slippage of Russia as a technological powerhouse
- The wide variation in technological capability among the scientifically developing countries of Southeast Asia and Latin America
- The large scientific and technological gap between the scientifically developing countries of Latin America, as well as Turkey and South Africa, and the rising technological powers, China and India
- The enormous scientific and technological gap between the scientifically lagging countries of Africa, the Middle East, and Oceania and the scientifically advanced nations of North America, Western Europe, and Asia
- The significant gap that must be filled before the scientifically lagging nations can even reach the level of proficiency.

Different Countries, Different Issues: The Capacity of Various Nations to Use Technology Applications to Address National Problems

The overall capacity of countries to implement the technology applications they can acquire provides a good general indication of the variation in how technology might change the world through *2020*. It offers a comparative perspective on which countries are likely to be able to actually put technological opportunities into practice, which will be the technological powerhouses, which will be the emerging powers, and which will still be saddled with too many obstacles to benefit from the innovations of the next 15 years. It also suggests how much progress, in general, some countries need to make to exploit the technology revolution.

But just because a country has the capacity to implement a certain technology application does not mean that it will want or need to. With distinct sets of problems and diverse profiles, different countries will continue to have different national priorities through *2020*. Because technology applications are designed to perform specific functions, they pertain only to certain problems. Consequently, not all 16 applications will be equally relevant for all countries. A country will be unlikely to invest in developing and implementing applications that will not help it achieve its most important goals.

The 16 top technology applications in our study can all help achieve at least several of the following objectives. In theory, all these goals will be important items on national agendas over the next 15 years:

- Promote rural economic development.
- Promote economic growth and international commerce.
- Improve public health.
- Improve individual health.

- Reduce the use of resources and improve environmental health.
- Strengthen the military and warfighters of the future.
- Strengthen homeland security and public safety.

Yet in practical terms, a country will give each of these objectives different priorities, depending on its state of economic and social development, internal politics, and domestic public opinion. Some countries may not even be in a position to pursue some of these goals because they have not yet achieved other, more fundamental, building blocks on which the goals rest. For example, promoting basic rural economic development may be a first step before pursuing international commerce.

Generally, a country's level of S&T capacity links up with indicators of economic and social development. By and large, countries with less S&T capacity also rank lower in the other two areas, while countries with more S&T capacity rank higher.[5] Consequently, nations with different levels of S&T capacity often share similar problems and, as a result, tend to prioritize similar objectives. Promoting rural economic development, improving public health, and reducing the use of resources and improving environmental health—all basic development goals—are usually top concerns for countries on the lowest rungs of the development ladder. More-developed countries may also give these goals prominence on their national agendas but often for different reasons and with less urgency. For example, scientifically developing countries are likely to be motivated to implement technology applications that *can* help them use resources more efficiently and clean up pollution mainly for the possible economic benefits, with environmental gains a secondary goal or spillover effect. As long as their economies are sluggish and living standards low, countries on this rung of the development ladder will not be in a position to pay up front for the long-term health gains of prioritizing environmental issues. Yet in countries whose economies are stronger and whose citizens can better afford (literally) to be concerned about the environment, public demand for cleaner, healthier surroundings and responsible stewardship of natural resources can drive the use of these applications.

Why Countries Prioritize Economic Growth

Economic growth and international commerce push nations up the development ladder. Consequently, promoting them becomes an increasingly important goal as countries build infrastructures, better educate their populations, and enter the global marketplace. For scientifically proficient countries, and even certain scientifically developing ones, driving economic growth can become a first-order concern. For scientifically advanced nations, this goal also usually takes top priority but for different reasons. The global marketplace is changeable and demanding, with new powers emerging and established ones continually vying for a competitive edge. To sustain current levels of prosperity and power, nations at the top of the develop-

[5] Compare the S&T capacity index in Appendix H of our in-depth analysis report (Silberglitt, Antón, Howell, and Wong, 2006) with the per capita gross domestic product and the Human Development Index rankings in Appendix J of the same document.

11-L-0559/OSD/58176

ment ladder must continually seek to push beyond what they already have. In this way, they can retain an advantage in the world of commerce and continue to improve the quality of life of their populations.

Countries at Various levels of Development Prioritize Strengthening the Military

Strengthening a nation's military and warfighters does not necessarily or dearly correspond to a particular position on the development ladder. Certain countries sorely lacking in the most basic living standards have been observed to funnel the majority of their national budget into military spending, given certain circumstances. The same is true for strengthening homeland security and public safety. But in general, nations lower on the development ladder are not in a position to prioritize these two concerns. Meeting the essential needs of their populations—economic growth, health, nutrition, education, infrastructure—is their most urgent objective. Scientifically proficient and advanced countries with more power and more money *can* better afford to make these goals high priorities.

individual Health as a National Priority Generally Follows Public Health

Improving individual health is by necessity a secondary goal for some nations. A country can usually only make this objective a matter of real national concern if its public health system is already functioning well and its population enjoys a high standard of living. For this reason, it is typically only a first-order goal in scientifically advanced countries. Technology applications that could help reduce infant mortality rates and increase the average life expectancy—both measures of good public health—are much more important for countries lower on the development ladder.

Countries' Capacity to Achieve Science and Technology Goals

Because national concerns tend to differ in these ways between countries with various levels of S&T capacity, particular sets of technology applications will be much more important, and their impacts much more dramatic, for certain nations than for others. But if a country were to establish a certain goal as a top priority in 2020 and resolve to address it, how capable would it be of actually implementing the applications that would enable it to do so? We looked at the scientifically lagging, developing, proficient, and advanced nations in our sample and for each one answered that question for the objectives likely to be relevant to countries at its level of S&T capacity.

11-L-0559/OSD/58177

Scientifically lagging Countries

Countries in the scientifically lagging group tend to be at the bottom of the development ladder. Promoting rural economic development, improving public health, and reducing the use of resources and improving environmental health commonly rank highest on national agendas. The populations of many of the countries in our sample lack access to clean water and basic sanitation. Extreme poverty in rural areas can spur massive urban migration and discontent. Disease is often widespread. Essential resources, such as water and arable land, are frequently misused and rapidly dwindling. In many of these countries, the pervasive use of wood and coal-burning stoves is a major problem, generating indoor air pollution that has severe costs for the health of women and children in particular. The need for clean, cheap energy sources is urgent. With rapidly growing populations, low levels of literacy, and great disparities in wealth and power, these countries also frequently need to promote economic growth and international commerce. Stronger national economies would create jobs and generally improve the standard of living. But because very few countries at this level of S&T capacity are active participants in the global economy and because barriers are so abundant, this goal often takes a backseat to more basic development objectives.

All five of the technology applications these countries have the capacity to acquire—cheap solar energy, rural wireless communications, GM crops, filters and catalysts, and cheap autonomous housing—could help them both promote economic development in rural areas and improve public health. Solar energy would provide power for pumping water and irrigating crops, significantly improving agriculture and offering alternatives to subsistence farming (e.g., industrial cooperatives). It would also provide the power to run the filters that purify water supplies and the appliances to store medications. Better and more accessible water, food, and medicine would in turn improve public health. Providing lighting for homes and buildings and power for computers, solar energy could enable rural populations to participate in cottage industries and educate their children, growing the rural economy. Wireless communications would open the floodgate to economic development in remote areas, facilitating both commerce and education. Access to medical information and records would also significantly improve public health. GM crops would make food both more available and more nutritional, reducing the malnutrition and infant mortality that are so pervasive in these countries. Filters and catalysts would enable local populations to make unfit water sources usable and to clean wastewater for reuse. Cheap self-sufficient housing would provide rural populations with basic energy and shelter at minimal cost.

All five applications could also help these countries use fewer resources and improve environmental health. Cheap solar energy would provide energy without fuel combustion, reducing environmental emissions. Solar energy and cheap autonomous housing might help reduce the indoor air pollution generated by wood- and coal-burning stoves. Less reliance on firewood would promote healthy forests that would help control soil erosion; improve the quality of underground water; reduce sediment flows into rivers; and supply food, medicine, and construction materials. Rural wireless communications could help local and national governments monitor resources, environmental conditions, and pollution. GM crops would help conserve the natural resources used for agriculture and eliminate or reduce the magnitude of sources of pollution. Filters and catalysts would help conserve water and reduce waste streams.

11-L-0559/OSD/58178

Of the numerous technology applications that *can* promote economic growth in general, scientifically lagging nations will be able to acquire only two: cheap solar energy and rural wireless communications. Their benefits in this context lie mainly in helping to build more vital and productive rural economies that will be better able to contribute to their national economy and boost their global competitiveness.

If implemented broadly and sustainably, these technology applications have the potential to dramatically improve the quality of life of the vast majority of people living in poverty in these countries. But in practical terms, the nations in the scientifically lagging group will face considerable challenges in implementing any of the five—despite the fact that they place the least demand on S&T capacity. Drivers are scarce and barriers abundant in these countries. Unless the barriers are addressed, the lack of financial resources; institutional, physical, and human capacity; open markets; and transparent and stable governments will make it very difficult for the countries that could most benefit from these applications to put them to use.

Scientifically Developing Countries

Nations in the scientifically developing group commonly face many of the same problems as those in the scientifically lagging group. For example, in most of these countries, a significant percentage of the population is rural, with many people living at or below the poverty line. Outside the capital, infrastructure is typically poor. Provincial areas commonly lack cheap and stable electricity, a clean and dependable water supply, basic health services, good roads, and schools. As a result, urban populations in many of these nations are growing rapidly as people flock to the cities in hope of better economic opportunities. Consequently, promoting rural economic development is usually a top concern, to reduce rural poverty, soothe discontent, and slow urban migration.

Improving public health is often another leading goal. Because people in many of these countries frequently lack clean water and good sanitation, waterborne diseases are common and generally spread easily. The largely rural populations usually have little access to health care. In nations where cities are growing and people are traveling more frequently both domestically and abroad, the threat of epidemics can increase. In South Africa, for example, AIDS is taking a tremendous toll. Resources can present another major problem. In many nations at this level of S&T capacity, economic activities are further depleting already scarce natural resources and spoiling the environment. At the same time, energy prices are rising. For these reasons, it is imperative for many of them to use their resources more efficiently and improve the health of the environment.

Many of the countries with this level of S&T capacity frequently put promoting economic growth and international commerce higher on national agendas than scientifically lagging countries typically do (but still usually much lower than nations in the proficient and advanced groups). Most of them very much need to manage urban migration, create jobs, and expand the middle class. For countries that are to some degree actively exporting products to the global marketplace (e.g., Chile and Mexico), increasing economic competitiveness is a realistic development goal. Colombia is a clear exception in this regard; its economy is much less involved in international trade than most other nations in this group. The heightened politi-

11-L-0559/OSD/58179

cal instability in some of the countries at this level could lead them to give increased prominence to strengthening homeland security and public safety. For example, in Colombia and Indonesia, political coups and military insurgencies are an ongoing threat.

Cheap solar energy, rural wireless communications, GM crops, filters and catalysts, and cheap autonomous housing could help scientifically developing nations promote economic development in rural areas, for the same reasons as in the scientifically lagging countries. These five, plus two others—rapid bioassays and green manufacturing—could help improve public health as well. The ability to use bioassays to quickly screen for diseases would enable governments to prevent epidemics. It would also increase the probability of correctly prescribing medications, decreasing resistance to antibiotics and other drugs. Reducing the volume of toxic materials in the environment produced by conventional manufacturing processes would improve public health.

Cheap solar energy, rural wireless communications, GM crops, filters and catalysts, green manufacturing, and hybrid vehicles could enable nations in this group to reduce the use of resources and improve environmental health. Again, the benefits would be the same as for the scientifically lagging countries. In addition, green manufacturing would diminish waste streams, allowing energy, water, and land to be used more efficiently; cut down pollutants in the environment; and reduce the burden on local governments of cleaning up polluted areas. Hybrid vehicles would significantly improve air quality, particularly in smog-ridden urban areas in these countries, where emissions are not tightly controlled. This problem is in part a result of urban migration. By addressing it, these countries would make it more appealing to move to the cities, which would allow the resulting economic growth without the negative environmental impact.

As in the lagging countries, cheap solar energy and rural wireless communications could help scientifically developing nations promote economic growth and international commerce. Rapid bioassays and ubiquitous RFID tagging, which nations at this level of S&T capacity can acquire as well, could be equally useful. Rapid bioassays would provide a means of ensuring that people can move safely across borders to conduct business, because it would allow governments to detect unintended transport of infectious disease more effectively. RFID tagging could enhance performance of retail industries, enabling greater control of inventories throughout the supply chain and making marketing more efficient.

Finally, for any country in this group that resolves to strengthen homeland security and public safety, rural wireless communications, rapid bioassays, filters and catalysts, and cheap autonomous housing could all help toward this end. Rural wireless communications would allow law enforcement and emergency response personnel to collect information from remote locations to prevent or respond to terror attach, internal insurgencies, and disasters. Personnel on the scene would also be able to rapidly transfer information about the incident and response to local authorities. Rapid bioassays could help experts determine types of infections resulting from attacks, along with appropriate response measures. Filters and catalysts would provide potable water when water supplies are not safe. Cheap autonomous housing could provide temporary living quarters for relief workers and people made homeless by an incident.

Scientifically developing countries will vary significantly in their capacity to put technology applications into practice through 2020. Brazil, Chile, Mexico, and Turkey will be most

capable of implementing relevant sets of applications (sometimes even on par with Russia in the profiaent group). But compared with most of the proficient and advanced countries, their level of capacity will still be very low. South Africa will have even less capacity, and Colombia and Indonesia will have little more than that of the scientifically lagging countries. Overall, nations in this group will be most able to implement the applications that would spur the development of rural economies and reduce the use of resources. They will be somewhat less able to implement applications that could serve to improve public health. South Africa, Colombia, and Indonesia in particular may be severely impaired by the plethora of barriers they face. In terms of promoting economic growth, all the countries in this group will face considerable implementation challenges, and their capacity will be extremely low. These countries may develop more capacity if current positive economic and development trends continue, but without quality infrastructure beyond metropolitan areas, the use of relevant applications may be significantly limited. Finally, nations that aspire to strengthen homeland security will also have very limited capacity to implement the applications that can help in this area.

Scientifically Proficient Countries

Nations in the scientificallyprofiaent group face a dynamic mix of problem. Promoting economic development and international commerce is often a top priority for countries with this level of S&T capacity but for very diverse reasons. The populations of China and India, for example, are quite large and continually growing. These countries urgently need to feed their many people, create jobs, and sustain wide-scale economic development. Yet while Poland and Russia have much smaller populations, economic growth is no less a concern. In the decade following the dissolution of the Soviet Union, Russia has encountered considerable economic difficulties. Although its population is shrinking in real terms, unemployment is high. The exodus of Russian scientists, engineers, and other professionals beginning in the 1990s has weakened the country's institutional and human capacity in science, health, and administration. Poland, as a relatively recent member of the European Union, is in a very different situation: It needs to bring its economy in line with EU standards.

In China and India, a significant fraction of the population is rural and impoverished. The rural economy is not much different from that of scientifically lagging and developing countries: Rapid economic growth is largely confined to urban areas, and rural and urban populations have great disparities in income, as well as health and education. In China in particular, the income gap is widening. Consequently, for both these nations, promoting rural economic development to reduce rural poverty is a much more pressing concern than it is for countries like Poland and Russia—although they still retain a national focus on promoting overall economic growth.

In many scientifically proficient countries, reducing the use of resources and improving environmental health is also among the most important objectives. Valuable assets such as arable land and fresh water—already scarce—are lost every day to land degradation, industrial pollution, and urban growth. In addition, many of these countries are at a level of development at which their populations are becoming increasingly aware of the high economic and health costs of environmental destruction and pollution.

11-L-0559/OSD/58181

For countries in the proficient group that lack clean water, electricity, and good sanitation in certain areas, improving public health is still a first-order concern. Countries at this level can suffer from the same public health issues as countries lower on the development ladder. Contagious diseases can spread easily, making epidemics a significant threat. Infant mortality rates can exceed international standards, and life expectancies can be lower than desirable. Yet at the same time, many countries with this level of S&T capacity are approaching the point on the development ladder where they can begin to aspire to improve individual health as well.

Strengthening the military and warfighters of the future is often a prominent concern for countries in the scientifically proficient group. For example, as a new EU member, Poland needs to modernize its military for greater compatibility with its new security partners. Russia wants to preserve its former status as a world military power. Strengthening homeland security and public safety can also be a relatively high priority. Russia, for instance, faces considerable internal security problems, such as organized crime and armed opposition in Chechnya.

As in the scientifically lagging and developing countries, cheap solar energy, rural wireless communications, rapid bioassays, and ubiquitous RFID tagging could promote economic growth and international commerce in the scientifically proficient countries. In addition, these countries will be able to acquire quantum cryptography, which, in providing a means of transferring information in a secure, reliable manner, could further aid economic development. This application would offer attractive benefits to banking and finance organizations, for example. Just as in the lagging and developing countries, cheap solar energy, rural wireless communications, GM crops, filters and catalysts, and cheap autonomous housing could enable those scientifically proficient nations that make it a priority to do so to promote rural economic development.

In terms of improving public health, the same applications that the developing countries have the S&T capacity to acquire toward this end—cheap solar energy, rural wireless communications, GM crops, filters and catalysts, cheap autonomous housing, rapid bioassays, and green manufacturing—could help the proficient nations as well. In addition, these countries have the S&T capacity to acquire targeted drug delivery, which is likely to eventually become such a widespread application that it will enable cancers and other diseases to be treated on site in remote areas, with significant benefits to public health. Similarly, they will be able to acquire the same appliations as the developing countries to reduce the use of resources and improve environmental health: cheap solar energy, rural wireless communications, GM crops, filters and catalysts, green manufacturing, and hybrid vehicles.

The benefits to public health from cheap solar energy, rural wireless communications, GM crops, rapid bioassays, filters and catalysts, cheap autonomous housing, and green manufacturing would also better the health of individuals. In addition, targeted drug delivery, by limiting damage to healthy cells and tissues when administering therapies, would enable less-invasive, debilitating treatments and better outcomes. Improved diagnostic and surgical methods would make diagnoses more precise and surgical procedures more effective, and reduced recovery times would give a wider group of patients the option of surgery.

Rural wireless communications, rapid bioassays, filters and catalysts, cheap autonomous housing, ubiquitous RFID tagging, and quantum cryptography would help these proficient nations strengthen their military and warfighters. Military command, control, and commu-

11-L-0559/OSD/58182

nication could be improved with rural wireless communications. Rapid bioassays would allow military medical personnel to identify weapon-grade pathogens in the environment. Filters and catalysts could be employed in situations involving chemical or biological contaminants. Cheap autonomous housing could provide personnel on the ground with improved living quarters. RFID tagging would enable command centers to track the location and conditions of personnel engaged in operations. Quantum cryptography could safeguard tactical communications.

These technology applications could also enhance homeland security and public safety. The benefits would be the same as for the scientifically developing countries. Quantum cryptography could protect critical data and networks from hackers and attackers. In addition, targeted drug delivery, also obtainable by the proficient nations, could expedite responses to chemical and biological attacks and minimize casualties.

In terms of capacity to implement, China consistently has the most, followed by India, and then Poland. In every case, Russia trails, with the least capacity in the group to implement the relevant applications for any of the problem areas. As a whole, these countries have a fairly high capacity to put applications into practice to promote rural economic development and to reduce the use of resources and improve environmental health. Their ability to improve public health will be only slightly less than that. In the first two cases, China approaches the capacity level of several of the scientifically advanced countries, with India not far behind. Russia, in contrast, has no more capacity than the most capable of the scientifically developing nations. The scientifically proficient countries will be moderately capable of implementing the applications that would improve individual health. Implementation capacity will still be substantial but somewhat less for strengthening the military and warfighters and increasing homeland security and public safety. As much as these countries *may* need to achieve this goal, promoting economic growth and international commerce will be the most challenging of all. The capacity of the proficient countries to implement the relevant applications toward this *end* will be less than for all the other goals. There will be a very large gap, for example, between their ability to use technology applications to develop their international economy and that to improve public health or reduce the *use* of resources.

Scientifically Advanced Countries

Nations with the highest level of S&T capacity sit atop the development ladder. Their leading concerns are usually quite different from those of countries with less capacity because they have already achieved the more basic development objectives prerequisite to focusing on those goals. When a national priority is the same, a scientifically advanced country often has very different motivations from those of a lagging or developing one. Promoting economic *growth* and international commerce is a case in point. The nations in this group are already world economic leaders; their problem is usually to maintain or capture even more of a competitive advantage in an aggressive global market. South Korea, for example, has to deal with a China rapidly gaining S&T capacity and emerging as a commanding economic force. It also needs to gain ground on Japan, the United States, and other economic superpowers. Other advanced countries are contending with skyrocketing health *costs*. With rapidly aging populations, they need to increase the productivity of their future workforce to finance cutting-edge medical treatment.

Aging populations and a high standard of living also put improving individual health at the head of the national agenda in many scientifically advanced countries. Enhancing public health is often an objective, too, but usually a much less prominent one, given that these nations have already achieved very effective public health systems and will gain only marginal benefits. Exceptional circumstances, such as a need to provide emergency medical relief should a disaster strike, usually drive this goal.

Energy can be very costly in some countries in this group. At the same time, public awareness of the negative impacts of pollution and inefficient management of resources is often high. Consequently, citizens in nations at this level of S&T capacity frequently demand cleaner environments and more responsible consumption of natural assets. This can make reducing the use of resources and improving environmental health an important national objective.

Strengthening homeland security and public safety is a principal concern for some nations at this level of S&T capacity. While some nations have had terrorism prevention on their national agendas for a long time, this issue has become more prominent as a number of advanced countries have had recent experiences with terrorism—the United States with the attacks of September 11,2001, and Spain and the United Kingdom with train bombings, for instance. Public demand in such countries to reduce internal security threats can run very high. Making the military and warfighters of the future stronger is often among their foremost concerns as well, for varying reasons. Both Israel and South Korea face potential threats from hostile neighboring countries; the United States seeks to maintain its global military predominance.

Just as for countries with less S&T capacity that can acquire these applications, cheap solar energy, rural wireless communications, rapid bioassays, ubiquitous RFID tagging, and quantum cryptography could also help the scientifically advanced nations promote economic growth and international commerce. But these countries will be able to acquire more sophisticated applications as well—ubiquitous information access, pervasive sensors, tissue engineering, and wearable computers. Agile access to information could improve productivity, create new avenues for conducting business on the run, and expand global Internet commerce. Pervasive sensors could help manage logistics, determine market demand, and safeguard electronic transactions. Expertise in sensor development and data management would expand a company's commercial opportunities. The technical or medical expertise to engineer tissue, the capability to manufacture it, or any related intellectual property rights would have the same effect. Wearable computers would open exciting new doors for economic sectors based on Computation.

To improve individual health, the scientifically advanced nations could acquire cheap solar energy, rural wireless communications, GM crops, rapid bioassays, filters and catalysts, targeted drug delivery, cheap autonomous housing, green manufacturing, tissue engineering, and improved diagnostic and surgical methods. In addition, ubiquitous informarion access would make health information available anywhere and anytime and facilitate information sharing between patients and providers. Tissue engineering would minimize medical complications and recurrences by providing new ways of treating wounds, disease, and injuries. It might also permit classes of chronically ill or formerly untreatable individuals to join the workforce. Wearable computers could enable patients or their doctors to continuously moni-

tor patients' health status. Along with the relevant applications obtainable by countries lower on the development ladder, ubiquitous information access would also contribute to improving public health at this level of S&T capacity.

All the applications that could help reduce the use of resources and improve environmental health would be available to the advanced nations: cheap solar energy, rural wireless communications, GM crops, filters and catalysts, green manufacturing, and hybrid vehicles. To strengthen homeland security and public safety, advanced countries will be able to acquire rural wireless communications, rapid bioassays, filters and catalysts, targeted drug delivery, cheap autonomous housing, and quantum cryptography. In addition, ubiquitous access to information would facilitate information sharing and increase the abiiity to track individual's activities. Pervasive sensors would provide governments with a powerful tool for law enforcement. Together with miniaturized communications devices, wearable computers could enable personnel to send and receive instructions in conflict situations.

Rural wireless communications, rapid bioassays, filters and catalysts, cheap autonomous housing, ubiquitous RFID tagging, and quantum cryptography could all help strengthen the military and warfighters. Beyond these, ubiquitous information access could improve combat planning and execution, logistics, and support functions. Pervasive sensors could be implemented in tactical situations to provide updated intelligence and targeting. The increased ability to exchange instructions provided by wearable computers would be a significant advantage in military situations as well.

For any of the national objectives that they choose to prioritize, all the scientifically advanced countries will be highly capable of implementing the full set of relevant technology applications. With abundant drivers, relatively few barriers, and unrivaled S&T ability, these advanced countries are the only ones among our sample likely to be able to implement, on a broad scale, the applications that demand the highest level of infrastructure and institutional, physical, and human capacity.

The Science and Technology Path to 2020

As the global technology revolution proceeds over the next 15 years, it will follow a trajectory with certain defining characteristics.

Accelerated Technology Development Will Continue

We see no indication that the rapid pace of technology development will slow in the next decade and a half. Neither will the trends toward multidisciplinarity and the increasingly integrated nature of technology applications reverse. Indeed, most of the top 16 technology applications for 2020 *draw* from at least three of the areas addressed in this study-biotechnology, nanotechnology, materials technology, and information technology—and many involve all four. Underlying these trends are global communications (Internet connectivity, scientific conferences, and publications) and instrumentation advances (the development and cross-fertilization of ever more-sensitive and selective instrumentation).

Countries Will Benefit in Considerably Different Ways

Over the next 15 years, certain countries will possess vastly different S&T capacities. They will also vary considerably in the institutional, human, and physical capacity required to develop drivers for implementing technology applications and overcome barriers. Consequently, the global technology revolution will play out quite differently among nations.

The scientifically advanced countries of North America, Western Europe, and Asia, along with Australia, are likely to gain the most, as exemplified by their capacity to acquire and implement all the top 16 example technology applications. For whatever problems and issues that rank high on their national agendas, they will be able to put into practice a wide range of applications to help address them.

If they can address multiple barriers to implementation, emerging economies, such as China and India in Asia and Brazil and Chile in South America, will be able to use technology applications to support continued economic growth and human development for their populations. Emerging technological powers China and India will have the best opportunity to approach the ability of the scientifically advanced countries in use applications to achieve national goals. The scientifically proficient countries of Eastern Europe, as represented by Poland, appear to be poised next in line behind China and India. In contrast, it looks likely that Russia's capacity to implement technology applications will continue to deteriorate, with the most advanced of the scientifically developing countries (represented by Brazil, Chile, Mexico, and Turkey) potentially overtaking her.

The scientifically lagging countries around the world will face the most severe problems — disease, lack of clean water and sanitation, and environmental degradation. They will also likely lack the resources to address these problems. Consequently, they stand to gain the most from implementing the *2020* technology applications. However, to do so, these nations will need to make substantial inroads in building institutional, physical, and human capacity. The efforts and sponsorship of international aid agencies and other countries *may* assist in these efforts, but the countries themselves will have *to* improve governance and achieve greater stability before they will be able to benefit from available S&T innovations.

Action Will Be Required to Maintain a High Level of S&T Capacity

The accelerating pace of technology development and the growing capacity of emerging economies to acquire and implement technology applications will make economic security a moving target even for the most advanced nations. If countries are to stay ahead in their capacity to implement applications, they will need to make continuing efforts to ensure that laws, public opinion, investment in R&D, and education and literacy are drivers for, and not barriers to, technology implementation. In addition, they will have to build and maintain whatever infrastructure is needed to implement the applications that will give them a competitive advantage.

Countries That Lack Capacity Will Need to Build It

For scientifically lagging and developing countries, implementing technology applications to address problems and issues will not be primarily about technology, or even S&T capacity. The greater challenge they will face is the lack of institutional, human, and physical capacity,

11-L-0559/OSD/58186

including effective and honest governance. Development results from improvements in economic growth, social equity, health and the environment, public safety and security, and good governance and stability. The countries with the best performance in these indicators of development will most likely have the greatest institutional, human, and physical capacity to implement technology applications. Less-developed countries that hope to benefit from technology applications will have to improve their performance in these development areas to build the requisite institutional, human, and physical capacity.

Certain Technology Applications Will Spark Heated Public Debate

Several of the top 16 technology applications will raise significant public policy issues that will trigger strong, and sometimes conflicting, reactions and opinions between countries, regions, and ethnic, religious, cultural, and other interest groups. Many of the most controversial applications will involve biotechnology (e.g., GM crops). Others, such as pervasive sensors and certain uses of RFID implants to track and identify people, will potentially have provocative implications for personal privacy and freedom. Yet any controversy that flares up will probably not be the same around the world. A technology application that raises extremely divisive questions in one country may cause no stir at all in another because of different social values.

Consideration Could Head Off Problems and Maximize Benefits

Public policy issues will need to be resolved before a country will be able to realize the full benefits of a technology application. Not all technology may be good or appropriate in every circumstance, and just because a country has the capacity to implement a technology application does not necessarily mean that it should. Ethical, safety, and public concerns will require careful analysis and consideration. Public policy issues will need to be debated in an environment that seeks to resolve conflicts. Such public debate, in addition to being based on sound data, will need to be inclusive and sensitive to the range of traditions, values, and cultures within a society. In some cases, issues will remain after the debate, slowing or even stopping technology implementation. Sometimes the reasons clearly will be good (e.g., when safety concerns cannot be adequately addressed), and sometimes the result will simply reflect collective decisionmaking determining what a particular society wants and does not want.

A Few Words in Conclusion

As the global technology revolution proceeds, market forces will moderate and vector its course, its technology applications, and their implementation. Predicting the net effect of these forces is predicting the future—wrought with all the difficulties of such predictions. But current technology trends have substantial momentum behind them and will certainly be the focus of continued R&D, consideration, and debate over the next 15 years. By *2020,* countries will be applying many of these technologies in some guise or other and the effects will be significant, changing lives across the globe.

Selected Bibliography

For a more detailed discussion of the material described in this report, including further documentation and references, the reader is strongly encouraged to review our in-depth analyses in the following companion report:

Silberglitt, Richard, Philip S. Antón, David R. Howell, and Anny Wong, with Natalie Rose Gassman, Brian A. Jackson, Eric Landree, Shari Lawrence Pfleeger, Elaine M. Newton, and Felicia Wu, *The Global Technology Revolution 2020—In-Depth Analyses: Bio/Nano/Materials/Info Trends, Drivers, Barriers, and Social Implications*, Santa Monica, Calif.: RAND Corporation, TR-303-NIC, 2006. Online at http://www.rand.org/pubs/technical_reports/TR303/index.html.

Technology Foresight

Applewhite, Ashton, "The View from the Top: Forty Leading Lights Ponder Tech's Past and Consider Its Future," *IEEE Spectrum*, Vol. 41, No. 11, November 2004, pp. 36–51.

Christensen, Clayton M., *The Innovator's Dilemma*, New York: HarperCollins, 2003.

Glenn, Jerome C., and Theodore J. Gordon, *Future S&T Management Policy Issues: 2025 Global Scenarios*, Washington, D.C.: Millennium Project, American Council for the United Nations University, undated. Online at http://www.acunu.org/millennium/scenarios/st-scenarios.html (as of March 2006).

———, "Millennium 3000 Scenarios," excerpt from *State of the Future at the Millennium*, Washington, D.C.: Millennium Project, American Council for the United Nations University, undated. Online at http://www.acunu.org/millennium/m3000-scenarios.html (as of March 2006).

———, *2004 State of the Future*, executive summary, Washington, D.C.: Millennium Project, American Council for the United Nations University, 2004.

National Intelligence Council, *Global Trends 2015: A Dialogue About the Future with Nongovernment Experts*, Central Intelligence Agency, NIC 2000-02, 2000. Online at http://www.cia.gov/cia/reports/globaltrends2015/ (as of March 2006).

———, *Mapping the Global Future: Report of the National Intelligence Council's 2020 Project*, Central Intelligence Agency, NIC 2004-13, 2004. Online at http://www.cia.gov/nic/NIC_globaltrend2020.html (as of March 2006).

Salo, Ahti, and Kerstin Cuhls, "Technology Foresight: Past and Future," *Journal of Forecasting*, Vol. 22, Nos. 2–3, March–April 2003, pp. 79–82.

11-L-0559/OSD/58188

Technology Trends and Applications

Anderson, Robert H., Philip S. Antón, Steven C. Bankes, Tora K. Bikson, Jonathan P. Caulkins, Peter J. Denning, James A. Dewar, Richard O. Hundley, and C. Richard Neu, *The Global Course of the Information Revolution: Technological Trends—Proceedings of an International Conference*, Santa Monica, Calif.: RAND Corporation, CF-157-NIC, 2000. Online at http://m.randorg/pubs/conf_proceedings/CF157/index.html (as of March 2006).

Antón, Philip S., Richard Silberglitt, and James Schneider, *The Global Technology Revolution: Bio/Nano/Materials Trends and Their Synergies with Information Technology by 2015*, Santa Monica, Calif.: RAND Corporation, MR-1307-NIC, 2001. Online at http://www.rand.org/pubs/monograph_reports/MR1307/index.html (as of March 2006).

Cohen, Smadar, and Jonathan Leor, "Rebuilding Broken Hearts," *Scientific American*, Vol. 291, No. 5, November 2004, pp. 44–51. Online at http://www.sciam.com/article.cfm?articleID=0007428C-6DD4-1178-AD6883414B7F0000 (as of March 2005).

Hundley, Richard O., Robert H. Anderson, Tora K. Bikson, and C. Richard Neu, *The Global Course of the Information Revolution: Recurring Themes and Regional Variations*, Santa Monica, Calif.: RAND Corporation, MR-1680-NIC, 2003. Online at http://www.rand.org/pubs/monograph_reports/MR1680/index.html (as of March 2006).

International Roadmap Committee, "Emerging Research Devices," in *International Technology Roadmap for Semiconductors, 2003 Edition*, San Jose, Calif.: Semiconductor Industry Association, 2003. Online at http://publicitrs.net/Files/2003ITRS/Home2003.htm (as of March 2006).

———, *International Technology Roadmap for Semiconductors: 2004 Update*, San Jose, Calif.: Semiconductor Industry Association, 2004. Online at http://www.itrs.net/Common/2004Update/2004Update.htm (as of March 2006).

Langer, Robert, and David A. Tirrell, "Designing Materials for Biology and Medicine," *Nature*, Vol. 428, No. 6982, April 1, 2004, pp. 487–492.

National Nanotechnology Initiative, "What Is Nanotechnology?" Web page, undated, http://www.nano.gov/html/facts/whatIsNano.html (as of March 2006).

Royal Academy of Engineering, *Nanoscience and Nanotechnologies: Opportunities and Uncertainties*, London, 2004. Online at http://www.raeng.org.uk/policy/reports/nano (as of March 2006).

U.S. Department of Commerce, Technology Administration, *A Survey of the Use of Biotechnology in Industry*, October 2003. Online at http://www.technology.gov/reports/Biotechnology/CD120a_0310.pdf (as of March 2006).

U.S. National Science Foundation and U.S. Department of Commerce, *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology and Cognitive Science*, Arlington, Va., June 2002. Online at http://www.wtec.org/ConvergingTechnologies (as of March 2006).

Country Capacity to Acquire and Implement Technology Applications

Bhargava, Vinay, and Emil Bolongaita, *Challenging Corruption in Asia: Case Studies and a Framework for Action*, Washington, D.C.: The World Bank, 2004.

Central Intelligence Agency, *The World Factbook*, July 14, 2005. Online at http://www.cia.gov/cia/publications/factbook/ (as of March 2006).

Freedom House, *Freedom in the World 2005: The Annual Survey of Political Rights and Civil Liberties*, 2004. Online at http://www.freedomhouse.org/template.cfm?p (as of March 2006).

Kaufman, Daniel, and Aart Kraay, "Governance and Growth: Causality Which Way?—Evidence for the World, in Brief," The World Bank, February 2003. Online at http://www.worldbank.org/wbi/governance/pdf/growthgov_synth.pdf (as of March 2006).

Kaufman, Daniel, Aart Kraay, and Massimo Mastruzzi, *Governance Matters IV: Governance Indicators for 1996–2004*, Washington, D.C.: World Bank Institute, May 9, 2005. Online at http://www.worldbank.org/wbi/governance/pubs/govmatters4.html (as of March 2006).

Transparency International, "Transparency International Global Corruption Barometer," July 3, 2003. Online at http://www.transparency.org/policy_and_research/surveys_indices (as of March 2006).

———. Corruption Perception Index 2005. Online at http://ww1.transparency.org/cpi/2005/cpi2005_infocus.html (as of March 2006).

Wagner, Caroline, Irene Brahmakulam, Brian Jackson, Anny Wong, and Tatsuro Yoda, *Science and Technology Collaboration: Building Capacity in Developing Countries*, Santa Monica, Calif.: RAND Corporation, MR-1357.0-WB, 2001. Online at http://www.rand.org/pubs/monograph_reports/MR1357.0/index.html (as of March 2006).

Wilson, Ernest J., *The Information Revolution and Developing Countries*, Cambridge, Mass.: MIT Press, 2004.

Wong, Anny, Aruna Balakrishnan, James Garulski, Thor Hogan, Eric Landree, and Maureen McArthur, *Science and Technology Research and Development Capacity in Japan: Observations from Leading U.S. Researchers and Scientists*, Santa Monica, Calif.: RAND Corporation, TR-211-MRJ, 2004. Online at http://www.rand.org/pubs/technical_reports/TR211/index.html (as of March 2006).

Problems and Issues

Board on Global Health and Institute of Medicine, *Microbial Threats to Health: Emergence, Detection, and Response*, Washington, D.C.: National Academies Press, 2003. Online at http://www.nap.edu/books/030908864X/html/ (as of March 2006).

Cohen, Desmond, "Poverty and HIV/AIDS in Sub-Saharan Africa: Issue Paper No. 27, United Nations Development Programme, undated. Online at http://www.undp.org/hiv/publications/issues/english/issue27e.html (as of March 2006).

11-L-0559/OSD/58190

Food and Agriculture Organization of the United Nations, *The State of Food and Agriculture, 2003–2004—Agricultural Biotechnology: Meeting the Needs of the Poor?* Rome, Italy: United Nations, 2004. Online at http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/006/Y5160E/Y5160E00.htm (as of March 2006).

National Research Council, *Review of the Research Program of the Partnership for a New Generation of Vehicles: Seventh Report*, Washington, D.C.: National Academy Press, 2001.

———, *The Hydrogen Economy Opportunities, Costs, Barriers, and R&D Needs*, Washington, D.C.: National Academies Press, 2004.

Pew Initiative on Food and Biotechnology, *Bugs in the System? Issues in the Science and Regulation of Genetically Modified Insects*, Washington, DC: Pew Charitable Trusts, 2004. Online at http://www.pewtrusts.com/pdf/pifb_bugs_012204.pdf (as of March 2006).

Sustainable Mobility Project, *Mobility 2030: Meeting the Challenges to Sustainability*, Geneva, Switzerland: World Business Council for Sustainable Development, 2004. Online at http://m.wbcsd.org/Plugins/DocSearch/details.asp?DocTypeId=25&ObjectId=NjA5NA&URLBack=%2Ftemplates%2FTemplateWBCSD2%2Flayout%2Easp%3Ftype%3Dp%26MenuId%3DMjYz%26doOpen%3D1%26ClickMenu%3DLeftMenu (as of March 2006).

U.S. Department of Energy, "Basic Research Needs for the Hydrogen Economy," Basic Energy Sciences Workshop on Hydrogen Production, Storage, and Use, Rockville, Md., May 13–15, 2003. Online at http://www.sc.doe.gov/bes/reports/abstracts.html#NHE (as of March 2006).

Woodward, John D., Katharine Watkins Webb, Elaine M. Newton, Melissa Bradley, David Rubenson, Kristina Larson, Jamb Lilly, Katie Smythe, Brian K. Houghton, Harold Alan Pincus, Jonathan M. Schachter, and Paul Steinberg, *Army Biometric Applications: Identifying and Addressing Sociocultural Concerns*, Santa Monica, Calif.: RAND Corporation, MR-1237-A, 2001. Online at http://www.rand.org/pubs/monograph_reports/MR1237/index.html (as of March 2006).

World Health Organization, "Water-Related Diseases," Web page, undated, http://www.who.int/water_sanitation_health/diseases/oncho/en/ (as of March 2006).

———, *Emerging Issues in Water and Infectious Diseases*, Geneva, Switzerland, 2003. Online at http://www.who.int/water_sanitation_health/emerging/emergingissues/en/ (as of March 2006).

———, *Avian Influenza: Assessing the Pandemic Threat*, Geneva, Switzerland, 2005.

———, Food Safety Department, *Modern Food Biotechnology, Human Health and Development*, Geneva, Switzerland, 2005. Online at http://www.who.int/foodsafety/biotech/who_study/en/ (as of March 2006).

Wu, Felicia, and William P. Butz, *The Future of Genetically Modified Crops: Lessons from the Green Revolution*, Santa Monica, Calif: RAND Corporation, MG-161-RC, 2004. Online at http://www.rand.org/pubs/monographs/MG161/index.html (as of March 2006).

11-L-0559/OSD/58191

DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
3030 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-3030

7/14 0857

18 JUL 2006

400,112

MEMORANDUM FOR DEPUTY SECRETARY OF DEFENSE

SUBJECT: "The Global Technology Revolution 2020" by RAND

In accordance with your 10 July request we have reviewed the 12 June snowflake on the subject report and Mr. Marshall's response. The DDR&E Team is very familiar with the RAND report and the preceding 2001 report. We feel that the Rand reports have been a very useful addition to the evaluative and speculative literature on technological implications. We agree with Mr. Marshall that the report itself is directed toward more global socio-economic issues appropriate to its National Intelligence Council mandate rather than DoD themes.

All the technology areas covered in the report are currently subject to DoD research investment. As an integral part of research planning we do consider the potential beneficial and negatively disruptive consequences of novel technologies as well as foreign development and applications trends. Recent Research & Engineering net assessments in conjunction with the intelligence community on nanotechnology, energetic materials, and directed energy technology have been done with such a national defense focus. We have used the National Research Council (NRC) to help us specifically look at technology opportunities and impacts. For example, NRC studies and workshops have evaluated the potential impact of nanomaterials associated with both technology opportunity and surprise. One consistent theme of all these studies is the critical need to maintain a healthy science and technology infrastructure in terms of both personnel and facilities. This conclusion and the data and justification behind it have been an indispensable aid in our educational workforce initiatives and research guidance. We recognize the possible disruptive potential posed by foreign technology and the opportunities presented by cooperation and the globally beneficial potential of higher technology and consequent productivity. In order to more efficiently follow foreign technology, we have established the Global Technology Knowledge Base, which includes country assessments and is searchable through the Defense Research & Engineering Portal.

13 Jul 06

12 Jul 06

11-L-0559/OSD/58192

OSD 10055-06

7/14/2006 1:10:35 PM

From a DoD technology standpoint, I believe we are diligently examining the areas emphasized by the report and many other DoD relevant areas. I concur with Mr. Marshall that it is the second-order implications that would be most profitably studied based on the report itself. **OPLAN** 7500 clearly suggests an increased need for awareness and tools to allow us to consider societal trends and factors in seeking to avoid the conditions which foster disconteut and terrorist behavior. I would be glad to assist and contribute to a roundtable or other evaluation. The Defense Science Board could also be asked to specifically consider the economic and societal impacts of these technologies and *the* resultant implications for our nation's security and defense capabilities.

John J. Young, Jr.

GH
1500

~~FOUO~~

JUN 16 2006

TO: Robert Rangel

c c : Robert Wilkie

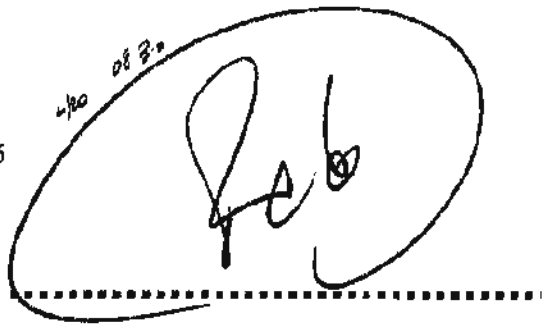
FROM: Donald Rumsfeld DR

SUBJECT: Letter to Warner re: Carrier Naming

Before I send this letter to Warner, I *think* we better find out what the Navy thinks of all this.

Please get **back** to me.

Thanks.



Attach Draft SD letter to Chrmn Warner re: **S.2766**

DHR.ss
SF061506-02

Please Respond By June 20, 2006

6/19

Sir -

- Suggest making [redacted] minor edits to the letter to allow more flexibility in working this issue.
- I will get with Robert Wilkie to pursue changes [redacted] to the Warner language we discussed.

Robert

OSD 10064-06

~~FOUO~~

6/22/2006 5:54:27 PM 11-L-0559/OSD/58194

O:\ARM\ARM06E22.xml S.L.C.

Don — I hope you find this proposal consistent with your respect for Pres. Ford. I spoke with Vice Pres Cheney earlier today and he was very pleased. Jack Marsh and I have been working on this for some time — John

AMENDMENT NO._____ Calendar No._____

Purpose: To name the CVN–78 aircraft carrier the U.S.S. Gerald Ford.

IN THE SENATE OF THE UNITED STATES—109th Cong., 2d Sess.

S. 2766

To authorize appropriations for fiscal year **2007** for military activities of the Department of Defense, for military construction, and for defense activities of the Department of Energy, to prescribe personnel strengths for such fiscal year for the Armed Forces, and for other purposes.

Referred to the Committee on _____ and ordered to be printed

Ordered to lie on the table and to be printed

AMENDMENT intended to be proposed by Mr. WARNER

Viz:

At the end of subtitle B of title X, add the following:

SEC. 1013. NAMING OF CVN-78 AIRCRAFT CARRIER AS THE U.S.S. GERALD FORD.

(a) FINDINGS.—Congress makes the following findings:

(1) Gerald R. Ford has served his country with honor and distinction for the past **64** years, and continues to serve.

(2) Gerald R. Ford joined the United States Naval Reserve in 1942 and served valiantly at sea on the U.S.SMonterey (CVL–26) during World War 11, taking part in major operations in the Pacific, including at Makin Island, Kwajalein, Truk, Saipan, and the Philippine Sea.

(3) The U.S.S. Monterey earned 10 battle stars, awarded for participation in battle, while Gerald R. Ford served on the vessel.

(4) Gerald R. Ford was first elected to the House of Representatives in 1948.

(5) In the course of 25 years of service in the House of Representatives, Gerald R. Ford distinguished himself by his exemplary record for character, decency, and trustworthiness.

(6) Throughout his service in Congress, Gerald R. Ford was an ardent proponent of strong national defense and international leadership by the United States.

(7) From 1965 to 1973, Gerald R. Ford served as minority leader of the House of Representatives, raising the standard for bipartisanship in his tireless fight for freedom, hope, and justice.

(8) In 1973, Gerald R. Ford was appointed by President Nixon to the office of Vice President of

the United States with the overwhelming support of Congress.

(9) From 1974 to 1976, Gerald R. Ford served as the 38th President of the United States, taking office during one of the most challenging periods in the history of the United Stabes and restoring the faith of the people of the United States in the office of the President through his steady leadership, courage, and ultimate integrity.

(10) President Gerald R. Ford helped restore the prestige of the United States in the world community by working to achieve peace in the Middle East, preserve détente with the Soviet Union, and set new limits on the spread of nuclear weapons.

(11)President Gerald R. Ford served as Commander in Chief of the Armed Forces of the United States with great dignity, supporting a strong Navy and a global military presence for the United State and honoring the men and women of the. Armed Forces of the United States.

(12) Since leaving the office of President, Gerald R. Ford has been an international amhassador of American goodwill, a noted scholar and lecturer, a strong supporter of human rights, and a promoter of higher education.

(13) Gerald R. Ford was awarded the Medal of Freedom and the Congressional Gold Medal in 1999 in recognition of his contribution to the Nation.

(14) As President, Gerald R. Ford bore the weight of a constitutional crisis and guided the Nation on a path of healing and restored hope, earning forever the enduring respect and gratitude of the Nation.

(b) NAMING OF CVN–78 AIRCRAFT CARRIER.—CVN–78, a nuclear powered aircraft carrier of the Navy, shall be named the U.S.S. Gerald Ford.

THE SECRETARY OF DEFENSE
WASHINGTON

JUN 22 2006

560

The Honorable John W. Warner
United States Senate
Washington, DC 20510

Dear Mr. Chairman,

Your effort to name a carrier in honor of Gerald R. Ford is touching. He is a superb human being, an historic Member of the Congress, and the only President in the history of our country who never ran for either President or Vice President.

As a footnote in history, you might be interested to know that my carrier qualifications as a naval aviator were aboard the U.S.S. Monterey – the ship that Gerald R. Ford served on during WWII.

Good for you, my friend.

Sincerely,

22 JUN 06

16 JUN 06

OSD 10064-06

11-L-0559/OSD/58199

6/22/2006 5:55:17 PM

THE SECRETARY OF DEFENSE
WASHINGTON

The Honorable John W. Warner
United States Senate
Washington, DC 20510

Dear Mr. Chairman,

Your effort to name a carrier in honor of Gerald R. Ford is touching. He is a superb human being, an historic Member of the Congress, and the only President in the history of our country who never ran for either President or Vice President.

As a footnote in history, you might be interested to know that my carrier qualifications as a naval aviator were aboard the U.S.S. Monterey – the ship that Gerald R. Ford served on during WWII.

Good for you, my friend.

Sincerely,

6/16 OSD

~~FOUO~~

JUN 16 2006

TO: Robert Rangel

CC: Robert Wilkie

FROM: Donald Rumsfeld

SUBJECT: Information from Congressman Charles Dent

Congressman Charles Dent handed me the attached material. Apparently, it is a letter from a son to the father. Apparently, there was another son that was killed at the Pentagon on 9/11.

Why don't we draft a nice note to the father thanking him for his service in the Navy, his son's current service in the Navy, and mention his son's death here at the Pentagon. Also enclose a copy of my remarks at today's groundbreaking ceremony.

Thanks.

Attach Materials from Congressman **Charles Dent**

DHR.ss
SF061506-11

Please ***Respond By*** *June 30,2006*

Smith, Heather

From: Bortz, Gregg
Sent: Monday, June 12,2006 1:49 PM
To: Smith, Heather
Subject: Letter to the editor

From The Morning Call
June 11,2006

Families of 9/11 victims don't buy 'symbolism'

I take exception to the June 9 story from the Los Angeles Times, "Experts: Killing's value mostly symbolic," in regard to the killing of al-Zarqawi. It may be mostly symbolic to liberal journalists, who seem to relish reporting on sethacks in the war on terrorism but not the victories. But, I can assure you his death was not unimportant or only "symbolic" for the thousands of relatives of those killed on 9/11.

Any day a member of al-Qaida or any murdering terrorist dies is a good day for me. Al-Zarqawi was a terrorist, responsible for the murdering of hundreds of innocent men, women and children. How can anyone say his death was just symbolic?

I lost my son, Navy Commander Robert Schlegel, in the attack on the Pentagon, and I can assure you his death was not symbolic to me. To me, it was a small dose ofjustice. I only hope many more al-Zarqawis will meet the same fate.

Elvin L. Schlegel

Walnutport
Copyright © 2006, The Morning Call

From: (b)(6)
To:
Date: 5/28/2006 1:45:12 PM
Subject: Re: General info

Hi Dad,

I know you as well as Mom will be worried about me being in Kuwait but it was always a possibility and if I thought I could not ever fulfill my duties after September 11th I would have resigned my commission at that time. Also, I think Rob would have wanted me to stay the course and perform this mission and I see it as a small part of avenging his death by more directly supporting the troops on the ground in Theater.

We finished packing up the house and loading to the truck on the 25th and are now at the Comfort Suites in neighboring Oakley (one town over from the corn festival). My farewell is in Tuesday with 75 people attending (more then the XO's) and then we do our final house walk through on the 31st and then hit the mad. Our first stop is NAS LeMoore (about three hours south) on the 31st. (b)(6) was slinging ribs for during he Corn Festival, is catering the farewell.

The 1st and 2nd of June we will be in Las vegas at the Orleans Hotel and Casino. We have tickets to the "Cirque de Soleil Mystere" show for the night of the 2nd.

Then we head to the Grand Canyon's North Rim. We are staying at the Grand Canyon Lodge on the night of the 3rd and then at Jacob Lake Cabins on the 4th and 5th which is locatd at the Park entrance. We'll do some hiking on the North Rim on the 4th and have a half day of horseback riding on the 5th through the Kaibob National Forest (b)(6) is opting to stay at the Cabin since she gets motion sickness on a horse).

On the sixth we head east with stops in Winslow AZ, Amarillo TX, Fort Smith AR, Memphis TN, Gatlinburg TN, Asheville NC and then arriving in Frederick either on the the 13th or 14th. Hopefully we'll be able to come down for the Memorial ground breaking. Mostly one night stays although we will be going rafting on the Nantahala River in NC and spending a day touring the Biltmore Estate in Asheville. Also, arriving about mid day in Memphis and staying at The famous Peabody Hotel on Beale Street...good music and good BBQ!

We hope to get our household goods on the 16th and work hard to get settled so we can make some short weekend trips befure I leave on 29 July.

Sorry to hear about your scooter. We had (b)(6) car get broken into during a Cub Scout Meeting and stole her cell phone and the kids in-car DVD system. Only took a day to get the window fixed and within the week I had the claim check less the $100 deductible. Not sure about that scrolling bar thing..sorry.

Good luck on your motorcycle test and hope you have a good Memorial Day weekend. Tommorrow, (b)(6) Cub Scouts are placing flags at a local cemetary on veteran's grave sites.

Talk to you soon,

Love

Rich

-----Original Message-----

11-L-0559/OSD/58203

THE SECRETARY OF DEFENSE
WASHINGTON

05 565

JUN 22 2006

Lieutenant Commander Elvin L. Schlegel, USN (Ret.)
Britton Business Machine and Supplies, Inc.
406 Main Street
Walnutport, PA 18088

Dear Commander Schlegel,

At the ground breaking for the Pentagon Memorial earlier this week, Congressman Charles Dent passed me your Letter-to-the-Editor and the letter from your son, Rich, regarding his deployment to Kuwait. I wanted to write and thank you and your sons for your service in the United States Navy.

The years since your son's death on September 11,2001, must have been enormously difficult, and I commend your family for its outstanding attitude and commitment. It is clear you set a fine example, for your family's tradition of service is remarkable.

Families like yours represent the best America has to offer, and highlight why the Pentagon Memorial is so important. I have enclosed my remarks at the groundbreaking ceremony for you. We will never forget those who lost their lives here that day.

With my gratitude and best wishes,

Sincerely,

cc: Congressman Charles Dent

OSD 10078-06

11-L-0559/OSD/58204

DEFENSE SEAR
h 20, 2006 War o Terror Tra sfe zti News Products Press Resources Images Websites Cont
Updated: 16 Jun 200

U.S. Department of Defense
Office of the Assistant Secretary of Defense (Public Affairs)

Speech

On the Web:
http://www.defenselink.mil/speeches/2006/sp20060615-13258.html
Media contact: +1 (703) 697-5131

Public contact:
http://www.dod.mil/faq/comment.html
or +1 (703) 428-0711

NEWS
News by Email
News by R
Print a Cop
Email a Co
Search Nev

DoD News
Advisories
contracts
Live Briefings
Photos
Releases
Slides
Speeches
Today in DoD
Transcripts
Pool Reports

American Forces News
Articles
Television
Special Report

DoD Search

About News
News Archive
News by Email

Other News Sources

Pentagon Memorial Groundbreaking Ceremony

Remarks as Delivered by Secretary of Defense Donald H. Rumsfeld, Pentagon Crash Site, Thursday, June 15, 2006

Thank you very much, Jim. Rosemary, thank you for being here.

Chairman of the Joint Chiefs of Staff, General Pete Pace, thank you for all you do.

Chaplain Black.

I should just let people know that the friends and family members of those that died here are in these two sections.

In that section, I can see at least a number of the members of the United States Congress there in a very busy part of their session, and we very much appreciate your being here.

I see the President Pro Tempore of the Senate, Ted Stevens. Thank you, sir. And Dan Inouye next to him, Senator Inouye of Hawaii. Chairman John Warner and his close associate, Carl Levin, senator from Michigan. Senator George Allen. Thank you for being here.

I *see* the Mayor. I see behind you Congressman Davis and Moran and Eleanor Norton Holmes and Congressman Young, Chairman Young, Kay Granger.

And sitting behind them, the service secretaries, Mike Wynne and Fran Harvey. Former Secretary Frank Carlucci and Members of the Joint Chiefs of Staff.

We appreciate all of your being here. Thank you so much.

And over here I see the Members of the Cabinet, Secretary Rice, and I don't know there must be half – two-thirds of the Cabinet here.

Thank you all for being here. We appreciate it a great deal.

In the center section with the family, we also see Mary Jo Myers. Dick Myers was Pete Pace's predecessor, of course, and is retired.

Thank you for being here.

And Paul Wolfowitz, the -- I forget what it is -- President of the World Bank or Director of the World Bank or -- in any event, he is former Deputy, was here during that period.

Thank you for being here, Paul.

It means a great deal to us that all of you are here. And thank you so very much.

And a special welcome to the families of those who were killed here on September 11th and to the survivors of September 11th -- and there are a great many here, and I would include the press because the press was in the building at the time the plane hit as well. And to those of you who are first responders, the firemen and ambulance people who came and provided aid, immediate aid to our colleagues. You honor us with your presence.

Our nation's capital city is rich with monuments to the men and women of our heritage.

Among the most famous, of course, across the Potomac, are the monuments to Washington and Jefferson and Lincoln - men who valued freedom, who helped to define it, to defend it and to give it new birth.

It will not be long before a new monument stands on this side of the Potomac -- the monument to the 184 who died so close to this spot. They had different lives. and different dreams. and they shared a tragic destiny.

Many of you here have been instrumental in helping to make this memorial possible, partners in the Memorial Fund that Jim and Rosemary head up, Members of Congress, citizens, donors. And we thank you for your dedication and your generosity.

And thanks to Julie Beckman and Keith Casemen. Are they here? Where are they? I haven't seen them yet. There you are. Stand up. These are the designers of this memorial. It's nice to see you both. Thank you for being here.

When completed, this memorial's individual benches will remind visitors that every one of these lives was special, with hopes cut short, and with loved ones left behind.

Among them was a girl named Zoe Falkenberg. She was traveling on the flight with her parents and her three-year-old sister. She had been a soccer player, on the swim team, and took part in her grade-school production of "The King and I." She was eight.

We remember her, of course, and we remember all who have hallowed this ground -- the passengers of American Airlines Flight 77, and the men and women -- military and civilian --who worked here, and quietly, and capably, served our country.

Today we claim this ground for them. For their families. And for the brave servicemen and women who have volunteered to go out to meet our nation's enemies and to keep our country safe.

If I may, I want to say a word to the family members here who lost loved ones on September 11th. At some point in the future, most of you will return to this sacred ground. You might walk between what will be newly planted trees out behind me, pass by the benches, each with a name etched in the granite. No doubt you'll search for the name of the person who once helped give your life meaning, and who perhaps always will.

And as you reflect, you'll be flooded with memories -- of your loss, to be sure -- but also split-second images of love, of laughter and of joyous times.

This memorial was meant for you, to offer some comfort. We have talked over the years, and now you can know that we will never forget. So I thank you for coming, and may God be with you and with your families.

And to other Americans who might one day come to this memorial many years from now, I want to say this. Someday there may come a time when you might encounter a stranger here, maybe a child

born after September 11th, looking around, wondering what this memorial is all about.

Well, tell them that this is where men and women became targets and were killed because they were free Americans. Tell them that there have always been those who fear and oppose our country's values, our cause. And tell them that history is the epic story of those enemies defeated and freedom's triumph.

Then, as those young visitors grow older, they'll understand that those we honor here did not die in vain. That their countrymen's grief was turned towards the cause of our nation's defense. And that our enemies were no match for the brave Americans -- who are uncompromising in their mission, unapologetic for their purpose, and unyielding in their quest for freedom and for peace.

May God bless you, and may God continue to bless our wonderful country.

Printer-friendly Version Email A Copy

Site Map Privacy & Security Notice About DoD External Link Disclaimer Web Policy About DefenseLINK FirstGov.go

11-L-0559/OSD/58207

DRAFT LTR YOU REQUESTED

Lieutenant Commander Elvin L. Schlegel, USN (Ret.)
Britton Business Machine and Supplies, Inc.
406 Main Street
Walnutport, PA 18088

Dear Commander Schlegel,

At the groundbreaking for the Pentagon Memorial earlier this week, Congressman Charles Dent passed me your Letter-to-the-Editor and the letter from your son, Rich, regarding his deployment to Kuwait. I wanted to write and thank you and your sons for your service in the United States Navy.

The years since your son's death on September 11,2001, must have been enormously difficult, and I commend your family for its outstanding attitude and commitment. It is clear you set a fine example, for your family's tradition of service is remarkable.

Families like yours represent the best America has to offer, and highlight why the Pentagon Memorial is so important. I have enclosed my remarks at the groundbreaking ceremony for you. We will never forget those who lost their lives here that day.

With my gratitude and best wishes,

Sincerely,

bVI-

cc: Congressman Charles Dent

~~FOUO~~

JUN 16 2006

TO: Robert Rangel

FROM: Donald Rumsfeld

SUBJECT: Item Given to me by one of the Families Today

One of the Romeos gave me the attached information on a 5K run in September. We may want to send a note to them that could be read at the event -- thanking them for doing what they're doing.

Thanks.

Attach Flyer for 5K Race in honor of Kris Romeo Bishundat

DHR.ss
SF061506-13

OSD 10081-06

6/22/2006 2810 PM

~~FOUO~~

11-L-0559/OSD/58209

Run to Remember Romeo

5K Walk or Run

In Remembrance of Kris Romeo Bishundat
and all others who were lost on September 11, 2001

September 9th 2006

Thomas Stone High School
3785 Leonardtown Road | Waldorf, Maryland

Registration from 8:30 a.m. till 9:30 a.m.

Race Begins at 10:00 a.m.

$20 Pre-Register Online
$30 Day of Race

Join us at UNO Chicago Grill – St. Charles Town Center
after the race for a great afternoon of fun, food and drink

All Welcome - Party Begins at 12:30 p.m.

UNO CHICAGO GRILL

Percentage of Sales **donated directly to** the Pentagon Memorial Fund
(Must Have Uno Chicago Grill Event Coupon Before Entering UNO Chicago Grill)

All Proceeds to Benefit the Pentagon Memorial Fund

pentagonmemorialfund
remember. reflect. renew.

http://www.pentagonmemorial.net

Can't make it or participate in the race but would still like to contribute a donation to support our cause?

Check Payable to Pentagon Memorial Fund, Inc.

Mail To: Run to Remember Romeo
P.O. Box 455
Brykerstown, MD 20611-0455

Visit http://www.rememberromeo.com for Pre-Registration and Event News

11-L-0559/OSD/58210

Remember Romeo

Biography

Romeo was born in Guyana on September 14, 1977 and moved to Waldorf, Maryland when he was only two and a half years old. He attended Dr. Mudd Elementary School, John Hanson Middle School and later graduated from Thomas Stone High School in June 1995. While at Thomas Stone High he played basketball on both the Junior and Varsity level. Romeo also had many other interests such as playing football, wrestling, surfing, tennis, computers, golf, and of course his prized Jeep. Romeo developed a special bond with his high school friends "The Crew" , that he still had daily moments with, leaving them with a lasting

11-L-0559/OSD/58211

memory.

Romeo joined the United States Navy on September 12, 1995, just two days before his 18th birthday. He was assigned to the USS Yorktown from November 1996 to October 1997. After a short tour on the USS Yorktown, Romeo was then re-assigned to the USS Shreveport in October 1997 and stayed on the Shreveport till being transferred to the Pentagon in May 2001. While on the Shreveport he trained and became an Information Systems Technician. His former Supervisor, ITCS Emanual Chestnut, Jr. said he had "never in twenty years in the Navy worked with anyone as unselfish as IT2 Kris Bishundat. His Communication and Division Officers considered Romeo as one of the most versatile and smartest guys on the ship. Romeo was chosen to manage the entire Automated Information Systems Department on board the Shreveport. Some of his duties included but not limited to managing personnel, a multitude of complex computer and data

processing equipment, operating as the ships webmaster and conducted constant systems analysis to ensure that all of the pieces of the intricate puzzle of the modern warship3 information hub was in place, on time and always up and running. This achievement and his ability to touch and influence everyone who knew him earned him the "Sailor of the Quarter" in 2000 and later receiving the highest honor an Navy ship may bestow upon a young Petty Officer: "Sailor of the Year for 2001".

While stationed out of Norfolk, Virginia he traveled to San Diego, Turkey, France, Romania, Greece, Jordan, Israel, Italy and Malta. In May of 2001 he was assigned to the Chief Naval Operations Center at the Pentagon in the Communications Division as 2nd Class Petty Officer and had just moved to the newly renovated office three weeks prior to the attack.

In just six short years, Romeo had received the Navy and Marine Corp

Achievement Medal, Sea Service Deployment Ribbon, Armed Forces Expeditionary Medal, Good Conduct Medal, and the Purple Heart (awarded posthumously).

© 2006 RememberRomeo.com

Arlington National Cemetery Website

Kris Romeo Bishundat

Systems Technician (IT), United States Navy

Remembering The Lost

Kris Romeo Bishundat
Attack Location: Pentagon
Age: 23
Home: Waldorf, Maryland

Kris Romeo Bishundat had been working at the Pentagon for only three months when American Airlines Flight 77 crashed into the building.

Bishundat grew up in Charles County, the eldest of three children, and spent six years in the Navy. He had been taking classes at the University of Maryland's University College while working as a systems technician.

Bishundat loved being in the service, his father, Bhola Bishundat, told the Associated Press.

He told his family little about his duties at the Pentagon. Kris Bishundat's mother and siblings went to the site this week to see whether they could learn anything.

"I'm hoping they are in the basement; maybe he and other people are there," Bhola Bishundat said. "We are just hoping. We are not giving up now."

Yesterday, relatives and neighbors gathered at his parents' house on a tight.

knit cul-de-sac in Waldorf. They stood on the porch, hugging and crying, and said they did not want to talk to strangers about him.

Today is his birthday. He would have been 24.

-- Nancy Trejos

Bright Star, He Left His Mark on the Navy
December 10,2001

Scores of officers and enlisted sailors crowded onto the busy deck of the USS Shreveport warship September 20 to honor a fallen comrade and officially open a facility named for him.

Housing nine computer terminals, educational materials and a small library collection, the Media Resource Center - which provides about 700sailors and Marines access to computer-aided learning opportunities, as well as e-mail and Internet service - was named for Petty Officer 2nd Class Kris Romeo Bishundat, who served on the Shreveport before being transferred to the Pentagon four months before the terrorist attacks.

Bishundat, who would have turned 24 on September 14, was assigned in May :0 the communications division of the Chief of Naval Operations Center at the Pentagon. An information systems technician there, Bishundat had moved to newly renovated offices three weeks before the attacks. He had enlisted in the Navy six years to the day the terrorists struck.

A native of Guyana, Bishundat was a sensitive, humble son, said his mother, Basmattie Bishundat. It wasn't until her son's death, she said, that she learned about his meteoric accomplishments. He never talked about half the awards he won, she said. In just six years, Bishundat had received the Navy and Marine Corp Achievement Medal, Navy Unit Commendation, the National Defense Service Medal, the Sea Service Deployment Ribbon, the Armed Forces Expeditionary Medal and the Good Conduct Medal. He was awarded the Purple Heart posthumously October 18 at his funeral in Arlington National Cemetery.

He came to the United States in 1980and settled in Waldorf, Maryland, with his
mother and his father, Bhola. He was the oldest of three children, including sisters, Danita, 21, and Devita, 18. He enlisted in the Navy two days before he turned 18 and was assigned to the USS Yorktown for a year until October 1997. Reassigned to the Shreveport as manager of the ship's automated information systems department, Bishundat was responsible for a multitude of complex computer and data processing equipment, operating as the ship's vehmaster. A former supervisor, Emanuel Chestnut Jr., was quoted as saying he had "never in 20 years in the Navy worked with anyone as unselfish as Bishundat."

He was an adventurous, fun-loving soul who was into surfing, golf and tennis, his mother said. "Me loved life and lived every day to its fullest." Her son had a real
sensitive side also, she said. His mother recalled how, in a conversation with him about an hour before the attack, he expressed how he was so touched thal his sister, Danita, not only took the time to pack his lunch but also wrote a note telling him to enjoy it.

He was so touched by it, he also told his girlfriend, Lisa Kenney, about the note in a phone call to her before the attack. "He was very sensitive," his mother said. "I couldn't have asked for a better son."

BISHUNDAT, KRIS "ROMEO" USN (Age 23)

Of Waldorf, Maryland died September 11,2001 of a terrorist attack while stationed at the Pentagon. He leaves behind his parents, Bhola and Basmattie Bishundat; sisters, Danita and Devita Bishundat; grandfather, Santall Persaud, a very special friend, Lisa Kenney, and a host offamily, friends, and co workers. Viewing will be Wednesday, October 17,2001 4 to 9 p.m. at the Jaycee Hall, 3090 Crain Highway, Waldorf, Maryland. A second visitation will be on Thursday, October 18, at HUNTT FUNERAL HOME, Inc., 3035 Old Washington Rd., Waldorf, Maryland 20604 from 9:30 a.m. until 11:30 a.m. where a procession will depart at 11:50 a.m. for interment at Arlington National Cemetery. In lieu of flowers you may contribute to: The Bishundat Memorial Fund, P.O. Box 1733, Waldorf, MD 20604.

NOTE: ST Bnshundat was laid to rest in Section 64 of Arlington National Cemetery, in the shadows of the Pentagon.

AMERICAN MEMORY

Photo By M. R. Patterson, July 2002

Posted: 14 October 2001 Updated: 15 December 2001 Updated: 7 July 2002 Updated: 26 May 2003 Updated: 6 July 2003 Updated 29 May 2006

Photo By M. R. Patterson, 27 June 2003

THE SECRETARY OF DEFENSE
WASHINGTON

335 50

JUN 22 2006

Mr. and Mrs. Bhola Bishundat
Run to ***Remember Romero***
Post Office Box **456**
Bryantown, MD **20617-0456**

Dear Mr. and Mrs. Bishundat,

I understand the Romero Heart Foundation has planned a ***Run*** to ***Remember Romeo*** in Waldorf, Maryland, on September **9th, 2006.** Petty Officer Second Class Romero Bishundat was a fine Sailor, and I want to write and offer my support for this event.

22 Jun 06

The years since your son's death must have been enormously difficult, and your determination to ensure his sacrifice is properly remembered is commendable. Your work on behalf of the Pentagon Memorial Fund will help ensure that those who lost their lives on September **11,2001,** will not **be** forgotten. Please know how much I appreciate and admire your efforts.

You and your family will remain in my thoughts and prayers. I wish you the best for the event.

Sincerely,

16 Jun 06

OSD 10081-06
6/22/2006 5:28:57 PM
11-L-0559/OSD/58220

DRAFT LTR YOU REQUESTED

Mr. and Mrs. Bhola Bishundat
Run to Remember Romeo
Post Office 456
Bryantown, MD 20617-0456

Dear Mr. and Mrs. Bishundat,

I understand the Romeo Heart Foundation has planned a ***Run to Remember Romeo*** in Waldorf, Maryland, on September 9th, 2006. Petty Officer Second Class Romeo Bishundat was a fine Sailor, and I wanted to write and offer my support for this event.

The years since your son's death must have been enormously difficult, and your determination to ensure his sacrifice is properly remembered is commendable. Your work on behalf of the Pentagon Memorial Fund will help ensure that those who lost their lives on September 11, 2001, will not be forgotten. Please know how much I appreciate and admire your efforts.

You and your family will remain in my thoughts and prayers. I wish you the very best for the event.

OK

Sincerely,

– per Mr. Rangel's edits

CSC 6/20

~~FOUO~~

INFO MEMO

DSD_____

FOR SECRETARY OF DEFENSE

FROM: Eric S. Edelman, Under Secretary of Defense for Policy EZ JUN 22 2006

SUBJECT Ambassador Vacancy Rate at State Department

- You asked about the vacancy rate for **U.S.** ambassadors on average over the last five years (note next under).

- I spoke with Under Secretary of State Henrietta Fore, and she provided the following information:

    - In terms of Presidential appointees/Senate confirmed slots, the State Department has had **9,754** vacant days, which amounts to about **13.2%** of the entire tenure of this Administration.

    - These figures are for Assistant Secretaries and Under Secretaries only, of which there are 37 positions in total.

- Henrietta is tracking down the same data on ambassadors, which is more complex given the large number of overseas posts.

- Once we have that information, we will provide that data to you. Meantime, we will work with State to develop a plan to engage Congress and the White House on this issue.

~~FOUO~~

OSD 10084-06
6/22/2006 4:03:51 PM
052206-42

~~FOUO~~

May 30,2006

TO: Eric Edelman

FROM. Donald Rumsfeld

SUBJECT: Ambassador Vacancy Rate at State Department

Please find out what the vacancy rate is for ambassadors worldwide, on an average over the last five years. The State Department must know.

In terms of DoD's Presidential appointees-Senateconfirmed, we are running about 25 percent vacant if you take each day of the year since the President was sworn in and factor in how many days there were vacancies in each one of the 47 jobs.

I would like to see the same calculation for ambassadors. I think the "gapping"is serious and is causing us a problem. If it is true, we might want to combine the two, and see what we could do about getting the Congress and the White House to fix it.

Thanks.

DHR dh
052206-42

Please Respond By 06/29/06

~~FOUO~~

11-L-0559/OSD/58223

OSD 09615-06

5/22/2006 4:01:09 PM

0122
1745

OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

ACQUISITION, TECHNOLOGY AND LOGISTICS

JUN 22 2006

MEMORANDUM FOR THE EXECUTIVE SECRETARY OF THE DEPARTMENT OF DEFENSE

SUBJECT: Office of the Under Secretary of Defense for Acquisition, Technology and Logistics

The Office of the Under Secretary of Defense for Acquisition, Technology and Logistics (AT&L) will be conducting its annual Sports day on Friday, 23 June. The AT&L front office will close at 11:00 on the this date. Colonel Jennings will be collocated with Under Secretary Krieg for the duration of the event. Colonel Jennings contact information is below:

Cell Phone	(b)(6)
Email	Theodore.Jennings@osd.mil

S. A. MACKEY
Director for Operations

cc: OSD Cables

OSD 10146-06
11-L-0559/OSD/58224
6/23/2006 2:24:10 PM

~~FOR OFFICIAL USE ONLY~~

INFO MEMO

USD(P) _____
DSD JUN 23 2006

FOR SECRETARY OF DEFENSE

FROM: Ryan Henry, PD Under Secretary of Defense for Policy

SUBJECT: Policy Implementation of the 1000-Ship Navy Concept

- You asked for a concept tying together counter-terrorism, counter-piracy, counter-proliferation, and counter-narcotics with the CNO's 1000-Ship Navy concept (your memorandum is next under).

- We are operationalizing this concept through the President's September 2005 National Strategy for Maritime Security (NSMS—directed by NSPD 41/HSPD 13). The NSMS calls for solving the same problems you identify.

  - The CNO's 1000-Ship Navy concept seems well-suited to help meet these challenges. A short white paper on what we feel is required for long-term effectiveness of this concept is attached (Tab A).

  - We will work with the Navy to link the 1000-Ship Navy concept to the Maritime Security PCC, which is charged with implementing the NSMS and its eight supporting plans (listed at Tab B).

COORDINATION: DASD Whitman (PA) and discussed with VADM Morgan (DCNO).

Attachments: As stated.

Prepared by: CDR Chip Denman, OUSD(P)-Policy Planning, (b)(6)

OSD 10141-06
6123120061:59:20 PM
06/007007-STRAT

~~FOR OFFICIAL USE ONLY~~

11-L-0559/OSD/58225

~~FOUO~~

May 23,2006

TO: Eric Edelman

CC: ADM Mike Mullen
Dorrance Smith

FROM: Donald Rumsfeld DR.

SUBJECT "Thousand Ship Navy" Concept

I really like the concept of the "Thousand Ship Navy" and the ease of getting cooperation from other countries in maritime activities.

Do you want to come up with a concept and see how we can tie it to counter-piracy, counter-narcotics, counter-terrorism. and counter-proliferation, and figure out how that can be handled? You may want to get Dorrance Smith involved with it as well.

Thanks.

DHR:ss
052306-17

Please Respond By 06/20/06

~~FOUO~~

OSD 08742-06
6/23/2006 1:58:12 PM

11-L-0559/OSD/58226

Policy Implementation of the 1000-Ship Navy Concept

- To be effective for the long term, the 1000-Ship Navy initiative needs to be:
  - Guided by our strategic Priorities for international partnerships (e.g., as outlined in the ***Security Cooperation Guidance).***
    - We will work to make the connections to this concept tighter in the next Guidance update.
  - Understood and synchronized effectively across the interagency.
    - For instance, the Coast Guard possesses the expertise needed for maritime "constabulary" missions such as patrolling coastal waters.
    - We will ensure that the 1000-Ship Navy concept is linked up with other interagency maritime-related initiatives, such as PSI.
  - Tied into our international outreach efforts.
    - For example, DoD's Regional Centers should help strengthen awareness of this initiative among allies and partners.
    - The Navy is holding its own series of "Regional Seapower Symposia" in key regions (e.g., Southern Europe in the fall) to gain international buy-in.
  - Focused on building ***durable*** maritime partnership capacity.
    - We need to ensure that the Navy develops training and maintenance capacity among our partners so that they can sustain needed maritime capabilities long after our initial investment.
    - We do not want to congratulate ourselves for building needed capabilities in the near term, only to see rusting hulls and the return of ungoverned maritime areas a few years hence.

NSPD 41/HSPD 13

National Strategy for Maritime Security

Homeland Defense has OSD lead
DoD/DHS have interagency lead

International Effort and Outreach Plan

ISP/NP has OSD lead
State has interagency lead

Maritime Commerce Security Plan

ISP/NP has OSD lead
DHS has interagency lead

Maritime Transportation Security Plan

ISP/NP has OSD lead
DHS has interagency lead

Global Intel Integration Plan

OUSD(I) has OSD lead
DoD/DHS have interagency lead

Maritime Domain Awareness Plan

Homeland Defense has OSD lead
DoD/DHS have interagency lead

Domestic Outreach Plan

Homeland Defense has OSD lead
DHS has interagency lead

Maritime Threat Response Plan

Homeland Defense has OSD lead
DoD/DHS have interagency lead

Maritime Infrastructure Recovery Plan

Homeland Defense has OSD lead
DHS has interagency lead

Oct 2005

~~FOR OFFICIAL USE ONLY~~
11-L-0559/OSD/58228

~~FOUO~~

May 19,2006

TO. David Chu

FROM: Donald Rumsfeld

SUBJECT Point System for Teachers

In my town hall meeting I was asked about some kind of a point system for teachers and how retired military people can be better positioned in that regard.

Please get the transcript and check into it.

Thanks.

DHR.dh
051906-19

Please Respond By *06/22/06*

OSD 10153-06
6123120065 1610 PM

11-L-0559/OSD/58229

SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

292

INFO MEMO

June 15, 2006, 2:05PM

FOR SECRETARY OF DEFENSE

FROM: David S. Chu, USD (PERSONNEL & READINESS)
1- Attached, Chu 18/6/06

SUBJECT: Point System for Teachers – SNOWFLAKE (Attached)

- Troops-To-Teachers coordinators work closely with the states and local districts to ensure that military experience that relates to the competencies needed as a public school teacher is taken into consideration to the fullest extent possible during the certification and employment processes.

- Troops to Teachers is a Department of Education Program which seeks to simultaneously help relieve teacher shortages in high needs, low-income communities and assist military personnel in making successful transitions to second careers in teaching. Counseling, referral, and placement assistance is provided through a network of 25 state placement assistance offices. Financial assistance is available to eligible individuals who agree to teach for three years in qualifying schools.

- The coordinators stress the "value-added" attributes of applicants who are former military. Many states and districts provide special incentives to recognize and count military experience, especially instructional experience for salary scale purposes.

15 JUNE

RECOMMENDATION: None. For information only.

COORDINATION: None.

ATTACHMENT:
As stated.

19 MAY 06

PREPARED BY: *Gary* Woods, Educational Opportunities, (b)(6)

OSD 10153-06
6/23/2006 5:21:08 PM

11-L-0559/OSD/58230

~~FOUO~~

May 19, 2006

TO: David Chu

FROM: Donald Rumsfeld

SUBJECT: Point System for Teachers

In my town hall meeting I was asked about some kind of a point system for teachers and how retired military people can be better positioned in that regard.

Please get the transcript and check into it.

Thanks.

DHR.dh
051906-19

Please Respond By 06/22/06

OSD 10153-06

6/23/2006 5:16:10 PM

~~FOUO~~

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND READINESS

292

ACTION MEMO

June 19,2006 10:00 PM

FOR SECRETARY OF DEFENSE

FROM David S. C. Chu, Under Secretary of Defense (P&R) David S. C. Chu 19/6/06

SUBJECT: Lessons Learned from Governors and Base Commanders meetings
SNOWFLAKE (TAB 1)

- The response at Tab 2 informs Governor Bush the Department is acting on his suggestion by modifying its website on state-level initiatives to emphasize communication.
  - Best practice section has been added to the website on state – military communication and will feature Governor Bush's commanders meetings as a model.
  - Additionally, a collaboration forum is being added to the website to facilitate interaction among the Governors and their senior staff as they share ideas of how best to address our issues.
- At Tab 3 is an "Orientation and Guidebook" for the USAMilitaryFamilies.org website which we propose to attach to your response to the Governor, showing the recent changes.
- We will incorporate the best practices in our ongoing dialogue with the governors.

19 Jun 06

RECOMMENDATION: That you sign the letter to Governor Bush (Tab 2).

COORDINATION: N/A

ATTACHMENTS: as stated

PREPARED BY: George Schaefer, ODUSD(MC&FP), (b)(6)

14 Apr 06

OSD 10156-06
6/26/2006 7:03:34 AM

11-L-0559/OSD/58232

~~FOUO~~

April 14, 2006

TO: David Chu

CC: Gen Pete Pace

FROM: Donald Rumsfeld DR.

SUBJECT: Lessons Learned from Governors and Base Commander Meetings

Florida Governor Jeb Bush made a couple of suggestions at yesterday's lunch meeting that are worthy of our follow-up and assistance:

1. Compile lessons learned from other governors on how they deal with their military people and families.
2. Set up regular "base commander" meetings as a way of sharing information and finding common solutions.

Please follow up on these two items and let me know how you think we can best pursue these ideas.

Thanks.

DHR.dh
041406-15

Please Respond By 05/25/06

OSD 10156-06
6/26/2006 6:56:48 AM

11-L-0559/OSD/58233

THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

292

JUN 27 2006

The Honorable Jeb Bush
Governor of Florida
The Capitol
400 South Monroe Street
Tallahassee, FL 32399

Dear Governor Bush

Thank you again for meeting in April to discuss the support of Service Members and their families. During our meeting you indicated an interest in sharing "lessons learned" among Governors, relative to issues impacting the Military. In addition, you shared your own approach of regular "base commander" meetings as a beneficial communication model for others.

We have established a website specifically to share such "best practices" among governors, as well as other state policymakers, regarding a number of key issues impacting the quality of life for our Service members and their families.

27 Jun 06

As part of the website, and the "USA 4 Military Families" initiative, we will be adding two items, based on your suggestion: first, is a "best practice" section on communication with the Military, where we will highlight your example in Florida; and second, a collaboration forum where governors and their senior staff can interactively share ideas and opportunities as they work to assist Service members and their families.

Enclosed you will find an orientation and guidebook that should serve as an introduction to the website. Your additional input is always welcome.

Thanks for your continued partnership.

Sincerely,

14 Apr 06

OSD 10156-06
11-L-0559/OSD/58234
6/28/2006 6:35:53 AM

Department of Defense and States

Partnering to Support Military Families

www.USA4MilitaryFamilies.org

Orientation and Guidebook

The Department of Defense is pleased to work with Governors, other state policymakers, not-for-profit associations, concerned business interests and other state leaders to address important issues which impact the quality of life of military Service and family members as they live and work in states and communities across the nation.

In an effort to share news, online resources, and best practices which address high priority issue areas, DoD has developed USA4MilitaryFamilies.org. This introductory guide explains the purpose, structure and content of this website. It also highlights examples of key website features designed to enhance this partnership, particularly as critical issues intersect with state policy.

Please feel free to contact us through the website with ideas and recommendations as to how we can make this website a true gathering place and information exchange for those dedicated to supporting our Service members and their families.

Dr. David S. C. Chu

Under Secretary of Defense

(Personnel & Readiness)

11-L-0559/OSD/58235

Home Pane: USA4MilitarvFamilies.org

Highlights "Key Issues" identified by the DoD as having a strong impact on military families at the state level & "Best Practices for State/Military Communication."

Mission

The USA4 Military Families initiative seeks to engage and educate state policymakers, not-for-profit associations, concerned business interests, and other state leaders about the needs of Military members and their families, particularly as those needs intersect with state public policy. Through state/military partnerships, DoD seeks to develop relationships with states, work with them to remove unnecessary barriers, and significantly improve the quality of life for military families.

Objectives

Many issues surrounding quality of life and family well-being can only be addressed by states. Much progress has been made on several of these key issues. Currently, efforts are being focused on spouse employment, including unemployment compensation for transferring military spouses, in-state tuition allowances, financial readiness, education, and the pressing needs of severely injured Service members and their families. Many state leaders share our concern for the welfare of our Active Duty, Guard, and Reserve service members and their families living within their borders, and we look forward to making significant progress in 2005-2006.

Kev Issues - The Department of Defense/States Militarv Partnership

Take a look at ten priority issues identified by the Department of Defense as having a strong impact on military families at the state level. View recent activity and news about what states are doing to address them.

Best Practices for State/Military Communication

[Gils Registration Number (UID) Pending]

Key Issues Page

Click on a "Key **Issue**" for more information.

Key Issues - The Department of Defense/States Military Partnership

The Department of Defense is grateful for the support provided by Governors, State Legislators, and policymakers throughout the country, and looks forward to working with all willing leaders to support Service members and their families.

Printable Version

Care of the Guard

Assistance to Severely Injured Service Members

In-State Tuition for Military Dependents

Military Children During School Transitions and Deployments

Spouse Employment

Unemployment Compensation Benefits for Military Spouses

Payday Lending

Voting

Foreign Language Requirements

Child Care Support for Guard and Reserve

Search

Go

Example of Key Issue & Best Practices

Example #1: Unemployment Compensation for Military Spouses

Lists the Issue, Outcome, & Best Practice. Recent Positive Actions by states are also listed.

Unemployment Compensation for Military Spouses

Issue: Frequent moves required of military families add unique financial pressures, as spouses routinely lose income during such moves. Statutes and/or policies of many states view a spouse leaving a job due to a military move as a "voluntary" separation when, in fact, they have no choice in the matter.

Outcome: Granting eligibility to working spouses in transition provides a much-needed financial bridge for military families during mandatory moves, and supports spouses while they seek suitable employment. Unemployment compensation will also allow spouses to obtain necessary new licensing and credentials. If structured properly, states can offer eligibility without economically penalizing the individual employer who lost the working spouse to the move.

Best Practices: ***Georgia*** passed legislation that specifically allows unemployment compensation for military spouses leaving employment due to a military reasssignment. Importantly, this legislation provides language that prevents increased premiums attributable to the individual business, and therefore avoids potential hiring disadvantages to military spouses. **[Article]** **[Bill]**

Map of Unemployment Compensation Benefits for Military Spouses by State

Recent Positive Actions:

Florida **[Article]** **[Bill]**

New Mexico **[Bill]**

Texas **[Article]** **[Bill]**

Search

[Gils Registration Number (UID) Pending]

Example of Kev Issue & Best Practices

Example #2: In-State Tuition for Military Dependents

Lists the Issue, Outcome, & Best Practice. Recent Positive Actions by states are also listed.

In-State Tuition for Military Dependents

Issue: Since the mission of the military requires frequent moves, Service members come under numerous state policies that may hinder their educational choices. The cost of college attendance can be as much as four times in-state rates making education progression unaffordable.

Outcome: Adopt state education policies for troops and families that allow in-state tuition to continue for children after military parents depart.

Best Practices: The Department of Defense has established three criteria when evaluating in-state tuition policy, namely that the in-state rate be applied for family members and dependents...

1) In the state of "record" or legal residence

2) In domiciled state while on duty assignment

3) With continuity of in-state rate for the individual, once established

North Carolina's law meets all three of these criteria (as do **29** other states). [Article] **[Bill]**

Mao of In-State Tuition Benefits for Service Members and Their Dependents by State

Recent Positive Actions:

Georgia **[Article]** [Bill]

Kansas **[Article]** **[Bill]**

Maryland [Article] **[Bill]**

New Mexico [Article] **[Bill]**

Texas [Article] **[Bill]**

~~FOUO~~

PD | Detainees

May 15,2006

TO: Ryan Henry

CC: Dorrance Smith

FROM: Donald Rumsfeld DR.

SUBJECT: Increasing GTMO Transparency

I would like to review our proactive plan to increase transparency even further at GTMO.

Thanks.

DHR.dh
051506-16

Please Respond By 06/08/06

~~FOUO~~

OSD 10167-06

11-L-0559/OSD/58240

6/26/2006 9:08:07 AM

6/26
1550

HOMELAND
DEFENSE

ASSISTANT SECRETARY OF DEFENSE
2600 DEFENSE PENTAGON
WASHINGTON, DC 20301-2600
ACTION MEMO

DSD
JUN 2 3 2006 USD(P)

353

JUN 2 1 2006

FOR SECRETARY OF DEFENSE

FROM: Paul McHale, Assistant Secretary of Defense (Homeland Defense)

SUBJECT: Memo to Secretary Chertoff

- You asked for a memorandum to Secretary Chertoff regarding the Department's comprehensive training and exercise program (TAB B).
- We are working with the Department of Homeland Security to finalize the National Exercise Program schedule for FYs 06-11. The schedule will synchronize large-scale, national exercises in order to evaluate the progress made in implementing the lessons learned from Hurricane Katrina (TAB C). The National Exercise Program is on the Homeland Security Council Deputies' Committee calendar in July.
- We are also working with DHS to develop realistic scenarios that include participation by the senior leadership of each Department and Agency.

RECOMMENDATION: Sign the memorandum at TAB A.

COORDINATION: TAB D

Attachments:
As stated

Prepared by: Mr. Wauchop, Director, CT, OASD(HD)/FP & E, (b)(6)

21 Jun 06

5 Jun 06

MA SD		SMA DSD	
TSA SD		SA DSD	
EXEC SEC	M 6/26	1520 6/26 1730	
ESR MA	Q 6/26	STF DIR	

6-06 09:53 IN

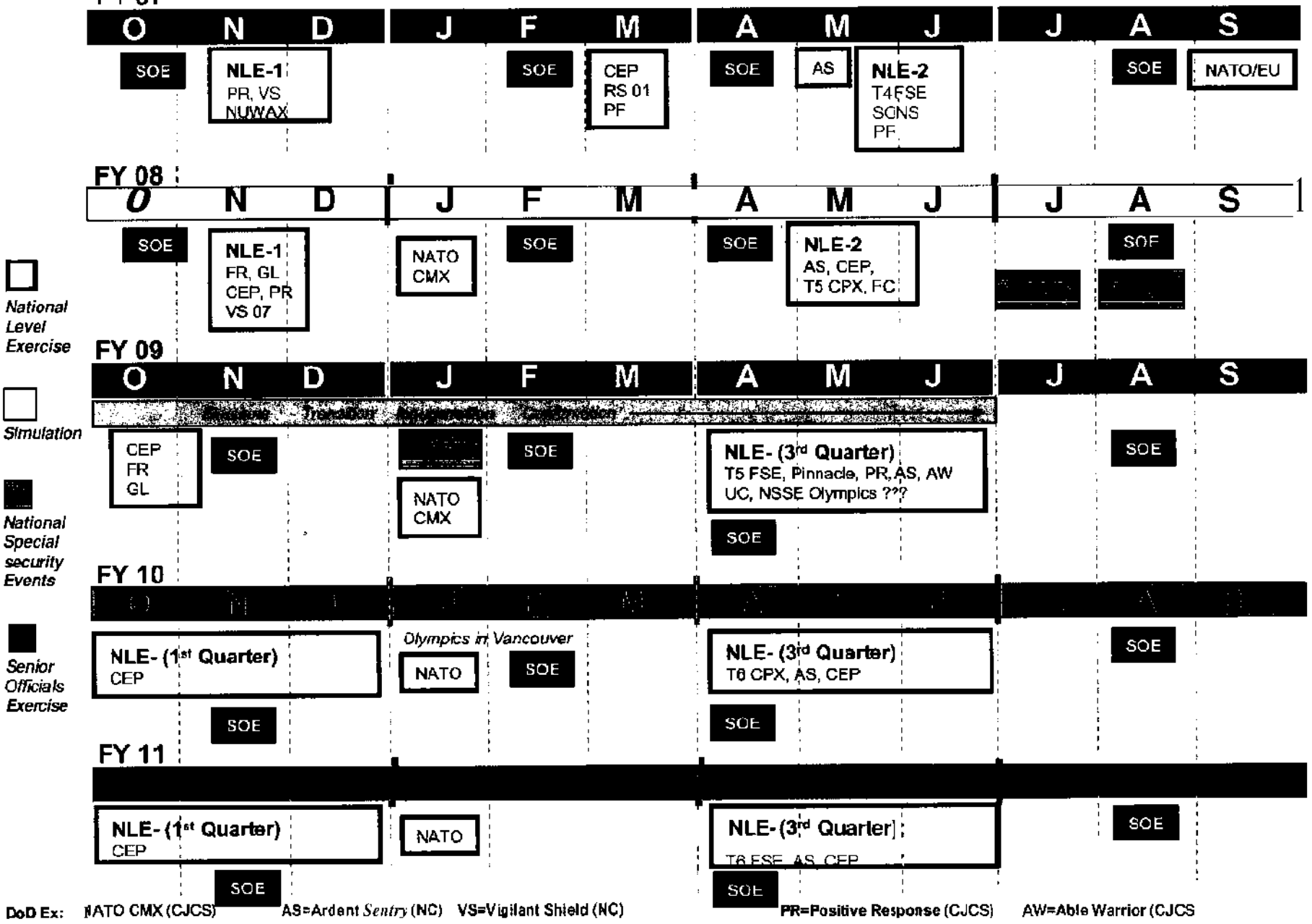
11-L-0559/OSD/58241

I-06-007249-ES

OSD 10174-06

6/26/2006 10:46:49 AM

The Department of Homeland Security 5 Year Exercise Forecast



POLICY COORDINATION SHEET

Subject: Memo *to* **Secretary** Chertoff
Control Number: 06/007249-ES

Title/Organization	Name	Date
Joint Chiefs of Staff	VDJS, MAJGEN, USAF	22JUN06

~~FOUO~~

JUN 0 5 2006

TO Paul McHale

CC: Eric Edelman

FROM: Donald Rumsfeld

SUBJECT: Memo to Secretary Chertoff

Someone might draft a memo from me to Michael Chertoff about training and exercises, and the fact that DoD has a comprehensive exercise program and a five-year schedule.

However, others seem not to be doing it. Exercises are needed to get good at it. Others seem to feel DoD does too much exercising, possibly because they don't have enough people to participate fully

Any thoughts?

Thanks.

DHR.dh
060106-06 (TS).doc

Please respond by June 29, 2006

~~FOUO~~

OSD 10174-06

11-L-0559/OSD/58244

6/26/2006 6:46:01 AM

THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

3 3

JUN 27 2006

The Honorable Michael Chertoff
Secretary of Homeland Security
Department of Homeland Security
Washington, DC ***20585***

Dear Secretary Chertoff:

The Department of Defense has a comprehensive training and exercise program that has shown to be of great benefit. We plan our exercises on a five-year schedule and support your efforts to develop a five-year exercise schedule. For maximum benefit, it is critical that we synchronize large-scale, national-level exercises that stress the national response system at every opportunity.

A robust training and exercise program that reinforces the lessons learned from Hurricane Katrina and other events will ensure our national, state, and local first responder communities are ready to respond to catastrophic incidents. We stand ready to assist you.

Sincerely,

27 Jun 06

5 Jun 06

OSD 10174-06
6/28/2006 6:37:57 AM
11-L-0559/OSD/58245

THE SECRETARY OF DEFENSE
WASHINGTON

Sweden

JUN 26 2006

Her Excellency Leni Bjorklund
Ministry of Defence
SE-103 33 Stockholm
Sweden

Dear Minister Bjorklund

I am *sorry* to have missed you on your visit to the Pentagon on Tuesday, as I was feeling a bit under the weather that day.

Gordon England tells me that the two of you had the opportunity to have a good discussion.

With best wishes,

Sincerely,

26Jun06

OSD 10204-06
11-L-0559/OSD/58246
6/27/2006 6:18:35 AM

421
1430

~~FOUO~~

June 21,2006

TO: Robert Rangel

FROM: Donald Rumsfeld

SUBJECT: Draft a Letter to Sweden's MOD

Let's get a letter drafted to the MOD of Sweden telling her I'm *sorry* I missed her yesterday when Gordon England took the meeting on my behalf.

Thanks.

DHR.ss
SF062106-02

Please Respond By June 26,2006

OFFICE OF THE SECRETARY OF DEFENSE
THE SPECIAL ASSISTANT

TO - Bill M

- Draft ltr.

p/s.

6/22
0430

R.

FOR REVIEW
6/22
OK
R / SEND IN for SD
REVIEW / SIGNATURE

~~FOUO~~

6/27
1515

JUN 22 2006

~~FOUO~~

ACTION MEMO

JUN 26 2006 DV 6/28

USDP

DepSecDef

Colombia

FOR SECRETARY OF DEFENSE

FROM: Peter W. Rodman, Assistant Secretary of Defense (ISA) JUN 22 2006

Robert Rangel

SUBJECT: Plan for Colombia and Peru Trade Agreements in Congress

6/27

You asked for a plan to help ratify the Colombia and Peru trade agreements. Before we start working on Congress, we recommend you write USTR offering to help during the ratification process (Tab A).

- USTR should know we want to help, and give us the cue on when to weigh in.

- As with CAFTA, our role should be to help explain the national security arguments, and how these countries should be seen as part of a friendly strategic system.

The agreements will have to be ratified separately.

- Peru: Agreement signed, GOP claims its Congress will ratify in July. USTR delivered Peru's FTA to our Congress for review before the August recess (and before Toledo leaves office). We think it is on track for successful conclusion.

- Colombia. Almost there, but unfortunately not quite. Some discrepancies remain in the final texts of the agriculture chapter. Colombia's Ambassador Pastrana indicates that the complications with the agricultural chapter raise critics' suspicions.

- Ambassador Pastrana urged DASD Pardo-Maurer to have DoD weigh in with USTR to quickly move on the Colombia FTA as the best way to manage Chavez' efforts to destroy the Community of Andean Nations (CAN). Since then, senior USTR and GOC officials have met to review differences, after lower-level efforts to reconcile the texts were not successful. They are meeting again the week of 26 June.

- The complications will prevent Congress' approval of Colombia's FTA before the end of this year. After verification USTR must provide 90-day notification to Congress in advance of signing. Once signed, the FTA must undergo a 45-to-90 days International Trade Commission review.

We propose the following immediate action:

OSD 10214-06
6/27/2006 8:27:57 AM

26 Jun 06

MA SD		SMA DSD	
SA SD		SA DSD	
EXEC SEC		STF DIR	
ESR MA			

~~FOUO~~

SD WHA, (b)(6)

11-L-0559/OSD/58248

D6/002691-ES

- Letter to USTR offering to help move the trade agreements through Congress.

Then, when appropriate we could take these steps:

- As Congress considers the Colombian FTA approval, invite the new Colombian MOD to Washington for a get acquainted meeting and focus on regional stability and economic prosperity.
- Host a reception for key members of Congress as you did for the CAFTA-DR.
- Write an Op-ed on security implications of FTAs.
- In coordination with USTR, communicate with select members of Congress.
- Provide senior DoD officials specific Talking Points on FTA security links.
- If necessary, make phone calls during the vote arguing for the agreements' approval.

RECOMMENDATIONS:

- SecDef signs letter to USTR.

_____ Agree / _____ Disagree / _____ Other

- SecDef approves next steps.

_____ Agree / _____ Disagree / _____ Other

COORDINATION: Tab B

Attachment: USTR Letter

THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

Ambassador Susan C. Schwab
United States Trade Representative
600 17" St. N.W.
Washington, DC 20508

Dear Ambassador Schwab:

Congratulations on your confirmation as United States Trade Representative. ~~You are the right person for the job~~

I am writing to you about Peru and Colombia's Free Trade Agreements. I understand Peru's FTA is on track and Congress should approve it before the summer recess. Colombian Ambassador Pastrana asked for my help to get Congress to approve Colombia's FTA once the details on the agricultural chapter are resolved.

We have been through this drill before with Central America. As with CAFTA-DR, ~~I can help explain~~ the national security arguments for these agreements, and how Peru and Colombia should be seen as part of a friendly strategic system.

~~I look forward~~ We are available to helping you win support from Congress to secure these important agreements.

We would like to be helpful in other ways

Sincerely,

Rob

~~FOUO~~

COORDINATION SHEET

Subject: Plan for Colombia and Peru Trade Agreements in Congress

Control Number:

Title/Organization	Name	Date
USD (P)	Amb. Eric Edelman	
PDUSD for Policy	Ryan Henry	
PDAS for ISA, OUSDP	~~Mary~~ Beth Long	19 MAY 2006
DASD WHA	(Vacant)	N/A
PD WHA	Caryn Hollis	June 22,2006
Joint Staff/J5/Americas Division	COL Phil Battaglia	June 15,2006
PD for WH, OUSDP	Caryn Hollis (Drafter)	June 17, 2006

11-L-0559/OSD/58251

158

~~FOUO~~

April 12, 2006

041206-23

TO. Roger Pardo-Maurer

CC: Eric Edelman
Robert Wilkie

FROM Donald Rumsfeld DR.

SUBJECT: Plan for Colombia and Peru Trade Agreements in Congress

Let's put together a plan as to how we can help get the trade agreements for Colombia and Peru pushed through the Congress. We want to help.

Let's get a plan laid out and see what we should be doing.

Thanks.

DHR.ss
041206-23

Please Respond By 05/04/06

6/28

JUN 28 2006

SNOWFLAKE RESPONSEATTACHED

~~FOUO~~

THESECRETARYOFDEFENSE
WASHINGTON, DC 20301-1000

JUN 29 2006

Ambassador **Susan** C. Schwab
United States Trade Representative
600 17th St. N.W.
Washington, DC **20508**

Dear Ambassador Schwab,

Congratulations on your confirmation **as** United States Trade Representative.

I am writing to you about Peru and Colombia's Free Trade Agreements. I understand Peru's FTA is on track and Congress should approve it before the summer recess. Colombian Ambassador Pastrana asked for our help to get Congress to approve Colombia's FTA once the details on the agriculture chapter are resolved.

We have been through this drill before with Central America. As with CAFTA-DR, we would like to be helpful in explaining the national security arguments for these agreements, and how Peru and Colombia should be seen as part **of** a friendly strategic system.

We are available to help in your efforts to gain support from Congress to secure these important agreements.

Sincerely,

OSD 10214-06
11-L-0559/OSD/58253
6/29/2006 3:55:55 PM

~~FOUO~~

May 15, 2006

051606-14

TO: Eric Edelman

CC Richard Lawless
Dorrance Smith

FROM: Donald Rumsfeld

SUBJECT: Furthering Interests with *China* via Olympics

How can we leverage the window of opportunity opened by the Olympics to further our diplomatic and security interests with *China*?

We need Department of State collaboration and a USG position on a way forward.

Thanks.

DHR.db
051506-14

Please Respond By 06/22/06

China

15 Jun 06

~~FOUO~~

OSD 10217-06

11-L-0559/OSD/58254

6/27/2006 8 46 19 AM

TAB

~~FOUO~~

May 24,2006

TO: Gen Pete Pace

FROM: Donald Rumsfeld DR.

SUBJECT: Tasking for Petraeus

I made a decision some time back that I wanted Petraeus to not only do the job we were assigning him to, but also to think broadly about the training and equipping task, and how we can improve how we do it.

I was surprised today to hear Schoomaker say they have assigned Petraeus the task of developing counter-insurgency strategy. Do you know anything about that?

Thanks

DHR:dh
052406-

Please Respond By: 06/01/06

~~FOUO~~

Tab

OSD 10226-06

11-L-0559/OSD/58255

CHAIRMAN OF THE JOINT CHIEFS OF STAFF
WASHINGTON, DC 20318-9999

CM-0357-06
26 June 2006

INFO *MEMO*

FOR: SECRETARY OF DEFENSE

FROM: General Peter Pace, CJCS VR/P 25 Jun 06

SUBJECT: Tasking for Petraeus (SF 052406-11)

In response *to* your question (**TAB**), Lieutenant General David Petraeus, US Army, s filling two roles at Fort Leavenworth.

- He is Director, Joint Center for International Security Force Assistance (JCISFA), and Commanding General, Combined ***Arms*** Center (CAC).
  - The mission of the CAC is to provide leadership and supervision for US Army doctrine development to include counterinsurgency doctrine.
  - The mission of the JCISFA is to capture and analyze security force assistance lessons learned and advise the combatant commands and Military Departments on doctrine and practices.
- General Petraeus' two roles enable him to maximize JCISFA's impact by using the *existing* CAC organization for support. The decision to **put** JCISFA at Fort Leavenworth has created enormous training and equipping synergies

COORDINATION: NONE

Attachment:
As stated

Prepared By: Lieutenant General Victor E. Renuart, USAF; Director, J-5; (b)(6)

11-L-0559/OSD/58256

OSD 10226-06

6/27/2006 9:23:51 AM

7/17
1845 ✓

THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301-1200

7/18

HEALTH AFFAIRS

ACTION MEMO

JUL 13 2006

292

FOR: SECRETARY OF DEFENSE

FROM: William Winkenwerder, Jr., MD, ASD (Health Affairs)

SUBJECT: Response to Dr. Henry Betts on Treatment of War Veterans

- Dr. Henry Betts wrote you concerned that the press "is making a big jumble of information involving the treatment of war veterans" (TAB B).
- Our response (TAB A) shares his concerns, but points out that Department of Defense actions and messages regarding care and rehabilitation of injured members are focused, consistent, and working.
- We point out the Department of Defense—Department of Veterans Affairs' seamless trausition program of taking care of troops after they have been wounded, when they return home, and when they are discharged.
- Further, we call attention to the DoD Military Severely Injured Support Center and each Service Snpport Centers' efforts supporting injured members and their families.
- Following visits to these facilities, Dr. Betts praised DoD's efforts to care for our injured Service members and their families as "impressive" and "commendable."
- Finally, we indicate that we continue to seek ways to improve our efforts to assist these heroes through input from Service members, families, and experts.

RECOMMENDATION: That the Secretary of Defense sign the letter at TAB A.

COORDINATION: USD (P&R)

Attachments:
As stated

Prepared by: Lt Col Ruscio, C&PP, (b)(6) DOCS Open 110111, 109641

13 JUL 06

13 JUL 06

MA SD	7/18	SMA DSD	
SA SE	7/17	SA DSD	
EXEC SEC	7/17 1845	7/18 0730	
ESR MA	7/17	STF DIR	

11-L-0559/OSD/58257

OSD 10253-06

7/17/2006 8:21:09 AM

~~FOUO~~

JUN 2 9 2006

2 2

TO Bill Winkenwerder

CC: David Chu

FROM: Donald Rumsfeld

FILE COPY

SUBJECT: Letter from Dr. Henry Betts on Treatment for War Veterans

Attached is a note from my friend, Henry Betts. What do you suppose I ought to say to him, and is there anything else we ought to be doing? We certainly want to do everything humanly possible.

Thanks.

Attach: 6/1/06 Letter from Henry Betts, M.D.

DHR.ss
SF062806-12

Please Respond By July 18, 2006

JUL 18 2006
SNOWFLAKE RESPONSE ATTACHED

29 Jun 06

1 Jun 06

OSD 10253-06

11-L-0559/OSD/58258

7/17/2006 8:17:37 AM

Rehabilitation Institute of Chicago

345 East Superior Street
Chicago, Illinois 60611.4496
312-238-1000 telephone
www.ric.org

292

1st June 2006

Donald H. Rumsfeld
Secretary of Defense
1000 Defense Pentagon
Washington, DC 20301-1000

Dear Don:

It seems to me that the press is making a big jumble of information involving the treatment of the war veterans. When listening to interviews and reading articles, it is very hard to tell what is being done.

There are those who say there is "no problem at all" – particularly those from the VA – and there are those who say that nothing is being accomplished at all for the severely disabled.

I certainly know of your intent and I suppose nobody has a better chance of actually "mandating" that the proper care be indeed given.

Nobody mentions that I suspect that most Americans wouldn't even mind having their taxes raised a bit to see that these servicemen get what is needed – particularly after experience in the Vietnam War.

Somebody from the VA, a Doctor Perlin, is coming to visit the Institute 15th June. The President of the Rehabilitation Institute of Chicago, Wayne Lerner, is on a committee with him as is your associate, Doctor Winkenwerder, whom I have tried to reach to tell him about Lerner.

We can indeed show him many patients similar to the ones badly injured in the present war and the ways in which we treat them and how we can reach out to follow them up after discharge (which I think is a very serious issue).

This hospital was founded by the first Medical Director of the VA (he built 372 hospitals) and the VA Rehabilitation Department (at Northwestern) was in my Department of Physical Medicine & Rehabilitation. I was also on the "Mission Commission" with the VA.

1 Jun 06

OSD 10253-06
6/27/2006 12:49:37 PM

11-L-0559/OSD/58259

I know very well how they operate and what difficulties they may have.

Obviously, there is more and more interest in the "injured" but still the press emphasis is on the amputees.

A most remarkable place I saw was at Arlington where they had this incredible system for follow up and maintaining long-distance contact – in the Defense Department.

Sincerely,

Henry Betts, M.D.
Past Medical Director/President/CEO
Rehabilitation Institute of Chicago

HBB/mg

THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

JUL 18 2006

2792

Henry Betts, MD
Rehabilitation Institute of Chicago
345 East Superior Street
Chicago, IL 60611-4496

Dear Henry:

Thank you for your letter on June 1, expressing concerns over media messages regarding the care and treatment for our injured heroes.

While we share your concerns, I can assure you that Department of Defense actions and messages regarding the care and rehabilitation of injured Service members are accurate, focused, and consistent. We take care of our troops when they are wounded, when they return home, and after they are discharged through programs that ensure quality care.

Our programs are working well. The Department of Defense—Department of Veterans Affairs program at Walter Reed Army Medical Center and at other military hospitals provides case management for injured veterans. Department of Veterans Affairs social workers, working on-site, coordinate transfer of care, establish appointments at Department of Veterans Affairs Medical Centers near patients' homes, and follow patients to ensure success after discharge. The Services' Support Centers and the Department's Military Severely Injured Support Center work with a wide variety of agencies and programs to assist during transition from military service, through rehabilitation, and into civilian life, including employment.

We are always working to improve our efforts to care for these heroes. Through input from injured Service Members, their families, and our interagency partners, we are continuously improving the treatment for injured Service Members and our Veterans. Your expert input is especially valuable.

I know you have visited our facilities and provided input to my staff. I appreciate your expert opinions and thank you for your concern for our injured.

Sincerely,

18 Jul 06

1 Jun 06

OSD 10253-06
7/18/2006 15:53 PM
11-L-0559/OSD/58261

June 27,2006

TO: President George W. Bush

CC: Vice President Richard B. Cheney
Stephen J. Hadley

FROM: Donald Rumsfeld DR

SUBJECT: LTG Marty Dempsey

Attached is a background sheet on one of our most promising 3-star Army officers. General Dempsey is in charge of training the Iraqi Security Forces. He briefed you last year on his current mission. He is first-rate. He will be with me when we come over tomorrow.

Respectfully,

Attach. Background Sheet

DHR.db
SF062706-05

OSD 10257-06
6/27/2006 1:29:09 PM

11-L-0559/OSD/58262

Lieutenant General Marty Dempsey

- Head of training all Iraqi Security Forces since fall 2005
- West Point graduate, class of 1974
- Extensive prior experience in Middle East
    - Head trainer for Saudi National Guard, 2001-2003
    - Division Cmdr in Baghdad early in War, 2003-2004
    - Combat experience DESERT STORM and OIF
- Superb thinker, writer, briefer – at the very top of the Army's General Officers as a public communicator
- Personable, sensible, modest – reputation as a team builder
- Three children with military experience:
    - Son, West Point graduate, Army CPT, just mamed, just returned from deployment to Iraq
    - Daughter, Army LT, about to deploy to Iraq
    - Daughter, West Point graduate, former Army officer

~~FOUO~~

June 21,2006

TO: Robert Wilkie

FROM: Donald Rumsfeld DR.

SUBJECT: List for Congressional Members

When I meet with the Congress, I ought to have a list of things the Congress needs to do, *so* that we can win this Global War on Terror. We need greater flexibility. I need to have a list, so I can bring it up every time I see them.

Please pull a list together for me, coordinate it around the Department, and get it to me in the next week.

Thanks.

DHR.ss
SF061306-21

Please Respond By 06/28/06

~~FOUO~~

OSD 10286-06
6/28/2006 7:47 17 AM
11-L-0559/OSD/58264

THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1300

LEGISLATIVE AFFAIRS

INFO MEMO

June 27,2005, 6:00 P.M.

FOR SECRETARY OF DEFENSE

FROM: Robert Wilkie, Acting Assistant Secretary of Defense for Legislative Affairs, (b)(6)

Robert L Wilkie

SUBJECT: Snowflake Response – List for Congressional Members, #061306-21

- This is a first response to a June 21 snowflake listing the things Congress must do to give the Department greater flexibility in fighting the war on terror.
- We have also listed a series of Congressional adds that make it more problematic for the Department to continue the transformation necessary to vigorously pursue the fight.
- This list will be refined for your use in future Congressional engagements.

Attachment: As Stated

OSD 10286-06

11-L-0559/OSD/58265

6/28/2006 7:47:47 AM

This is What We Need to Help Win the GWOT

To get Americans out of the fight we need to put more allies in the field. We must have:

Train and Equip. A stronger Section 1206 Train and Equip Authority is necessary to increase our flexibility and responsiveness in building partner security capacity. The current authority should he modified (expanding coverage to all security forces, increasing amount, eliminating sunset) to maximize its effectiveness. Conference issue.

Global CERP. Global Commander's Emergency Response Program builds on the effectiveness of this tool in current theater of operation. This will allow commanders to address civilian needs in support of military missions. Conference issue.

Defense Coalition Support Account. Commanders need an account for advance purchases of equipment to be used by coalition partners in the Global War on Terror. This is needed for partners who fight with American forces and to train and equip partners. Currently, even when authority and funding are available, it can take months or years to procure vital equipment. This proposal was submitted as part of the FY07 legislative program, hut has not been adopted by either house.

Delink **IMET** from ASPA. Allows International Military Education and Training (IMET) even if parties to the International Criminal Court and have not signed the appropriate "Article 98" Agreements. Exempts IMET from all restrictions of the American Service Members Protection Act (ASPA). Conference issue. Chavez and Castro are using oil money to educate and train Latin American officers while we are prevented from doing so because of ASPA. (This position is at odds with State and the White House.)

Logistical Support for Allied Forces in Contingencies. Provides authority to provide logistical support, supplies, and services to allied forces participating in combined ops with U.S. armed forces on a non-reimbursable basis. Conference issue.

Regional Centers for Security Studies. The Secretary of Defense needs authority to waive the cost of activities (tuition, travel, room and board) for non-government foreign civilians to attend the department's Regional Centers for Security Studies. This authority has been rejected by the HASC and SASC for two years in a row. We need this to build relationships between our military and foreign civilian opinion leaders, like professors, NGO officials and journalists.

Joint Urban Operations. The 2006 QDR notes that "defeating terrorist networks highlights the need for...urban warfare capabilities." One opportunity requiring Congressional support throughout future budget appropriations processes is development of a large-scale joint urban ops facility. The infrastructure would support civilian role players, provide a dynamic intelligence scenario capability, along with feedback and debriefing capabilities, and "smart targets" that facilitate urban close air support/air surveillance operations training. Conference issue.

This is what is hurting us:

Refusal to address healthcare costs.

Forcing DOD to keep redundant systems such as:

- U-2 and B-52.
- Ships the Navy doesn't need.
- JSF second engine.

Military Health Care - Sustaining the Benefit. Encourage Congress to support efforts to phase-in adjustments in order to control the rising cost of supporting this benefit.

Growing Entitlements. We oppose the unnecessary expansion of entitlement benefits for retired military members and their survivors. They duplicate existing benefits, cost billions, and don't contribute to recruiting, retention or readiness. We reject the Senate's approach to provide a windfall in duplicate receipt of disability payments from DoD and **VA,** for any retirees designated by **VA** as unemployable.

~~FOUO~~

June 21,2006

TO: Robert Wilkie

FROM Donald Rumsfeld

SUBJECT: List for Congressional Members

When I meet with the *Congress,* I ought to have a list of things the Congress needs to do, so that we can win this Global War on Terror. We need greater flexibility. *I* need to have a list, so *I can bring* it *up every time* I see *them.*

Please pull a list together for me, coordinate it around the Department, and get it to me in the next week.

Thanks.

DHR.ss
SF061306-21

Please Respond By 06/28/06

~~FOUO~~

~~FOUO~~

June 15,2006

TO: Robert Wilkie

FROM: Donald Rumsfeld

SUBJECT: Request *from* the Congresswoman for Incident Report

What are you going to do about the Congresswoman who wanted an incident report for her constituent?

Thanks.

DHR.ss
SF061506-07

Please Respond By 06/28/06

~~FOUO~~

OSD 10343-06
6/28/2006 3:25:41 PM
11-L-0559/OSD/58269

THE SECRETARY OF DEFENSE
WASHINGTON

JUL 6 2006

3331

The Honorable Ginny Brown-Waite
United States House of Representatives
Washington, DC 20515

Dear Representative Brown-Waite,

I am informed that the **Army** has been in contact with you and your constituent regarding the matter you raised with me during my last visit.

I appreciated you letting me know of the problem and trust you will let us know if we can be of additional assistance.

With best wishes,

Sincerely,

6 Jun 06

OSD 10343-06

7/6/2006 3:44:51 PM

11-L-0559/OSD/58270

P 7/5

June 29,2006

SecDef –

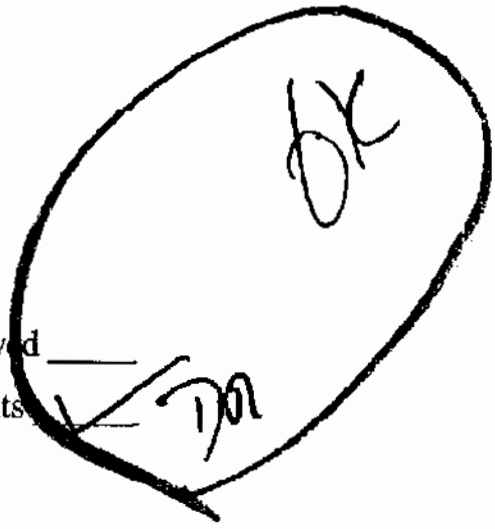
- Attached memo provides update on follow up with Rep. Brown-Waite on casualty information issue.

- She raised this matter with you during the last "Theme Team" meeting hosted by Rep. Blunt.

- Suggest you send her a short note to establish a record of response.

- Suggested draft is attached.

Robert



Approved ____

See edits ____

LEGISLATIVE AFFAIRS

THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1300
UNCLASSIFIED

INFO MEMO

June 28,2006 2:00 PM

FOR: SECRETARY OF DEFENSE

FROM: Robert Wilkie, Acting Assistant Secretary of Defense for Legislative Affairs, (b)(6)

SUBJECT: Request from Congresswoman Ginny Brown-Waite (R-FL), Snowflake #061506-07

- You asked me to take action on Congresswoman Brown-Waite's request for an incident report for her constituent. Congresswoman Brown-Waite was not satisfied with the Army's response to her request that the family be provided the details of his death.
- As we discussed at Roundtable last week, we resolved the issue regarding her request for an incident report to her constituent
- At my request, the Army sent an officer (a Lieutenant Colonel) to meet with the Member and the constituent on June 20th.
- The Army briefer fully explained the details of the event to the satisfaction of both the constituent and the Congresswoman.
- For your awareness, we were able to secure the briefing from the Army the same day she approached you with this matter (during the Congressman Blunt theme team event).

Attachments:
Snowflake #061506-07

Prepared by: Dan Wilmot, Director of Intergovernmental Affairs, (b)(6)

OSD 10343-06
6/28/2006 3:25:52 PM
11-L-0559/OSD/58272

~~FOUO~~

June 15,2006

TO: Robert Wilkie

FROM: Donald Rumsfeld DR.

SUBJECT: Request from the Congresswoman for Incident Report

What are you going to do about the Congresswoman who wanted an incident report for her constituent?

Thanks.

DHR.ss
SF061506-07

Please Respond By 06/28/06

~~FOUO~~

11-L-0559/OSD/58273

CHAIRMAN OF THE JOINT CHIEFS OF STAFF

WASHINGTON, D.C. 20318-9999

INFO MEMO
JUN 27 2006

FOR: SECRETARY OF DEFENSE

FROM: General Pete Pace, CJCS PP/R 27 Jun 06

SUBJECT: Criticism of Rotation (SF 052406-02)

- **Answer.** In response to your question (TAB), I feel that we are properly handling the rotations of our key leaders in Iraq.
- **Analysis.**
  - No rotation of a key general or flag officer (G/FO) occurs without consulting our senior leadership on the ground in Iraq. GENs Abizaid and Casey provide input on every G/FO coming out of, or going into the AOR. If the timing does not support the rotation of a key G/FO, we will extend their tour.
  - As you know, we have also begun the process of notifying you in advance of changes to key 1- and 2-star billets during the Personnel Meetings. These notifications are made only after consulting with GENs Abizaid and Casey and incorporate their recommendations.
  - Many of the replacement personnel identified for assignment to these key billets are returning to Iraq for subsequent tours. This brings us fresh, but seasoned warfighters to the fight.
  - While I strongly support maintaining unit integrity, I will not hesitate to advise you if I feel it is in the best interest of the mission to keep a senior leader in Iraq when the unit rotates.

COORDINATION: Army and Marine Corps

Reference:
1 SecDef Snowflake 052406-02

Prepared By: General Peter Pace, CJCS, (b)(6)

FT-E-0559/OSD/58274

OSD 10345-06

6/28/2006 3:43:15 PM

~~FOUO~~

May 24,2006

TO: Gen Pete Pace

FROM: Donald Rumsfeld D.R.

SUBJECT: Criticism of Rotation

Look at this criticism of the rapid rotation of the military. Any thoughts?

Thanks.

Attach. Graham, Bradley. "Rotation of Top Military Criticized," *Washington Post,* November 25,2005, p. 33

DHR.dh
052406-02

***Please Respond** By 06/19/06*

OSD 10345-06
6/28/2006 3:39:05 PM

"We just flat out didn't have the right tools in place to red flag a detainee," said an Army general in detainee operations in Iraq. "We have since altered a lot of things."

The case is also a some of continuing tension between intelligence officers and those responsible for detainees over whether procedural changes are needed to prevent accidental releases. Several military officials agreed to discuss some details of the case on the condition that they not be identified, citing restrictions on discussing classified information.

The handling of prisoners, a delicate issue because of the Abu Ghraib abuse scandal, took on renewed urgency on Nov. 13 when American troops raided an Interior Ministry building in Baghdad and found that at least one-third of the about 170 prisoners showed signs of torture.

American military officials in Baghdad also revealed that two of the four suicide bombers who attacked hotels in Jordan on Nov. 9 had the same names as Iraqis who had been released from American-run detention centers after Army officials decided there were no grounds to hold them.

Until the Jordan bombings, much of the pressure on American authorities - from Iraqis with relatives in custody and from United Nations officials - has been to expedite the release of Iraqi detainees, many of whom are held for long periods with no access to fledgling Iraqi courts. A United Nations report this month noted that "the overall number of detainees continued to increase due to mass arrests," a situation that it said needed "urgent" remedy.

The Army says that while it continues to arrest large numbers of insurgents it is also releasing many.

"We continue to have detainee releases every 7 to 10 days," said Lt. Col. Guy Rudisill, a spokesman for the Army's detainee operations command in Iraq. "Since the end of August, we have released approximately 2,800 security detainees."

When American troops captured Mr. Amry in October 2004, they had little reason to think he was more than a foot soldier in the insurgency.

He was captured in Anbar Province in a group of armed Iraqis who appeared to be preparing to attack American forces, records reviewed by Army officials said. Bomb-making material was found with the group but not in his possession, an Army intelligence official said.

At a holding center near Falluja, Mr. Amry said he was a student who sometimes drove a taxi and a truck. Soldiers took his picture and other identifying information and sent him to Camp Bucca in southern Iraq.

Before the arrest, the Combined Exploitation Cell, a squad of civilian bomb experts and military intelligence personnel formed to identify bomb makers, sent remnants of an explosive device that had gone off in Baghdad a year earlier to a laboratory near Washington for analysis. When the lab results were compared with a database on Iraqi detainees, Mr. Amry's name popped up. After Army intelligence personnel in the Washington area were informed of the results in January, they notified Task Force 134, the Army command in Iraq responsible for detainees, a military intelligence officer said.

"We had individuals specifically telling Task Force 134, 'Don't let this guy go,' " the officer said, adding that the case received much attention because it was the first proof that use of forensic analysis might actually help stem bomb attacks.

Colonel Rudisill, a spokesman for the task force, said it had been told only that there was a "possible link between Alwan and the I.E.D. incident," a reference to improvised explosive device. He said the computer system used to keep track of detainees, the Biometric Automated Toolset, did not easily "allow a user to see if new information had been added to a detainee's file."

The colonel said some evidence suggested Mr. Amry was not a bomb maker, but someone who hid bombs.

A more complete forensic analysis confirmed the preliminary results, the Army intelligence official said. Mr. Amry was later linked to several bombings, one of which "may have involved U.S. military casualties," another official said, refusing to provide details of these attacks.

But in March, when his case came before the Combined Review and Release Board, a panel of American and Iraqi officials who examine evidence against detainees, his dossier did not have his Biometric Automated Toolset file, the Army intelligence official said. The only indication that he was suspected of making bombs was a notation that read "M.I. hold," meaning that military intelligence did not want him released, be added. A sergeant charged with reviewing the files before they went to the review board did not notice the entry, the general involved in detainee operations said. The panel ordered Mr. Amry released into the custody of a relative, who was supposed to vouch that he would not rejoin the insurgents, the officials said. Mr. *Army* was then sent to Abu Ghraib briefly for processing and released.

Only after he was freed on June 16 did military officials realize their error and act to prevent other mistaken releases. Despite operations aimed at recapturing him, Mr. Amry is still at large, they say.

Washington Post
November 25, 2005
Pg. 33

4. Rotation Of Top Military Criticized

Strongest Leaders Should Stay in Iraq, Some Experts Say

By Bradley Graham,
Washington Post Staff Writer

Imagine after the Battle of Fredericksburg, during the Civil War, if Jefferson Davis had telegrammed Gen. Robert E. Lee, saying: "You've been out there for a year now. Why don't you come back to Richmond?"

Or what if Gen. George S. Patton, after the North African and Italian campaigns in World War II, had been told that he had served sufficient time in the field and would be returning to Washington for an office assignment instead of going on to the Battle of the Bulge?

In generations past, when generals went off to lengthy wars, they tended to stay away for years. But consider the current case of Iraq. There, the Pentagon has adopted a policy of rotating generals about as frequently as it rotates troops, which means few have remained in the field longer than a year at a time.

Justifying the periodic changeover in top brass, defense officials cite a desire to keep commanders with the divisions and corps they lead and thus maintain unit cohesion. Other considerations play a part, too, officials say, including the grueling, unconventional nature of the conflict, a concern for sustaining a decent quality of life in today's all-volunteer military and the prospect that U.S. involvement in Iraq is going to last awhile and so will require a system for replenishing military leaders as well as their forces.

"It's a pretty hard existence," said one Army general who has served in Iraq. "It's 16, 17, 18 hours a day, Seven days a week, nonstop in another culture, operating at 120 degrees heat on occasion.

"It's not only the troops we have to care about," he added.

"It is senior leaders as well and they do have kids and families."

Still with the U.S. military occupation of Iraq now well into ita third year, some defense experts in Congress and think tanks have challenged the turnover in senior military posts, warning that it has led to a loss of experienced leadership in the field.

"This is deeply unwise," Sen. John McCain (R-Ariz.) said in a spach earlier this month, adding his voice to those complaining about the rotation policy. "If these were the best men for the task, they should still be on the job.

"These generals and other senior officers build, in their time in Iraq, the on-the-ground and institutional knowledge necessary to approach this conflict with wisdom," he added. "We need these commanders and their hard-won experience to stay in place."

Such arguments for extending the tours of top officers come against the backdrop of mounting calls in Congress for withdrawing U.S. troops from Iraq altogether. But even if U.S. force levels start to decline next year as expected, generals probably will be needed for some time to lead those troops still in country.

Two generals who played key roles commanding US. troops during the rise of Iraq's insurgency in 2003 and 2004 have spent this year in Pentagon office jobs: Lt. Gen. James T. Conway, who headed Marine forces in western Iraq, now serves as chief operations officer on the Pentagon's Joint Staff; and Lt. Gen. Ray Odierno, who commanded the 4th Infantry Division overseeing north-central Iraq, is now assistant to the chairman of the Joint Chiefs of Staff.

But perhaps the most irksome case for McCain and other mtation critics is the recent reassignment of Army Lt. Gen. David Petraeus. In the 15 months Petraeus spent leading the development of Iraqi security forces, he is credited with reenergizing what had been a sputtering effort. He left Iraq in September for Fort Leavenworth, Kan., where he oversees the advanced training of Army officers, while in Iraq, many of the nation's fledgling security forces remain years away from being able to operate entirely on their own.

"I said to him, 'If you are the best, don't we owe it to our country and to our young men and women in uniform to have you still in Iraq?' " said Andrew F. Krepinevich, executive director of the Center for Strategic and Budgetary Assessments. "I said, 'The only reason we should bring you back is if you're burned out.' But he said he wasn't."

Petraeus declined to comment on the record for this report, but s e d defense officials said he was overdue to come home after spending nearly 2 1/2 years in Iraq (including time commanding the 101st Airborne Division in 2003-2004) and an earlier year-long stint in Bosnia.

Army Gen. John P. Abizaid, the commander of U.S. forces in the Persian Gulf region, is known to oppose having generals who lead divisions and corps stay longer than their units. But he and top Pentagon authorities have taken steps to ensure that a few seasoned officers remain longer in key staff positions and that several senior officers with experience in Iraq are brought back.

For instance, Army Gen. George W. Casey Jr., who has served as the top U.S. officer in Iraq for nearly 1 1/2 years, now plans to remain at least until summer. In line to become his senior tactical commander next year is Maj. Gen. Peter W. Chiarelli, who had charge of the Baghdad area last year as commander of the 1st Cavalry Division. And Lt. Gen. Martin Dempsey, who has replaced Petraeus, also spent an earlier tour commanding a U.S. division in the Baghdad area. Dempsey has been told to expect this time to stay as long as 1 1/2 years.

Christian Science Monitor
November 25, 2005
Pg. 1

5. Moral Stakes Of Exiting Iraq

As the war debate increasingly turns to withdrawal, all sides cite moral obligations.

By Linda Feldmann, Staff miter of The Christian Science Monitor

WASHINGTON

Americans like to think of themselves as a moral people, a champion for good in the world. And so it comes as no surprise, in the blistering debate over the Iraq war, that all sides are invoking morality to buttress their position.

In his speech Monday urging Americans to stay the course in Iraq, Vice President Cheney invoked the "moral courage" of the nation to overcome the dangers that threaten civilization. Earlier, Rep. John Murtha (D) of Pennsylvania, the one-time hawk and new darling of the antiwar movement, cited his moral obligation to speak for the troop in his stunning call for the rapid withdrawal of US forces.

Yet despite all the heated rhetoric and animosity among the different camps, there exists a common thread: a sense of responsibility over what conditions the US-led coalition leaves behind when its troops inevitably depart.

"What all of us can agree on here in the US is that we have an ethical obligation regarding the notion of doing more good than harm and not to leave before the society is restored to at least some kind of peace and order," says John Arquilla, a professor of defense analysis at the Naval Postgraduate School in Monterey, Calif.

The manner and pacing of a withdrawal can take many forms, he adds, "but it certainly does not mean simply leaving and allowing the low-grade civil war to erupt into a full-blown one."

The moral underpinnings of the start of the war also remain under hot debate, as war opponents and proponents verbally duke it out over how the Bush administration used prewar intelligence.

The inability of US forces to find weapons of mass destruction in Iraq has undercut the principal rationale for invading, as did the inability to prove that Iraq was a central player in supporting global terrorism, leaving war supporters to press the democracy argument: that Saddam Hussein was a tyrant who had to be removed, allowing Iraq to become a laboratory for Middle Eastern-style democracy.

To some analysts, the evaporation of the chief justifications for war means that the war needs a fresh start, of sorts.

"To me, the only hope now is to recast the moral foundation of the invasion by getting a combination of Arab governments and a number of Western and Asian states involved - perhaps through some sort of international conference," says Larry Seaquist, a retired Navy captain and former Pentagon strategist. "Iraqis need to think that the foundation of the entire enterprise has been reset."

Indeed, Iraqis themselves are growing increasingly determined to end the occupation. A poll conducted in August for the Iraqi Defense Ministry and leaked to the British media suggests that 82 percent of Iraqis are "strongly opposed" to the presence of coalition troops in their country; less than 1 percent of respondents said U S led troops had improved security there.

On Monday, at a conference in Cairo sponsored by the Arab League, Iraq's

~~FOUO~~

June 05,2006

TO: Peter Rodman

CC: Eric Edelman

FROM Donald Rumsfeld

SUBJECT: China Report

You ought to give some thought to cutting the China Report down next year to 20 or 30 pages and consider using some materials from other organizations - like the IISS or various think tanks - as reference material. I have an uneasy feeling about the concept of what we are doing.

Let's talk about it.

Thanks.

DHR/ks2
060106-18

Please Respond By June 29,2006

OSD 10362-06

11-L-0559/OSD/58278

6/29/2006 8 36 40 AM

~~FOUO~~

June 27,2006

TO: Robert Wilkie

CC: Gordon England
Tina Jonas

FROM: Donald Rumsfeld

SUBJECT: Money for Shipbuilding

Some Congressmen are proposing more money for shipbuilding. Let's add that to our list you are working on of things that if they did, where do they want to take the money from?

Thanks.

DHR.dh
SF062706-14

~~FOUO~~

OSD 10426-06
11-L-0559/OSD/58279
6/30/2006 7 38 02 AM

THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1300

LEGISLATIVE
AFFAIRS

INFO MEMO

June 29, 2005, 12:00 P.M.

FOR SECRETARY OF DEFENSE

FROM: Robert Wilkie, Acting Assistant Secretary of Defense for Legislative Affairs, (b)(6)

SUBJECT: Snowflake Response – Money for Shipbuilding,#062706-14

- This is in response to a June 27 snowflake concerning Congressional adds for shipbuilding.
- This item has been added to the list of issues that are hurting our efforts in the GWOT.

Attachment: As Stated

OSD 10426-06
11-L-0559/OSD/58280
6/30/2006 7:39:49 AM

~~FOUO~~

JUN 09 2006

TO: Robert Wilkie

FROM: Donald Rumsfeld

SUBJECT: Notifying Members of Congress about Medals

When I met with the Congressman Blunt group. Kay Granger and Marsha Blackburn asked if we would let Member of Congress know when their troops are awarded medals. Are you working on that issue?

Thanks.

DHR:dh
060806-19 (TSI).doc

Please respond by June 29, 2006

11-L-0559/OSD/58281

OSD 10428-06

6/30/2006 7:43:41 AM-

LEGISLATIVE AFFAIRS

THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, DC 20301-1300

UNCLASSIFIED

INFO MEMO

June 29,2006 5:00 P.M.

FOR: SECRETARY OF DEFENSE

FROM: Robert Wilkie, Acting Assistant Secretary of Defense for Legislative Affairs, (b)(6)

SUBJECT: Request from Congressman Roy Blunt, Majority Whip (R-Mo), Congresswoman Kay Granger (R-TX) and Congresswoman Marsha Blackburn (R-TN), Snowflake #060806-19.

- During your recent meeting with Rep. Blunt, Rep. Granger, and Rep. Blackburn, they asked you if we would let Members of Congress know when their troops were rewarded with medals. You also asked me if we were working on that issue.
- Yes, we are working to get the notification of the medal awardees to Members of Congress.
- To date, we are working with the Office of the General Counsel (OGC) and Washington Headquarters Services (WHS) offices to address privacy issue and force protection concerns with the release of names of the honorees.
- We are also coordinating the notification process with the various services, and will work to create a policy that applies across service lines.
- My staff has also personally contacted Reps. Blunt, Granger and Blackbum and advised them that we would share some medal citations with them to help them tell the stories of service members from their district.
- We have reached out to Senator Rick Santorum (R-PA), who has also expressed interest on the same issue. At my request, the Marine Corps will share with him the selected medal citations of Marines from his state.

Attachments:
Snowflake #060806-19.

Prepared by: Traci Scott, Director of Communications, (b)(6)

11-L-0559/OSD/58282

OSD 10428-06

6/30/2006 7:46:39 AM

~~FOUO~~

June 28,2006

TO: Robert Wilkie

CC: Gordon England
Tina Jonas

FROM: Donald Rumsfeld D.R.

SUBJECT: List of Priority Congressional Issues

I need to have an updated list of what we want to be talking to people on the Hill about. We need to keep it updated, so it reflects changes as they happen. We need to know what is in what committee and who is doing what, or else we are likely to miss big opportunities we cannot afford to miss.

Thanks.

DHR.dh
SF062706-08

Please Respond By 06/30/06

~~FOUO~~

OSD 10429-06
11-L-0559/OSD/58283
6/30/2006 7:57:39 AM

THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1300

LEGISLATIVE AFFAIRS

INFO MEMO

June 29, 2005, 4:00 P.M.

FOR: SECRETARY OF DEFENSE

FROM: Robert Wilkie, Acting Assistant Secretary of Defense for Legislative Affairs, (b)(6)

SUBJECT: Snowflake Response – List of Priority Congressional Issues, #062706-08

- This is in response to a June 28 snowflake requesting a listing of the items the Department should be discussing with Congressional Members. (Tab A)

- The following attachments to this memo outline our major issues:
  - Our recommended DoD Legislative Priorities for the FY07 NDAA and our Legislative Engagement Plan. (Tab B) We have pursued these priorities throughout the legislative cycle.
  - A DoD Legislative Priorities update, which provides a detailed status report on the Department's top ten legislative priorities based on the House and Senate action on the FY07 NDAA.
    - Conferencing on the bill will begin following the July 4 recess. (Tab C)
  - A list of items needed to help win the GWOT and a list of items hurting us in our efforts. (Tab D)
    - We will ensure to provide you an updated list for all of your future engagements with Members of Congress.
- This list will be refined as the issues evolve.

Attachments: As Stated

OSD 10429-06
11-L-0559/OSD/58284
6/30/2006 7:54:55 AM

THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1300

LEGISLATIVE AFFAIRS

ACTION MEMO

April 24, 2006, 2:00 PM

FOR: SECRETARY OF DEFENSE
DEPUTY SECRETARY OF DEFENSE

FROM: Robert Wilkie, Acting Assistant Secretary of Defense for Legislative Affairs (b)(6)

SUBJECT: Recommended DoD Legislative Priorities for FY 2007 NDAA

- We have completed our analysis of the legislative proposals from the Combatant Commands, OSD components, the Quadrennial Defense Review, and the Services.
  - o Those approved by OMB were transmitted to Congress in early April.
  - o Of those, and consistent with your legislative priorities as described in your call memo, we have identified 10 proposals that best advance our strategies in the Global War on Terrorism as well as our effort to transform the Department.
- Our priorities are categorized by the recommended engagement level with the Congress:
  - o Secretary of Defense
    - Logistic Support of Allied Forces for Combined Operations (QDR)
    - Interoperability Development and Training (QDR)
    - Building Partnership Security Capacity (QDR)
    - Military Health Care, Sustaining the Benefit (NDAA)
    - Support for Local Populations During Ops by U.S. Forces (Global CERP) (QDR)
    - Exempt IMET from ASPA Restrictions (QDR)
  - o Deputy Secretary of Defense
    - Deletion of Requirement for 12 Operational Carriers (NDAA)
  - o Under Secretary, Intelligence
    - Protection of Information About Weapons of Mass Destruction (QDR)
  - o Under Secretary, Acquisition, Technology & Logistics
    - Flexibility in Complying with Air Quality Plans (NDAA)
    - Flexibility in Range Management (NDAA)

COORDINATION: OGC

RECOMMENDATION: Approve the Recommended Legislative Priorities for FY2007

SECDEF DECISION:

Approve: _____

Disapprove: _____

Other: _____

MA SD		SMA DSD	
TSA SD		SA DSD	
EXEC SEC	MY/25	1000	
ESR MA			

Attachments:
Recommended Legislative Priorities and Timeline for FY 2007

OSD 06292-06

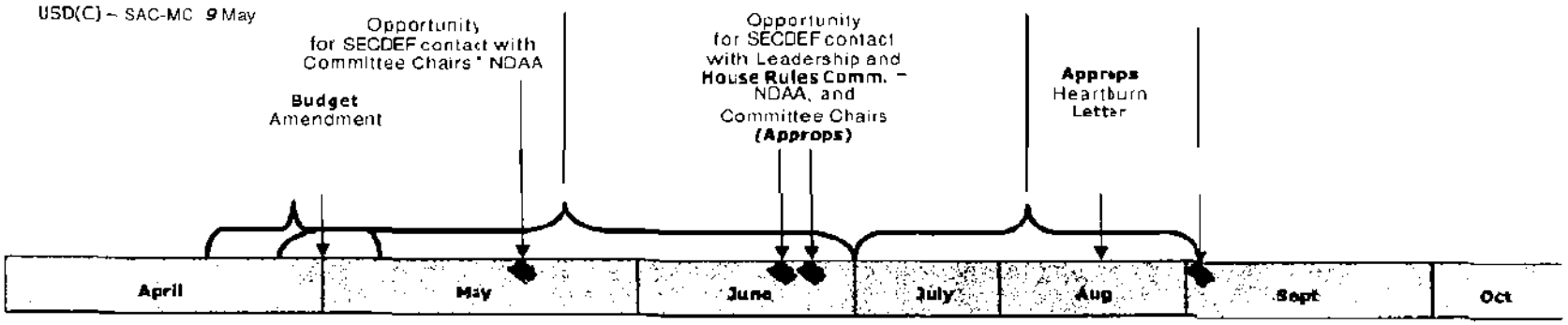
11-L-0559/OSD/58285

4/19/2006 12:46:47 PM

Legislative Engagement
FY 2007 Budget -- Key Dates

Remaining Budget Hearings

USD(C) – SAC-MC 9 May



HASC	Sub-committee 26 Apr Full committee 3 May	Floor 10 May		Conference 30 June		
SASC	Sub-committee TED Full committee TED		Floor 26 May			
HAC-D		Sub-committee 23 May Full committee 25 May	Floor 13 June			Conference 14 September Approps Bill
SAC-D			Sub-committee 27 June Full committee 29 June	Floor 18 July		

FY 2006 Supplemental

SAC	Floor Debate 24 Apr	
Conference		~ 8 May

24 Apr **06**

Recommended **DoD FY 2007 Legislative** Priorities

1. Logistic Support of Allied Forces for Combined Operations. Developed from the QDR. Section 1201 of the DOD National Defense Authorization Act (NDAA) submission would provide the Secretary of Defense the authority, in limited circumstances, to provide logistic support, supplies, and services to allied forces participating in combined operations with the armed forces of the United States, on a non-reimbursable basis.
   ⇒ Lead for Engagement: Secretary of Defense

2. Interoperability Development and Training. Developed from the QDR Section 1202 of the NDAA submission would fulfill a need deemed critical by the Commander, U.S. Central Command to provide interoperability and adequate support to coalition partners.
   ⇒ Lead for Engagement: Secretary of Defense

3. Building the Partnership Security Capacity **of** Military and Security Forces. Developed from the QDR. Section 1206 of the 2006 NDAA provides authority to increase the security of partner nations to combat terrorism or to support U.S. or coalition military and stability operations.
   ⇒ Lead for Engagement: Secretary of Defense

4. Deletion of the Requirement for **12** Operational **Aircraft** Carriers. Developed from NDAA process. Section 126 of the National Defense Authorization Act for Fiscal Year 2006 (Public Law 109-163) amended section 5062 of title 10, United States Code. That section now requires the Navy to maintain no fewer than 12 operational aircraft carriers.
   ⇒ Lead for Engagement: Deputy Secretary of Defense

5. TRICARE – Sustaining the Benefit. Developed from the NDAA process. Section 712 of the draft NDAA would authorize the Secretary of Defense to revise deductibles and charge annual enrollment fees under the TRICARE Standard/Extra option for working-age military retirees and their dependents in order to reflect increases in health care costs since TRICARE Program cost-sharing requirements and amounts were established in 1995
   ⇒ Lead for Engagement: Secretary of Defense

6. Protection of Information Regarding Weapons **of** Mass Destruction. Developed from the QDR. . Exempts certain information concerning weapons of mass destruction from disclosure to the general public under FOIA, requires appropriate safeguard thereof, and preempts contrary State or local laws.
   ⇒ Lead for Engagement: USD (I)

7. **Flexibility in Complying w/ Air Quality Plans.** Developed from *NDAA* process. This proposal would clarify the application of the conformity provisions of the Clean Air Act (CAA) *to* avoid unnecessarily restricting the flexibility of DOD, State, and Federal regulators to accommodate new or realigned military activities into applicable air pollution control schemes.
   ⇒ Level of Engagement: USD (AT&L)

8. **Flexibility in Range Management.** Developed from the NDAA process. This proposal addresses application of the Solid Waste Disposal Act (SWDA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) *to* military readiness activities.
   ⇒ Lead for Engagement: USD (AT&L)

9. **Support for Local Populations during Ops by U.S. Forces (Global CERP).** Developed from the *QDR*. This section would allow the Secretary of Defense, with the concurrence of the Secretary of State, to authorize U.S. military commanders to use DoD funds for urgent humanitarian relief and reconstruction assistance to local populations where U.S. forces are engaging in a contingency operation.
   ⇒ Level of Engagement: Secretary of Defense

10. **Exempt IMET from ASPA Restrictions.** Developed from the *QDR*. This proposal would amend the American Servicemembers Protection Act (ASPA) by adding a new subsection that would exempt International Military Education and Training (IMET) from the ASPA prohibition on providing assistance to countries that are signatories on the international convention providing for the International Criminal Court (ICC).
   ⇒ Level of Engagement: Secretary of Defense

NDAA FY07 Legislative Priorities Update - Pending Senate Amendments

Legislative Proposal	Synopsis	Text of Legislation	Current State of Play	Comment
Exempt **IMET** from ASPA Restrictions (Countries Under ASPA Sanctions To Receive **IMET** Funds)	Proposal would amend the American Servicemembers Protection Act (ASPA) by adding a new subsection that would exempt International Military Education and Training (IMET) from the ASPA prohibition on providing assistance to countries that are signatories on the international convention providing for the International Criminal Court (ICC).	Proposal is under OMB review.	Has not been transmitted to Congress. Currently at OMB. Indications are NSC is withholding release pending a further review. Has significant support from all COCOMs (SOUTHCOM and EUCOM have been particularly active in support). COCOM Commanders will likely raise again at the SLDC in mid-May	Proposal is under review at OMB.

11-L-0559/OSD/58289

Legislative Proposal	Synopsis	Text of Legislation	Current State of Play	Comment
Logistical Support of Allied Forces for Combined Ops	Proposal provides SecDef the authority, in limited circumstances, to provide logistica support, supplies, and services to allied forces participating in combined ops w/ the armed forces of the US, on a non-reimbursable basis.	Section 1201	House Bill - Section 1201 – Language is similar but for (1) bill eliminates the notwithstanding any other provision of law language; (2) restricts use of funds only IAW Arms Export Control Act and other export control laws: and (3) failed to include the requested $20M for interoperability; SASC Bill Section 1203 – Language is similar but for (1) bill eliminates the notwithstanding any other provision of law language; and, (2) allows only $5M per FY for interoperability.	Developed from QDR. In NDAA submission.

11-L-0559/OSD/58290

Legislative Proposal	Synopsis	Text of Legislation	Current State of Play	Comment
Interoperability Development and Training	Proposal would fulfill a need deemed critical by the Commander, U.S. Central Command to provide interoperability and adequate support to coalition partners. In the subchapter authorizing Acquisition and Cross Servicing Agreements (ACSAs), section 2350 of title 10, United States Code, defines the logistic support, supplies, and services that may be acquired or provided under logistic support agreements with the governments of NATO countries and other eligible countries and organizations.	Supplemental submission (no sec #)	House Bill -no corresponding section; SASC Bill - section 1208 contains language similar to DoD proposal	Developed from QDR. In NDAA submission.
Building the Partnership Security Capacity of Military and Security Forces	Proposal provides authority to increase the security of partner nations to combat terrorism or to support U.S. or coalition military and stability operations.	supplemental submission (no sec #)	House Bill - no corresponding section; SASC Bill - section 1208 contains similar language to DoD proposal but limits authority thru FY08 and limits authorized funding *to* $50M/COCOM	Developed from QDR. This is a proposed amendment to Section 1206, NDAA FY06. Was sent to Hill on 13 April.

11-L-0559/OSD/58291

Legislative Proposal	Synopsis	Text of Legislation	Current State of Play	Comment
Deletion of the Requirement for 12 Operational Aircraft Carriers	Proposal would eliminate the requirement for a minimum of 12 carriers and fulfill a recommendation of the Quadrennial Defense Review.	Section 124.	House Bill - no corresponding section; SASC bill - section 1011 contains similar language to DoD proposal	In NDAA submission. NAVY Priority.
Military health care — Sustaining the Benefit	Proposal would authorize the Secretary of Defense to revise deductibles and charge annual enrollment fees under the TRICARE Standard/Extra option for working-age military retirees and their dependents in order to reflect increases in health care costs since TRICARE Program cost-sharing requirements and amounts were established in 1995.	Section 702.	House Bill - section 704 prohibits DoD from raising premiums on TRICARE Prime, TRICARE Standard, and TRICARE Reserve Select thru 31 DEC 07. Section 709 – Language expands TRICARE eligibility to all Selected Reserve members and dependents. SASC Bill - Section 704 – Language prohibits DoD from increasing enrollment fees for TRICARE Prime during FY 07. Section 705 – Language prohibits any premium charged for coverage under TRICARE of members of reserve components who commit to continued service in the Selected Reserve after release from active duty by an amount which exceeds 2.2 percent of such premium as of 30 SEP 06.	In NDAA submission.

11-L-0559/OSD/58292

Legislative Proposal	Synopsis	Text of Legislation	Current State of Play	Comment
Protection of Information Regarding Weapons of Mass Destruction	Proposal would exempt certain information concerning WMD from disclosure to the general public under FOIA, require the appropriate safegaurd thereof, and preempt contrary State and local laws concerning WMD informatinheld by State and local governments.	Section 923.	House Bill - no corresponding section; SASC Bill - no corresponding section	Developedfrom QDR. InNDAA submission.
Flexibility in Complying with Air Quality Plans	Proposal would clarify application of the conformity provisions of the Clean Air Act to avoid unnecessarily restricting the flexibility of DoD, State, and federal regulatois to accommodate new or realigned military activities into applicable air pdlution control schemes.	Section 313.	House Bill - no corresponding section: SASC Bill - no corresponding section	In NDAA submission.
Flexibility in Range Management	Proposal addresses application of Solid Waste DisposalAct and CERCL to military readiness activities.	Section 314.	House Bill - no corresponding section; SASC Bill - no corresponding section	

11-L-0559/OSD/58293

Legislative Proposal	Synopsis	Text of Legislation	Current State of Play	Comment
Support for Local Populations During Operations by U.S. Forces (Global CERP)	Proposal would allow the Secretary of Defense, with the Concurrence of the Secretary of State, to authorize U.S. military commanders to use DoD funds for urgent humanitarian relief and reconstruction assistance to local populations where U.S. forces are engaging in a contingency operation.	supplemental submission (no sec #)	House Bill - no corresponding section; SASC Bill - section 1206 limits funding to $200,000/country and sunsets at end of FY08	Developed from **QDR**

11-L-0559/OSD/58294

File

THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1300

LEGISLATIVE AFFAIRS

INFO MEMO

June 27, 2005, 6:00 P.M.

FOR: SECRETARY OF DEFENSE

FROM: Robert Wilkie, Acting Assistant Secretary of Defense for Legislative Affairs, (b)(6)

SUBJECT: Snowflake Response – List for Congressional Members, #061306-21

- This is a first response to a June 21 snowflake listing the things Congress must do to give the Department greater flexibility in fighting the war on terror.
- We have also listed a series of Congressional adds that make it more problematic for the Department to continue the transformation necessary to vigorously pursue the fight.
- This list will be refined for your use in future Congressional engagements.

Attachment: As Stated

OSD 10286-06
11-L-0559/OSD/58295
6/30/2006 7:50:44 AM

This is What We Need to Help Win the GWOT

To get Americans out of the fight we need to put more allies in the field. We must have:

Train and Equip. A stronger Section 1206 Train and Equip Authority is necessary to increase our flexibility and responsiveness in building partner security capacity. The current authority should be modified (expanding coverage to all security forces, increasing amount, eliminating sunset) to maximize its effectiveness. Conference issue.

Global CERP. Global Commander's Emergency Response Program builds on the effectiveness of this tool in current theater of operation. This will allow commanders to address civilian needs in support of military missions. Conference issue.

Defense Coalition Support Account. Commanders need an account for advance purchases of equipment to be used by coalition partners in the Global War on Terror. This is needed for partners who fight with American forces and to train and equip partners. Currently, even when authority and funding are available, it can take months or years to procure vital equipment. This proposal was submitted as part of the FY07 legislative program, hut has not been adopted hy either house.

Delink IMET from ASPA. Allows International Military Education and Training (IMET) even if parties to the International Criminal Court and have not signed the appropriate "Article 98" Agreements. Exempts IMET from all restrictions of the American Service Members Protection Act (ASPA). Conference issue. Chavez and Castro are using oil money to educate and train Latin American officers while we are prevented from doing so because of ASPA. (This position is at odds with State and the White House.)

Logistical Support for Allied Forces in Contingencies. Provides authority to provide logistical support, supplies, and services to allied forces participating in comhined ops with U.S. armed forces on a non-reimbursable basis. Conference issue.

Regional Centers for Security Studies. The Secretary of Defense needs authority to waive the cost of activities (tuition, travel, room and board) for non-government foreign civilians to attend the department's Regional Centers for Security Studies. This authority has been rejected by the HASC and SASC for two years in a row. We need this to build relationships between our military and foreign civilian opinion leaders, like professors, NGO officials and journalists.

Joint Urban Operations. The 2006 QDR notes that "defeating terrorist networks highlights the need for...urban warfare capabilities." One opportunity requiring Congressional support throughout future budget appropriations processes is development of a large-scale joint urban ops facility. The infrastructure would support civilian role players, provide a dynamic intelligence scenario capability, along with feedback and debriefing capabilities, and "smart targets" that facilitate urban close air support/air surveillance operations training. Conference issue.

This is what is hurting us:

Refusal to address healthcare costs.

Forcing DOD to keep redundant systems such as:

- U-2 and B-52.
- Ships the Navy doesn't need.
- JSF second engine.

Military Health Care - Sustaining the Benefit. Encourage Congress to support efforts to phase-in adjustments in order to control the rising cost of supporting this benefit.

Growing Entitlements. We oppose the unnecessary expansion of entitlement benefits for retired military members and their survivors. They duplicate existing benefits, cost billions, and don't contribute to recruiting, retention or readiness. We reject the Senate's approach to provide a windfall in duplicate receipt of disability payments from DoD and VA, for any retirees designated by VA as unemployable.

~~FOUO~~

June 21, 2006

TO. Robert Wilkie

FROM Donald Rumsfeld D.R.

SUBJECT: List for Congressional Members

When I meet with the Congress, I ought to have a list of things the Congress needs to do, so that we *can* win this Global War on Terror. We need greater flexibility. I need to have a list, so I can bring it up every time I see them.

Please pull a list together for me, coordinate it around the Department, and get it to me in the next week.

Thanks.

DHR.ss
SF061306-21

Please Respond By 06/28/06

~~FOUO~~

OSD 10286-06

11-L-0559/OSD/58298

6/30/2006 7:62:05 AM

~~FOUO~~

June 29,2006

TO: President George W. Bush

CC: Vice President Richard B. Cheney
Stephen J. Hadley

FROM: Donald Rumsfeld

SUBJECT: Lieutenant's Letter to the *New York Times*

Attached is a letter Pete Schoomaker sent me. It is worth reading.

Respectfully,

Attach Lt. Tom Cotton letter to the *New York Times*

DHR.ss
SP062906-03

OSD 10439-06
6/30/2006 1:00:26 PM

11-L-0559/OSD/58299

Lt. Tom Cotton writes this morning from Baghdad with a word for the New York Times.

Dear Messrs. Keller, Lichtblau & Risen:

Congratulations on disclosing our government's highly classified anti-terrorist-financing program (June 23). I apologize for not writing sooner. But I am a lieutenant in the United States Army and I spent the last four days patrolling one of the more dangerous areas in Iraq. (Alas, operational security and common sense prevent me from even revealing this unclassified location in a private medium like email.)

Unfortunately, as I supervised my soldiers late one night, I heard a booming explosion several miles away. I learned a few hours later that a powerful roadside bomb killed one soldier and severely injured another from my 130-man company. I deeply hope that we can find and kill or capture the terrorists responsible for that bomb. But, of course, these terrorists do not spring from the soil like Plato's guardians. No, they require financing to obtain mortars and artillery shells, priming explosives, wiring and circuitry, not to mention for training and payments to locals willing to emplace bombs in exchange for a few months' salary. As your story states, the program was legal, briefed to Congress, supported in the government and financial industry, and very successful.

Not anymore. You may think you have done a public service, but you have gravely endangered the lives of my soldiers and all other soldiers and innocent Iraqis here. Next time I hear that familiar explosion -- or next time I feel it -- I will wonder whether we could have stopped that bomb had you not instructed terrorists how to evade our financial surveillance.

And, by the way, having graduated from Harvard Law and practiced with a federal appellate judge and two Washington law firms before becoming an infantry officer, I am well-versed in the espionage laws relevant to this story and others -- laws you have plainly violated. I hope that my colleagues at the Department of Justice match the courage of my soldiers here and prosecute you and your newspaper to the fullest extent of the law. By the time we return home, maybe you will be in your rightful place: not at the Pulitzer announcements, but behind bars.

Very truly yours,

Tom Cotton
Baghdad, Iraq

~~FOUO~~

May 15,2006

TO: Eric Edelman

CC: Paul McHale

FROM Donald Rumsfeld DR.

SUBJECT: DHS Testing the National Response System

How can we influence the Department of Homeland Security to operationalize Katrina Lessons Learned by testing the national response system through exercises?

We want to stress the system on purpose before it gets stressed real-time.

Thanks.

DHR:dh
051506-17

Please Respond By 06/22/06

11-L-0559/OSD/58301

OSD 10449-06

6/30/2006 12:11:54 PM

ASSISTANT SECRETARY OF DEFENSE
2600 DEFENSE PENTAGON
WASHINGTON, DC 20301-2600

INFO MEMO

HOMELAND DEFENSE

DSD _____
USD(P) _____
JUN 29 2006

FOR SECRETARY OF DEFENSE

FROM: Paul McHale, Assistant Secretary of Defense (Homeland Defense)

Peter F. Verga
Principal Deputy

SUBJECT: DHS Testing the National Response System

- You asked how we could influence the Department of Homeland Security to operationalize the lessons learned from Humcane Katrina (TAB A). We are sponsoring several initiatives to achieve this goal:
  - At the direction of the Homeland Security Council (HSC) staff, the Catastrophic Assessment Task Force completed three tabletop exercises that stressed the National Response Plan (NRP). We worked closely with the HSC staff and DHS in developing the exercise scenarios, one of which specifically addressed the roles and responsibilities of Federal departments during a Category 5 hurricane. Senior DoD and DHS leadership participated in these tabletops.
  - NORTHCOM's annual major exercises, ARDENT SENTRY and VIGILANT SHIELD, are specifically designed to stress the NRP. The lessons learned from Humcane Katrina are key objectives in both exercises. DHS has been offered the opportunity to participate in both exercises.
  - My office is ensuring that DoD plans address each of the 15 National Planning Scenarios. We are developing pre-scripted mission assignment that will enable DoD and DHS to respond quickly to each scenario. We have completed the mission assignments for severe weather and are drafting mission assignments for a pandemic influenza.
  - In coordination with the Joint Staff, we are working on the road map directed by the Quadrennial Defense Review. This roadmap:
    - Facilitates greater US government-wide planning and budgeting for DHS' National Exercise and Evaluation Program.
    - Synchronizes exercises sponsored by DHS and DoD by designating two national-level exercises per year.
- In summary, we are working closely with DHS and the Joint Staff to plan future exercises that operationalize the lessons learned from Katrina.

COORDINATION: TAB B

Prepared by: Mr. Wauchop, OASD(HD)/FP & E, (b)(6)

OSD 10449-06
6/30/2006 12 10 56 PM
06/006192-ES

11-L-0559/OSD/58302

~~FOUO~~

061406-13

JUN 15 2006

TO: Eric Edelman

CC: Robert Wilkie

FROM: Donald Rumsfeld

SUBJECT: Information on Jason Ian Poblete

Here *is another note* from Ileana Ros-Lehtinen recommending her friend for the position that was held by Roger Pardo-Mauer's.

Attach: Note from Ileana Ros-Lehtinen and background sheet on Jason Ian Poblete

DHR.ss
SP061406-13

Please ***Respond By*** *06/30/06*

Rumsfeld Talkers for Jason

1. This fellow has wanted to work for you since. 2001

2. He has the political skills, the policy and language skills, to help this Administration finish strong in the region.

3. He has a knack for getting information from people and managing projects that you sorely need in Latin America policy circles in this town.

4. He will be out there working hard. Meet with him. You'll see.

5. Your (Rumsfeld's) son (when he was age 10) told you: "If it does not go easy, force it." – This works in the political world. He thinks this way as well.

Dear Mr. Secretary -
Jason Poblete is an
ideal candidate for the Western
Hemisphere slot at D.D -
Thanks,
Ileana Ros-Lehtinen

OSD 07312-06
11-L-0559/OSD/58304
7/3/2006 8:51:14 AM

~~FOR OFFICIAL USE ONLY~~

INFO MEMO

DSD_____

FOR SECRETARY OF DEFENSE

JUN 3 0 2006

FROM: Under Secretary of Defense for Policy, Eric S. Edelman

SUBJECT: Jason Poblete ~~(FOUO)~~

- ~~(FOUO)~~ I met with Jason Poblete on June 29 to discuss the position of DASD for Western Hemisphere Affairs in Policy (note next under). We had a good discussion.
- ~~(FOUO)~~ I will interview other candidates and will come back to you with a recommendation for the position.

~~FOR OFFICIAL USE ONLY~~

06 1406-13

OSD 10508-06

7/3/2006 9:05:57 AM

11-L-0559/OSD/58305

~~FOUO~~

June 15,2006

TO: Eric Edelman

CC: Robert Wilkie

FROM: Donald Rumsfeld DR.

SUBJECT: Norm Case and the MIA/POW Job

I saw Congressman Sam Johnson. He recommends Norm Case for the MIA/POW job. What is that status of that?

Thanks.

DHR.ss
3F061506-10

Please Respond By 06/29/06

~~FOUO~~

#061506-10

11-L-0559/OSD/58306

OSD 10511-06

7/3/2006 9:22:56 AM

~~FOR OFFICIAL USE ONLY~~

INFO MEMO

DSD_____

FOR SECRETARY OF DEFENSE

FROM: Under Secretary of Defense for Policy, Eric S. Edelman JUN 3 0 2006

SUBJECT: Norm Kass and the MIA/POW Job ~~(FOUO)~~

- ~~(FOUO)~~ Per our conversation, I called Congressman Sam Johnson regarding his recommendation of Norm Kass for the DASD POW/MIA position in Policy. As you may recall, Ambassador Charles Ray is our leading candidate for the position.
  - The Deputy Secretary has interviewed both Kass and Ray and agrees that Ray is the better qualified of the two.
- ~~(FOUO)~~ I told Johnson that I appreciate his recommendation and that I have great regard for Norm. I explained that we were looking at candidates with more of a focus on South East Asia and Korea.
- ~~(FOUO)~~ Johnson was gracious and seemed to understand the basis for our decision. He appreciated the call.

061506-10

OSD 10511-06

11-L-0559/OSD/58307

7/3/2006 9:24:28 AM

~~FOUO~~

June 19,2006

TO: Eric Edelman

FROM: Donald Rumsfeld DR.

SUBJECT: Karzai's Personal Office

Should we **think** about getting a senior American in Karzai's personal office, to **help him?**

Thanks.

DHR ss
SF061906-33

Please Respond By 07/06/06

OSD 10515-06
7/3/2006 9:50:39 AM

~~FOUO~~

JUN 30 2006

INFO MEMO

DSD_____
USDP_____
I-06/008083-ES
JUN 30 2006

FOR SECRETARY OF DEFENSE

FROM: Peter W. Rodman, Assistant Secretary of Defense (ISA) JUN 30 2006

SUBJECT: Karzai's Personal Office

- You asked about getting a senior American in Karzai's office.
- As you know, Marin Strmecki is traveling to Afghanistan soon.
  - His trip is temporarily delayed for personal reasons.
- My staff has asked him to look into the assessments that Karzai's staff is not well organized or providing the right kind of support.
  - Upon his return, Marin will provide his views and recommendations, including whether the Afghans would be receptive of a U.S. advisor and what kind of U.S. person – and who – might be appropriate.
- We will keep you informed.

~~FOUO~~

11-L-0559/OSD/58309

OSD 10515-06

7/3/2006 9:50:06 AM

~~FOUO~~
Attachment: ~~SENSITIVE BUT UNCLASSIFIED~~

MAY 0 2 2006

TO: Eric Edelman

CC: Gen Pete Pace

FROM: Donald Rumsfeld DR

SUBJECT: US Mission Staffing Summary

I have been over the attached "US Mission Staffing Summary." I cannot figure it out. It doesn't make any sense at all to me. We must have a better way of presenting this information.

Thanks.

Attach. "US Mission Staffing Summary" based on 3/24/06 Interagency Staffing Report

DHR.dh
050106-32

Please Respond By May 18, 2006

updated summary
[illegible]

~~FOUO~~
Attachment: ~~SENSITIVE BUT UNCLASSIFIED~~

OSD 10518-06

11-L-0559/OSD/58310

7/3/2006 10 00 02 AM

~~SENSITIVE BUT UNCLASSIFIED~~

US Mission Staffing Summary

Agency	Target Staffing	Full-Time Staff	TDY	Total On-Board Staff	% Filled of Total On-Board Staff
Other DoS Units*	388	350	28	378	97%
Justice	74	44	78	122	165%
DHS	21	1	17	18	86%
Agriculture/FAS	2	2	0	2	100%
Transportation	3	1	2	3	100%
Labor	1	0	0	0	0%

- Totals Based on Interagency Staffing Report 3/24/08.
- Other DoS Units include IRMO, Legal, Office of Regional Affairs, Office of the Inspector General, and SIGIR.
- Approximately 24% of Total onBoard Staff are TDYers.

~~SENSITIVE BUT UNCLASSIFIED~~

BUILDING MINISTERIAL CAPACITY

IRMO Consultants

Ministry	Target Staffing	On Board Staff	% Filled of Total On Board Staff	Candidates in the Pipeline within 3 months
Agriculture	1	1	100%	0
Education	1	1	100%	0
Public Integrity	7	7	100%	0
Health	2	2	100%	0
Planning & Development Coop.	2	2	100%	0
Prop Claims, Displace. & Migra.	1	1	100%	0
Transportation	16	12	75%	4
Water, Muni. & Public Works	5	3	60%	1
Total	70	58	83%	10

Totals based on IRMO Manning Document 3/23/06.

- Totals do not include coalition partners. Currently there is 1 in the Ministry of Oil and 3 in the Ministry of Planning and Development.

11-L-0559/OSD/58312

~~SENSITIVE~~ ~~BUT UNCLASSIFIED~~

Ministry Assistance Teams (MAT)

MAT	Target Staffing	USG On-Board	Iraqi Partner On-Board	Contractor On-Board	VNF I On-Board	NGO On-Board	Int'l Donor/ Leading Org On-Board	Total On-Board Staff	% Filled of On-Board Staff
Agriculture* **	29	11	3	0	3	7	1	25	86%
Electricity**	14	8	3	0	2	0	1	14	100%
Finance*	33	17	3	0	2	1	2	25	75.7%
Justice	11	6	4	0	0	0	0	10	90.9%
Planning	18	5	1	0	0	0	4	10	55.6%
Total	161	66	23	1	10	8	18	126	78.6%

* MAT Agriculture supports the Ministries of Agriculture and Construction & Housing; MAT Finance supports the Ministries of Finance and Anti-Corruption & Ethics; MAT Water Resources supports the Ministries of Water Resources and Municipalities & Public Works; MAT Planning supports the Ministry of Planning and the Office of the Prime Minister.

** MATs Agriculture and Electricity include contractors augmenting IRMO 3161 billets. They are counted under USG On-Board.

Staffing Requirements currently being finalized within respective relevant agencies

MoD, MoI, JHQ Transition Team Manning*

Ministry of Interior	112	32	13	1	24	3	0	73	65%
Ministry of Defense	103	49	1	10	a	18	0	86	84%
Total	215	81	14	11	32	21	0	159	74%

Notes:
* On 1 October 2005, MNSTC-I assumed responsibility for developing the Security Ministries.
** Temporary Fill is defined as a US9 TDY or BMM from MNSTC-I staff or elements
*** Military includes MNSTC-I assigned and MNF-I embeds
**** Initial Assessment of personnel required completed mid-Nov; revised assessment ICW annual JMD submission ongoing

Data as of: 20 March 2006

11-L-0559/OSD/58314

Embassy Baghdad and Supporting Staffing

DoD Staff, US Mission Iraq

DoD Staff Under Chief of Mission Authority

Defense	Army Project and Contracting Office [1]	109	79	72%
	Defense Contract Audit Agency	20	14	70%
	Marine Security Guards	14	14	100%
	Defense Contract Management Agency	68	64	94%
	National Geospatial Intelligence Agency	3	3	100%
Other State Units	Iraq Reconstruction Management Office (IRMO)	26	24	92%
Total		240	198	83%

Additional DoD Staff Supporting US Mission-Iraq

Organization	US Staff	Local Staff
MNF-I Legal (Co-located at Embassy)	3	
Area Support Group (ASG)	130	
Fleet Anti-terrorism Support Team (FAST) Marines	151	
Joint Contracting Command-Iraq	45	
Army Corps of Engineers-Gulf Region Division	621	521
Total		521

[1] Target staffing is currently under review by the Army Corps of Engineers. Completion of reconstruction projects has resulted in a reduced number of staff needed.

THE UNDERSECRETARY OF DEFENSE
2000 DEFENSE PENTAGON
WASHINGTON, DC 20301-2000
~~FOUO~~

POLICY

INFO MEMO

DSD_____

FOR SECRETARY OF DEFENSE

FROM: Eric S. Edelman, Under Secretary for Defense for Policy JUN 3 0 2006

Subject: US Mission Iraq Staffing

- You asked questions about State Department charts on U.S. Embassy Staffing. (Tab A)
- State regularly tracks and reports *on* agency staffing under Chief of Mission authority to Principals. While useful, the chart is incomplete in several respects.
- First, the chart does not capture the extent of DoD support to the Embassy.
    - Of the 1044 positions under Chief of Mission authority, 240 are DoD.
    - In addition, 950 DoD and military personnel not under the Chief of Mission authority provide direct support to the Chief of Mission, (Tab B).
- Second, the State charts are somewhat confusing about the total amount of support by USG agencies to improve Iraqi Ministry Capacity. There are two types of support to Iraqi ministries:
    - About 60 full-time advisors in the Iraq Reconstruction Management Office (IRMO) work to improve ministry capacity, advise GOI ministers, and oversee reconstruction efforts within their sectors
    - In addition, Ministerial Advisory Teams for key ministries combine the efforts of full-time IRMO advisors with other organizations (NGOs, Iraqis, and MNF-I).
- The Embassy recognizes that current staffing for ministry capacity building is inadequate. Embassy has begun a National Capacity Development Program that will hire substantial additional contractor support as full-time advisors and members of Ministerial Advisory Teams (as MNSTC-I has done for MOD and MOI).
- We are working with Joint Chiefs of Staff and State to make these charts more useful and to reflect developing Embassy efforts to improve ministerial capacity. We would expect to have better information for you in a couple of weeks.

Prepared by: Timothy Bennett, DRSO-Iraq (b)(6)

11-L-0559/OSD/58316

OSD 10518-06

7/3/2009 9:59:52 AM

~~FOUO~~

June 27, 2006

TO: Eric Edelman

CC: Steve Bucci
CAPT Tom Mascolo

FROM: Donald Rumsfeld

SUBJECT: Natan Sharansky

Please let Natan Sharansky know that I would be delighted to see him and have lunch or dinner with him when he is in the US.

Also, if I do go to Israel, I would like to see him when I am there and have a chance to just quietly visit with him.

Thanks.

DHR:dh
SF062706-03

Please Respond By 07/06/06

06/008381

~~FOUO~~

OSD 10548-06
11-L-0559/OSD/58317
7/3/2008 1 46 49 PM

~~FOR OFFICIAL USE ONLY~~

INFO MEMO

DSD_____

FOR SECRETARY OF DEFENSE

FROM: Under Secretary of Defense for Policy, Eric S. Edelman JUN 30 2006

SUBJECT: Natan Sharanksy ~~(FOUO)~~

- ~~(FOUO)~~ Per your note (next under), I spoke with U.S. Ambassador Jones, and we believe it should not be an issue to get you a quiet meeting with Natan Sharansky during your trip to Israel in July. I am passing this information to your staff.
- ~~(FOUO)~~ The Embassy also understood to pass the message to Sharansky that you would welcome the opportunity to host a lunch or dinner with him the next time he is in the United States.

CC: Steve Bucci
Tom Mascolo

~~FOR OFFICIAL USE ONLY~~

061506-10

OSD 10548-06

11-L-0559/OSD/58318

7/3/2006 1:49:02 PM

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D C. 20301-4000

INFO MEMO

PERSONNEL AND READINESS

June 23, 2006, 3:35 PM

MEMORANDUM FOR SECRETARY OF DEFENSE

FROM: David S. C. Chu, UNDER SECRETARY OF DEFENSE (P&R)

SUBJECT: Joint Foreign Area Officer (FAO) Program Quarterly Update – SNOWFLAKE (attached)

- Since the last quarterly update in March 2006, FAO metrics were established and the Services provided their initial data. This effort provided measures that will help the Department manage FAO career progression and utilization, identified some noteworthy relationships, and created a baseline for future data comparisons.
- FAO Accession. The Department exceeded all FAO accession goals.
  - Focus on the importance of FAOs and corresponding incentives greatly increased the number and quality of applicants. Across the Services, applicants exceed requirements by 423%; approximately 74% met the minimum FAO accession qualifications, providing FAO selection panels more than three (3) qualified applicants per requirement.
  - The Army and Marine *Corps* each reported 100% training completion, indicating that the competitive selection process ensures acceptance of candidates capable of meeting the rigorous FAO training requirements. Air Force and Navy begin their first FAO training in summer 2006.
- FAO Promotion & Retention. While many factors impact promotion selection and more than promotion rates influence a service members' decision to stay in the Force, the initial data suggest that when FAO promotion rates are above the Service averages, FAO retention is higher.
  - Army exceeded the goal for FAO promotion rates (i.e., for FAO rates to be not less than 3% below applicable Service averages) and retention among Army FAOs was 2% higher than their Service average.
  - Data for the other Services was not sufficient to establish a trend.

COORDINATION: NONE

Attachment:
As stated

Prepared by: COL Yeong-Tae Pak, DLO, Yeong.pak@osd.pentagon.mil, (b)(6)

11-L-0559/OSD/58319

OSD 10571-08
7/5/2006 10:38:59 AM

~~FOUO~~

January *03,2006*

TO: David Chu

FROM: Donald Rumsfeld

SUBJECT: Foreign **Area** Officer Program

Please send me a quarterly report on how we're doing this Joint Foreign Area Officer Program.

Thanks

DHR:ks
103005-30

Please Respond By 03/16/06

~~FOUO~~

11-L-0559/OSD/58320

OSD 04632-06

7/5/2006 10 34 16 AM

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

INFO MEMO

PERSONNEL AND READINESS

March 16, 2006, 5:07 PM

MEMORANDUM FOR SECRETARY OF DEFENSE

FROM: David S. C. Chu, UNDER SECRETARY OF DEFENSE (P&R)

SUBJECT: Joint Foreign Area Officer (FAO) Program Quarterly Update – SNOWFLAKE (attached)

- You asked for a quarterly report on the Joint Foreign Area Officer Program.

- The Services have transitioned their FAO programs to meet the new joint requirements and are developing over 700 new FAOs by *FY* 2010 based on a common set of training guidelines, developmental experiences, and regional expertise standards.

- FAO Training. Qualification as an FAO in the Joint DoD FAO Program requires qualifying in a principal military specialty, speaking a strategic or dominant language in their area of concentration, possessing a graduate level education focusing on the specific foreign countries and region, and having applicable in-country regional training.

- FAO Retention. Retention is not a current problem among Army FAOs. From FY98 to FY05, *the* average Army Lieutenant Colonel FAO served 24.09 years upon separation, whereas the Army-wide average for separating Lieutenant Colonels was 21.7 years. The Navy and Air Force have recently started new FAO programs and do not yet have similar retention data available.

- FAO General Officer/Flag Officer Promotion Opportunities. General and Flag Officer promotion possibilities are still a weak area. We are working with the Joint Staff to assist in identifying positions that would benefit from having a FAO General or Flag Officer.

COORDINATION: NONE

Attachments:
As stated

Prepared by: LTC Benya, DLO, christopher.benya@osd.pentagon.mil, (b)(6)

11-L-0559/OSD/58321

OSD 04632-06
7/5/2006 10:35:00 AM

~~FOUO~~

JUN 09 2006

TO: Gordon England

CC: Eric Edelman
Tina Jonas
Mart Hoffmann

FROM: Donald Rumsfeld

SUBJECT: Funding for Micro-Loans in Afghanistan

Here is a note from Percy Barnevik, who is doing important work in Afghanistan trying *to set up micro-loans to jump-start the* economy. He needs money to get started.

Are there public funding options? Can we approach the interagency on his behalf?

We need some quick answers, so he doesn't lose momentum.

Thanks.

DHR:dh
060406-02 (TS).doc

Please respond by June 22, 2006

OSD 10588-06

7/5/2006 3:04:53 PM

~~FOUO~~

11-L-0559/OSD/58322

5 July2006 - NC 0807

FOR SECRETARY OF DEFENSE

FROM: Gordon England

SUBJECT Funding for Micro-Loans in Afghanistan

- Department of State and USAID have authority to fund micro-loans. Eric has closed the loop with State through Josette Shiner, the Under Secretary of State for Economic, Business, and Agricultural Affairs. In turn, Josette Shiner has closed the loop with Barnevik.
- Uncertain, but my understanding is ***that*** Secretary Tobias, who also **runs** USAID, has also spoken to Barnevik.
- Unknown if micro-loans will be funded, but we have the right people in touch with each other.

Afghanistan

5 Jul 06

9 Jun 06

OSD 10588-06
7/5/2006 3:04:50 PM

~~FOUO~~

JUN 09 2006

TO Gordon England

cc: Gen Pete Pace
Eric Edelman

FROM Donald Rumsfeld

SUBJECT: ISAF Capturing Detainees

Someone is going to have to figure out what happens when ISAF takes over in Afghanistan and some NATO country captures somebody.

Who do they turn them over to – the Afghans? Us? *Or* do they keep them? It is particularly important if it is a high value target.

Thanks.

DHR:dh
060506-09 (TS).doc

Please resptmd by June 29, 2006

06/007566

~~FOUO~~

OSD 10604-06
7/5/2006 4:23:37 PM
11-L-0559/OSD/58324

~~FOUO~~

June 14,2006

TO: Robert Wilkie

FROM: Donald Rumsfeld DR.

SUBJECT: Comment by Nancy Pelosi

At the White House meeting today. Nancy Pelosi said that there is a constitutional amendment issue linked to troop withdrawals that is in the DoD bill. What is she talking about'!

Thanks.

DHR.ss
061440-23

Please Respond By 06/22/06

THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1300

LEGISLATIVE AFFAIRS

INFO MEMO

July 5, 2006, 2:00 P.M.

MEMORANDUM FOR SECRETARY OF DEFENSE

FROM: Robert Wilkie, Acting Assistant Secretary of Defense for Legislative Affairs

SUBJECT: Snowflake # 061406-24--Representative Pelosi's Remark about "Constitutional Amendment"

- During a meeting at the White House, Representative Nancy Pelosi made a remark about a "constitutional amendment" in connection with the issue of redeployment of U.S. forces from Iraq, and you asked me to find out what Representative Pelosi may have had in mind. We have checked with both the White House and with Representative Pelosi's staff.

- Reportedly, Representative Pelosi's statement was, "The sooner the Iraqis get on with amending their constitution, the sooner we can redeploy our troops" (or words to that effect).
  - o According to her staff, Representative Pelosi is frustrated by what she perceives as a lack of progress on resolving power-sharing issues.
  - o The constitution was approved by tbe Iraqi people on October 15,2005 and went into effect May 20, 2006. The constitution provides for a four-month period to draft and propose constitutional amendments, but the drafting committee has not yet been appointed.
  - o It appears that the four-month period will not commence until the committee is formed. But, even absent the committee, the Iraqi Parliament and the political elites are crafting implementing legislation that will define various power-sharing arrangements for the country.
- Please let me know if you desire further information about this matter.

Coordination: USD(P)/NESA, DRSO

Attachment: Snowflake #061406-24

Prepared By: Samuel F. Wright, Special Assistant, OSD(LA) (b)(6)

11-L-0559/OSD/58326

OSD 10627-06

7/6/2006 7:43:29 AM

UNDERSECRETARYOFDEFENSE
4000 DEFENSE PENTAGON
WASHINGTON. D.C. 20301-4000

ACTION MEMO

PERSONNEL AND READINESS

June 20, 2006, 4:36

FOR SECRETARY OF DEFENSE DepSec Action_____

FROM: Dr. David S.C. Chu, USD (Personnel and Readiness)

SUBJECT: ~~Letter to President~~ Bush - Your snowflake #8 response

- You asked us to craft a letter to the President on your mishap reduction efforts. Attached is that letter.

- DoD is one of the leaders in the Federal government in reducing civilian worker's compensation cost and lost production time.

- We have also highlighted to the President a few notable successes in reducing flight mishaps, motor vehicle accidents, and military injuries in training. While we have made some progress in these areas, we have not yet met our reduction goals.

- We will continue to push to achieve these mishap reduction goals as they increase our operational readiness and demonstrate our commitment to the men and women serving our Nation.

RECOMMENDATION: Sign the attached letter.

COORDINATION: AT&L (Mr. Bowling)

Attachment:
As stated

Prepared by: Joseph J. Angello, Jr., Executive Secretary, Defense Safety Oversight Council

11-L-0559/OSD/58327

OSD 10638-06

7/6/2006 1 21 06PM

~~FOUO~~

MAY 0 9 2006

TO: David Chu

CC: Robert Rangel

FROM: Donald Rumsfeld

SUBJECT Memo on Safety Efforts

Thank you for the material *on* Safety. I look forward to receiving the message for me to sign.

I have *asked* Robert Rangel to be sure we cover the Safety matter at the *Senior* Defense Leadership Conference this month. Would you please preparing some talking points for me?

In addition, I would appreciate it if you would prepare a *draft* memo from me to the President citing what our safety record was when I came in, and what it is now.

Thanks.

Attach: 5/3/06 USD (P&R) Memo to SecDef

DHR.ss
050806-08

Please Respond By 05/24/06

OSD 10638-06
7/6/2006 1:07:20 PM
11-L-0559/OSD/58328

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

INFO MEMO

PERSONNEL AND READINESS

May 3, 2006, 4:00pm

FOR SECRETARY OF DEFENSE

FROM Dr. David S. C. Chu, USD (Personnel and Readiness)

SUBJECT: *Our* Mishap Reduction *effort* – ***SNOWFLAKE***

- I believe you will have the greatest impact if you include thoughts on safety in your remarks at the Senior Defense Leadership Conference this month

- We are working with Public Affairs on a "summer safety message" for the summer driving season. You should see this message in the next week.

- Our safety efforts are paying off. DoD now leads the Federal government in reducing workers' compensation costs, and we have reduced several of our injury and accident rates but we still have a considerable way to go before we meet ow goals.

- The Military Departments are fully engaged and have a number of initiatives underway. I expect to see further reductions in our accident rates over the next two years as a direct result of this effort. Some of our more promising initiatives include:

  - Promulgating OSHA's Voluntary Protection Program (VPP). This program fosters excellence in safety and health management systems with a comprehensive worksite analysis and proactive hazard prevention program.
  - Funding parachute ankle braces, reducing ankle injuries by 40-60% at the Army's airborne school. Now being expanded to operational units.
  - Using our hospital data to target military injuries and prevention efforts.
  - Leveraging technology (e.g., such as using data from aircraft flight recorders to debrief pilots, maintainers, and commanders on aircraft performance and safety).
  - Expanding the use of HMMWV roll-over trainers to build confidence in escaping a roll-over situation.

RECOMMENDATION. None, Info only.

Prepared by: Joseph J. Angello, Jr., Director, Readiness Programming & Assessment

OSD 07232-06
5/3/2006 8:05:36 PM

TAB
A

SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON. DC 20301-1000

President George W. Bush
The White House
1600 Pennsylvania Avenue, NW
Washington, DC **20500**

Dear Mr. President:

I am pleased to report that we are aggressively implementing your Safety, Health, and Return-to-Employment (**SHARE**) initiative. We continue to reduce injuries and are among the best in the Executive Department in reduction of lost production days.

Shortly after taking office in **2001,** consistent with the SHARE principles, **I** set a course for the Department of Defense to reduce losses due to mishaps and accidents. We established metrics for our most pressing mishap areas: civilian and military injuries, aviation accidents, and the number one non-combat killer of our military, private motor vehicle accidents.

We have reduced lost civilian production days by **25** percent from **FY2002,** returned 313 employees back to work from the disability roles, and embraced **OSHA's** Voluntary Protection safety programs for defense bases and activities

On the military side, these efforts are saving lives and taxpayer dollars while increasing our operational readiness. For example, over the last four years, the Air Force reduced its private motor vehicle fatality rate by **43** percent. The Army introduced an ankle brace that has reduced ankle injuries by **67** percent at airborne school, and the Navy saved air crew and aircraft using new aviation safety technology.

We have considerably more work to do. But these efforts will make the Department a safer place to work, and more capable of defending the Nation and her interests.

Respectfully yours,

11-L-0559/OSD/58331

~~FOUO~~

MAY 0 9 2006

TO: David Chu

cc: Robert Rangel

FROM: Donald Rumsfeld @

SUBJECT Memo on Safety Efforts

Thank you for the material on Safety. I look forward to receiving the message for me to sign.

I have asked Robert Rangel to be sure we cover the Safety matter at the Senior Defense Leadership Conference this month. Would you please preparing some talking points for me?

In addition, I would appreciate it if you would prepare a draft memo from me to the President citing what our safety record was when I came in, and what it is now.

Thanks.

Attach: 5/3/06 USD (P&R) Memo to SecDef

DHR.ss
050806-08

Please Respond By 05/24/06

~~FOUO~~

OSD 10638-06
7/6/2006 1:07:20 PM
11-L-0559/OSD/58332

UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C 20301-4000

INFO MEMO

PERSONNEL AND READINESS

May 3, 2006, 4:00pm

FOR. SECRETARY OF DEFENSE

FROM: Dr. David S. C. Chu, USD (Personnel and Readiness)

SUBJECT: Our Mishap Reduction effort – **SNOWFLAKE**

- I believe you will have the greatest impact if you include thoughts on safety in your remarks at the Senior Defense Leadership Conference this month.

- We are working with Public Affairs on a "summer safety message" for the summer driving season. You should see this message in the next week.

- Our safety efforts are paying off. DoD now leads the Federal government in reducing *workers' compensation* costs, and we have reduced several of our injury and accident rates but we still have a considerable way to go before we meet our goals.

- The Military Departments are fully engaged and have a number of initiatives underway. I expect to see further reductions in our accident rates over the next two years as a direct result of this effort. Some of ow more promising initiatives include:

  - Promulgating OSHA' sVoluntary Protection Program (VPP). This program fosters excellence in safety and health management systems with a comprehensive worksite analysis and proactive hazard prevention program.
  - Funding parachute ankle braces, reducing ankle injuries by 40-60% at the Army's airborne school. Now being expanded to operational units.
  - Using our hospital data to target military injuries and prevention efforts.
  - Leveraging technology (e.g., such as using data from aircraft flight recorders to debrief pilots, maintainers, and commanders on aircraft performance and safety).
  - Expanding the use of HMMWV roll-over trainers to build confidence in escaping a roll-over situation.

RECOMMENDATION. None, Info only.

Prepared by: Joseph J. Angello, Jr., Director, Readiness Programming & Assessment

OSD 07232-06
5/3/2006 6:06:36 PM

~~FOUO~~

June *09,2006*

060806-15

TO. Dan Fata

CC: Eric Edelman
Peter Flory

FROM Donald Rumsfeld

SUBJECT Follow-up with MoD of Albania

You were with me when we met with the MoD of Albania. I have no idea what he was talking about. I will leave it in your hands to take care of it.

Thanks.

DHR ks2
060806-15

Please Respond By June 15, 2006

~~FOUO~~

OSD 10658-06
7/6/2006 12:13:43 PM
11-L-0559/OSD/58334

~~FOR OFFICIAL USE ONLY~~

I-06/007967-ES

USDP JUL 0 6 2006

INFO MEMO

FOR SECRETARY OF DEFENSE

FROM: PETER FLORY, ASSISTANT SECRETARY OF DEFENSE FOR INTERNATIONAL SECURITY POLICY JUN 30 2006

SUBJECT: Follow-up with MOD of Albania

- You asked about your conversation with Albanian MOD Mediu at the NATO Ministerial. (note next under)

- He was asking about this year's Southeast Europe Defense Ministerial (SEDM), which he will host in Tirana on 27 Sept.

    - This is the day prior to the NATO Informal Ministerial in Slovenia. You are scheduled to attend both Ministerials.

- Mediu was asking about a working-level meeting prior to the Ministerial that does not involve you and **we** do not know why he raised it.

    - We will designate an appropriate level US representative to attend this working-level meeting.

- We will provide your office with further details of the SEDM Ministerial in Tirana by mid-August.

~~FOR OFFICIAL USE ONLY~~

~~Classified by: Multiple Sources~~
~~Reasons: 1.4(b) and (d)~~
~~Declassify: 21 June 2016~~

Prepared by: Alanna Balaban
[SPIEPS (b)(6)
Pr

11-L-0559/OSD/58335

OSD 10658-06

7/6/2006 12:13:33 PM

POLICY COORDINATION SHEET

Subject of Memo: Follow-up with MOD of **Albania**

I-Number: 061007967-ES

Coordination:

ASD/ISP	Peter Flory See cover memo	June __, 2006
DASD EUR/NATO (acting)	Tony Aldwell	June 21, 2006
DASD EURASIA	Jim MacDougall Scott Schlesinger for	June 21, 2006

~~Classified by: Multiple Sources~~
~~Reasons: 1.4 (b) and (d)~~
~~Declassify: 21 June 2016~~

11-L-0559/OSD/58338

Prepared by: Alanna Balaban
ISP/EPS (b)(6)
Prepared on: 21 June 2006

~~FOUO~~

FILE COPY

MAR 1 3 2006

TO: Robert Rangel

FROM: Donald Rumsfeld

SUBJECT: Hunter's Statement about UAE

Duncan Hunter said the UAE shipped some nuclear triggers after they were asked not to by the United States. Please see if you can find out if that **is** true.

Thanks.

DHR.ss
031006-20

Please Respond By March 28,2006

OSD 10672-06
7161200612:59:18 PM

~~FOUO~~

p 7/5

June 29, 2006

TO Robert Rangel

FROM Donald Rumsfeld DR

SUBJECT: Draft a Letter to General Allen

Please have someone *draft* a nice letter from me to General Allen. Apparently, he is leaving OSD, and he has done. a darn good job on Asia stuff.

Thanks.

DHR.ss
SF062906-15

210 marines

Please Respond By July 14, 2006

7/3

SIR ___

attached,

v/r Jim

See editi

ok

DR

29 JUN 06

~~FOUO~~

OSD 10684-06

7/7/2006 10:41:25 AM

11-L-0559/OSD/58338

Brig Gen John Allen

Address

Dear John,

I understand you will be leaving us to head out to a new command position in the field for the Marine **Corps.**

You've done extraordinary work here. You and Richard Lawless have been **a** formidable team, and you've moved the ball forward in a wide variety of places in Asia. **Well done!**

I know your heart is in getting back **to the** field with Marines, and I **look** forward to hearing how your new command unfolds.

All the best,

60-3

THE SECRETARY OF DEFENSE
WASHINGTON

JUL 6 2006

2/0 Mariner

Brigadier General John Allen, USMC
Director of Asian and Pacific Affairs
Office of the Deputy Assistant Secretary of
Defense for Asia Pacific
2400 Defense Pentagon, Room 5C718
Washington, DC 20301-2400

Dear General Allen,

I understand you will be leaving us to head out to a new command position in the field for the Marine Corps.

You have done extraordinary work here. You and Richard Lawless have been a formidable team, and you have moved the ball forward in a wide variety of places in Asia. Well done!

I know your heart is in getting back to the field with Marines. I look forward to hearing how your new command unfolds.

All the best,

6 JUNE 6

29 JUN 06

OSD 10684-06
7/6/2006 31 10 PM

11-L-0559/OSD/58340

~~FOUO~~

JUN 09 2006

TO: Eric Edelman

FROM: Donald Rumsfeld

SUBJECT: Co-Partners

Why don't we get a push to get states in the United States to co-partner National Guards from our states to the provinces in Iraq and to the provinces in Afghanistan.

Thank.

DHR:dh
060806-18 (TS).doc

Please respond by June 29, 2006

Assign to: Shannon Green

~~FOUO~~

OSD 10710-06
7/7/2006 8:16:22 AM
11-L-0559/OSD/58341

~~FOR OFFICIAL USE ONLY~~

INFO MEMO

DSD
PNUSDP JUL 0 6 2006

FOR. SECRETARY OF DEFENSE

FROM: Peter W. Rodman, Assistant Secretary of Defense (ISA) JUL 5 2006

SUBJECT: Co-partnership between U.S. National Guards and Iraq and Afghanistan (U)

- ~~(FOUO)~~ You asked about getting states in the U.S. to partner their National Guards with provinces in Iraq and Afghanistan.
- ~~(FOUO)~~ Policy supports the idea of establishing partnerships between U.S. National Guard units and the national security forces in Iraq and Afghanistan through the National Guard Bureau's State Partnership Program (SPP).
  - These partnerships focus on building military capacity in areas collectively identified by the host country, National Guard, combatant command, and U.S Embassy.
- (U) Policy will work with CENTCOM and the National Guard Bureau on these steps:
  - First, identify funding.
    - We have asked General Abizaid's staff whether he supports establishing SPPs in Iraq and Afghanistan, since funding must come from CENTCOM.
  - Second, obtain the required official requests from the governments of Iraq and Afghanistan.
  - Third, work with the National Guard Bureau to match Iraq and Afghanistan with their U.S. National Guard partners.
- (U) We will send an update once we get General Abizaid's input.

TAB A – Coordination Sheet

OSD 10710-08
7/7/2006 8:16:15 AM
06/007549-ES

~~FOR OFFICIAL USE ONLY~~

Prepared by Shannon Green, OSD-ISA-NESA, (b)(6)

11-L-0559/OSD/58342

COORDINATION

Co-partnership between U.S. National Guards and Iraq and Afghanistan

~~USD(C)~~	~~Ms. Tina Jonas~~	
PDASD ISA	Ms. Mary Beth Long	3 July 06 per NGB
Principal Director, NESA	Brig Gen Paula Thornhill	30 Jun 06
Director, Northern Gulf	Mr. John Trigilio	30 June 2006
Deputy Director, SA	Ms. Laura Cooper	30 Jun 06
ASD(HD)	Mr Verga	JUN 29 2006

11-L-0559/OSD/58343

~~FOUO~~

061406-19

June 14,2006

TO: Peter Rodman

C C Eric Edelman

FROM: Donald Rumsfeld DR.

SUBJECT Preparation for the Ecuador Meeting

I sure didn't feel like I was well prepared for the Ecuador meeting today. I should have been updated on the Article 98 issue and the waiver. Maybe we didn't have enough time.

DHR.ss
SP061406-19

Please Respond By 06/23/06

~~FOUO~~

OSD 10715-06

11-L-0559/OSD/58344

7/7/2006 10 05 15AM

~~FOUO~~

061420-20

June 14,2006

TO: Eric Edelman

CC: Steve Bucci

FROM: Donald Rumsfeld DR.

SUBJECT Using Interpreters in Meetings

I notice that when we use an interpreter, as we did today with the Ecuador meeting, it certainly slows things down, and the time is used up awfully fast. I wonder how we ought to manage that in the future.

Thanks.

DHR:ss
SF061406-20

Please Respond By 06/30/06

~~FOUO~~

11-L-0559/OSD/58345

OSD 10717-06

7/7/2006 10:07:45 AM

7/12 ✓
1830

~~FOR OFFICIAL USE ONLY//CLOSE~~ HOLD

DD 7/13

ACTION MEMO

DSD
USD(P)

334

FOR SECRETARY OF DEFENSE

FROM: Ryan Henry, PD Under Secretary of Defense for Policy JUL 11 2006

SUBJECT: Bob Zoellick and the Defense Policy Board

AR Robert Range 7/12

- You asked for Policy's thoughts on placing Bob Zoellick and on the Defense Policy Board (next under).
- We feel that he would be constructive addition to the Board and would provide a valuable perspective.
- It is our understanding that you have already spoken with Bob Zoellick, and that he has accepted a position.
- We have prepared a package for your signature welcoming him to the Board (TAB A).
- The Defense Policy Board staff has contacted Mr. Zoellick to begin the appropriate administrative process.

11 JUL 06

COORDINATION: None.

Attachment: As stated.

26 Jun 06

~~FOR OFFICIAL USE ONLY//CLOSE~~ HOLD

OSD 10721-06

7/12/2006 2:40:21 PM

06/008382-ES

MA SD	7/13	SMA DSD	
USA SD	7/12	SA DSD	
EXEC SEC	7/12 1815 7/13 0700		
ESR MA	7/12	STF DIR	

11-L-0559/OSD/58346

~~FOUO~~

June 26,2006

TO: Eric Edelman

FILE COPY

FROM Donald Rumsfeld D.R.

SUBJECT Bob Zoellick and the Defense Policy Board

What do you think about putting Bob Zoellick on the Defense Policy Board?

Thanks.

DHR.ss
SP062606-22

Please Respond By 07/06/06

JUL 13 2006

SNOWFLAKE RESPONSE ATTACHED DHR 7/13

~~FOUO~~

OSD 10721-06

11-L-0559/OSD/58347

7/7/2006 10:27:10 AM

TAB A

THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON. DC 20301-1000

JUL 13 2005

Mr. Robert B. Zoellick
(b)(6)

Dear Bob.

I am delighted you have agreed to serve on the Defense Policy Board. The Board is chartered to provide the Department of Defense with independent, informed advice. The focus is on broad policy issues, not the specifics of hardware or the details of defense programs.

We have assembled a distinguished group of experts across the range of national security issues. Your participation would add great value to the Board. Attached is a list of the Defense Policy Board members. The next board meeting will be held on September 21-22,2006. I understand that my staff has already contacted you to begin the necessary administrative process.

I appreciate your willingness to help out and I look forward to working with you.

With best wishes,

Sincerely,

Enclosure
As stated

OSD 10721-06
7/13/2004 53:15 PM

11-L-0559/OSD/58349

Defense Policy Board
as of July 2006

Members:

Dr. Kenneth Adelman	Senior Counselor, Edelman Public Relations
Honorable Richard Allen	Senior Counselor, APCO Worldwide
Dr. Martin Anderson	Senior Fellow, Hoover Institution
Dr. Barry Blechman	President & Chairman, DFI International
Dr. Harold Brown	Counselor, CSIS Partner, Warburg Pincus & Co
ADM (Ret) Vernon Clark	Retired, USN
Ms. Victoria Clarke	Comcast
Dr. Eliot Cohen	Professor, Johns Hopkins University
Ms. Devon Cross	President, Donors' Forum on International Affairs
Amb Thomas Foley	Partner, Akin, Gump, Strauss, Hauer & Feld LLP
Hon Newt Gingrich	CEO, The Gingrich Group
Dr. Fred Ikle	Chairman of the Board, Telos Corporation and CMC Energy Services
GEN (Ret) John Keane	URS Corporation
Dr. Henry Kissinger	Chairman, Kissinger Associates, Inc
GEN (Ret) Richard Myers	Retired, USAF
Dr. James Schlesinger	Senior Advisor, Lehman Brothers
Dr. Kiron Skinner	Assistant Professor, Camegie Mellon University and Research Fellow, Hoover Institution

Dr. Ruth Wedgwood	Professor of International Law and Diplomacy and Director of International Law and Organization, Johns Hopkins
Mr. Christopher Williams	Partner, Johnston and Associates
Honorable Pete Wilson	Former Governor, California

334

ACTION MEMO

DSD_____

FOR SECRETARY OF DEFENSE

FROM: Eric Edelman, Under Secretary of Defense for Policy JUL 0 6 2006

SUBJECT: Invitation to join the Defense Policy Board

The Secretary has informally spoken with Robert Zoellick about joining the Defense Policy Board and he is willing to serve.

RECOMMENDATION That you sign the memo at Tab A formally inviting him to join.

COORDINATION: NONE

Attachment:
As stated

6 Jul 06

Prepared by: Ann Hansen, DPB, (b)(6)

26 Jun 06

OSD 10721-06

11-L-0559/OSD/58352

7/7/2006 10:28:36 AM

THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

Mr. Robert B. Zoellick
(b)(6)

Dear Robert,

I would like you to consider membership on the Defense Policy Board. The Board is chartered to provide us with independent, informed advice. The focus is on broad policy issues, not the specifics of hardware or the details of defense programs.

We have assembled a distinguished group of experts across the range of national security issues. Your participation would add great value to the Board. Attached is a list of the Defense Policy Board members. The next board meeting will be held on September 21-22, 2006.

I hope that you will accept this offer of membership, and I look forward to working with you

Sincerely,

Enclosure
As stated

11-L-0559/OSD/58353

Defense Policy Board Advisory Committee
(as of March 6, 2006)

Dr. Kenneth Adelman
Hon Richard Allen
Dr. Martin Anderson
Dr. Barry Blechman
Dr. Harold Brown
ADM (Ret) Vernon Clark
Ms. Victoria Clarke
Dr. Eliot Cohen
Ms. Devon Cross
Honorable Thomas Foley
Honorable Newt Gingrich
Dr. Fred Ikle
GEN (Ret) Jack Keane
Dr. Henry Kissinger
Gen (Ret) Richard Myers
Dr. James Schlesinger
Dr. Kiron Skinner
Dr. Ruth Wedgwood
Mr. Chris Williams
Honorable Pete Wilson

~~FOR OFFICIAL USE ONLY~~

TALKING POINTS FOR SECRETARY OF DEFENSE

Phone call with **ALAN GREENSPAN**

- I would like to invite you to become a member of the Defense Policy Board.
- The Board is a federal advisory committee that advises on matters of defense policy.
- They meet quarterly in March, June, September and December for two days.
- We have assembled a distinguished group of individuals including Henry Kissinger, Pete Wilson, Jim Schlesinger, Harold Brown, Tom Foley, Newt Gingrich...
- With your background and expertise, you will be an invaluable asset to the Board.
- Ann Hansen, the Executive Director of the Board, will be contacting you to get the consultant paperwork accomplished for your appointment.

~~FOUO~~

June 26,2006

TO: Eric Edelman

FROM. Donald Rumsfeld DR.

SUBJECT: Bob Zoellick and the Defense Policy Board

What do you *think* about putting Bob Zoellick on the Defense Policy Board?

Thanks.

DHR.ss
SF062606-22

Please Respond By 07/06/06

11-L-0559/OSD/58356

OSD 10721-06

7/7/2006 10:27:10 AM

ACTION MEMO

DSD_____

FOR SECRETARY OF DEFENSE

FROM: Eric Edelman, Under Secretary of Defense for Policy JUL 0 6 2006

SUBJECT: Invitation to join the Defense Policy Board

The Secretary has informally spoken with Robert Zoellick about joining the Defense Policy Board and he is willing to serve.

RECOMMENDATION: That you sign the memo at Tab A formally inviting him to join.

COORDINATION: NONE

Attachment:
As stated

Prepared by: Ann Hansen, DPB, (b)(6)

*06/*008645-PDUSDP

OSD 10721-06

11-L-0559/OSD/58357

7/7/2006 10:28:36 AM

THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

Mr. Robert B. Zoellick
(b)(6)

Dear Robert,

I would like you to consider membership on the Defense Policy Board. The Board is chartered to provide us with independent, informed advice. The focus is on broad policy issues, not the specifics of hardware or the details of defense programs.

We have assembled a distinguished group of experts across the range of national security issues. Your participation would add great value to the Board. Attached is a list of the Defense Policy Board members. The next board meeting will be held on September 21-22,2006.

I hope that you will accept this offer of membership, and I look forward to working with you.

Sincerely,

Enclosure
As stated

11-L-0559/OSD/58358

Defense Policy Board Advisory Committee
(as of March 6, 2006)

Dr. Kenneth Adelman
Hon Richard Allen
Dr. Martin Anderson
Dr. Barry Blechman
Dr. Harold Brown
ADM (Ret) Vernon Clark
Ms. Victoria Clarke
Dr. Eliot Cohen
Ms. Devon Cross
Honorable Thomas Foley
Honorable Newt Gingrich
Dr. Fred Ikle
GEN (Ret) Jack Keane
Dr. Henry Kissinger
Gen (Ret) Richard Myers
Dr. James Schlesinger
Dr. Kiron Skinner
Dr. Ruth Wedgwood
Mr. Chris Williams
Honorable Pete Wilson

TALKING POINTS FOR SECRETARY OF DEFENSE

Phone call with **ALAN GREENSPAN**

- I would like to invite you to become a member of the Defense Policy Board.
- The Board is a federal advisory committee that advises on matters of defense policy.
- They meet quarterly in March, June, September and December for two days.
- We have assembled a distinguished group of individuals including Henry Kissinger, Pete Wilson, Jim Schlesinger, Harold Brown, Tom Foley, Newt Gingrich...
- With your background and expertise, you will be an invaluable asset to the Board.
- Ann Hansen, the Executive Director of the Board, will be contacting you to get the consultant paperwork accomplished for your appointment.

~~FOR OFFICIAL USE ONLY//CLOSE~~ HOLD

INFO MEMO

DSD_____
USD(P)_____

FOR SECRETARY OF DEFENSE

JUL 06 2006

FROM: Ryan Henry, PD Under Secretary of Defense for Policy

SUBJECT: Bob Zoellick and the Defense Policy Board

- You asked for Policy's thoughts on placing Bob Zoellick and on the Defense Policy Board (next under).
- We feel that he would be constructive addition to the Board and would provide a valuable perspective.
- It is our understanding that you have already spoken with Bob Zoellick, and that he has accepted a position.
- We have prepared a package for your signature appointing him to the Board (TAB A).
- Should you be interested in calling Alan Greenspan as well, we have attached some suggested talking points for you (TAB B).

COORDINATION: None.

Attachment: As stated.

~~FOR OFFICIAL USE ONLY//CLOSE~~ HOLD

OSD 10721-06
7/7/2006 10:27:59 AM
06/008382-ES
11-L-0559/OSD/58361

THE SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

JUL 13 2006

334

Mr. Robert B. Zoellick
(b)(6)

Dear Bob,

I am delighted you have agreed to serve on the Defense Policy Board. The Board is chartered to provide the Department of Defense with independent, informed advice. The focus is on broad policy issues, not the specifics of hardware or the details of defense programs.

We have assembled a distinguished group of experts across the range of national security issues. Your participation would add great value to the Board. Attached is a list of the Defense Policy Board members. The next board meeting will be held on September 21-22,2006. I understand that my staff has already contacted you to begin the necessary administrative process.

I appreciate your willingness to help out and I look forward to working with you.

With best wishes,

Sincerely,

13 Jul 06

Enclosure
As stated

26 Jun 06

OSD 10721-06
7/13/2006 4:53:15 PM

Defense Policy Board
as of July 2006

Members:

Dr. Kenneth Adelman	Senior Counselor, Edelman Public Relations
Honorable Richard Allen	Senior Counselor, APCO Worldwide
Dr. Martin Anderson	Senior Fellow, Hoover Institution
Dr. Barry Blechman	President & Chairman, DFI International
Dr. Harold Brown	Counselor, CSIS Partner, Warburg Pincus & Co
ADM (Ret) Vernon Clark	Retired, USN
Ms. Victoria Clarke	Comcast
Dr. Eliot Cohen	Professor, Johns Hopkins University
Ms. Devon Cross	President, Donors' Forum on International Affairs
Amb Thomas Foley	Partner, Akin, Gump, Strauss, Hauer & Feld LLP
Hon Newt Gingrich	CEO, The Gingrich Group
Dr. Fred Ikle	Chairman of the Board, Telos Corporation and CMC Energy Services
GEN (Ret) John Keane	URS Corporation
Dr. Henry Kissinger	Chairman, Kissinger Associates, Inc
GEN (Ret) Richard Myers	Retired, USAF
Dr. James Schlesinger	Senior Advisor. Lehman Brothers
Dr. Kiron Skinner	Assistant Professor, Camegie Mellon University and Research Fellow, Hoover Institution

Dr. Ruth **Wedgwood**	**Professor of International Law and Diplomacy and Director of International Law and Organization, Johns Hopkins**
Mr. Christopher Williams	**Partner, Johnston and Associates**
Honorable Pete Wilson	Former **Governor, California**

July 07, 2006

TO: Vice President Richard B. Cheney

FROM Donald Rumsfeld

SUBJECT: Paper on the New World Paradigm

Attached is a paper I received in the mail from someone who seems to know me, but I can't remember him. I found his paper interesting, and thought you might like to see it.

Attach: CFC Position Paper "The New World Paradigm: USA Must Adjust Quickly and Correctly"

DHR:ss
SF070706-07

090

7 Jul 06

OSD 10743-06
7/7/2006 4:52:39 PM

7 Jul 06

11-L-0559/OSD/58365

11-L-0559/OSD/58366

CAPITAL FORMATION COUNSELORS, INC.®
FOUNDED 1961

2934 WEST BAY DRIVE
BELLEAIR BLUFFS, FLORIDA 33770

OWEN J. ROBERTS
CHAIRMAN AND CEO

MAILING ADDRESS
POST OFFICE BOX 1168
BELLEAIR BLUFFS, FLORIDA 33770

AREA CODE 727 • 581-6702

1 July 2006

Don –

Market volatility worldwide, five recent global paradigm shifts adverse to USA, nuclear Iran, Ahmadinejad's China visit and 11.2 m bbl/day USA energy deficit vulnerability.

You are precisely correct in what you are saying and doing. Bravo! Owen and Susan

CFC® Position Paper

THE NEW WORLD PARADIGM: USA MUST ADJUST QUICKLY AND CORRECTLY

Owen J. Roberts

1 July 2006

This document required hundreds of hours of vigorous intellectual inquiry.

We evaluate political, economic and financial information worldwide and present a crisp summary of a timely impact topic.

Your contemporaries and our friends universally indicate the Position Papers are:

- **thought provoking**
- **providing information not usually seen**
- **useful in their decision making**
- **presented in a concise format.**

We hope you find similar results to be true for you.

Copyright 2006, Capital Formation Counselors, Inc.®, All Rights Reserved

We have been musing on why recent, worldwide financial markets have shown considerable volatility, largely to the downside, and because financial markets are often barometers for the future, let us together see if we can discern some meaning out of this chaos.

Over many years for many unique reasons and largely earned, America came into the 21st century with enormous accumulated assets representing global dominance and power never before acquired by one nation. On a relative and absolute basis these advantages are being eroded in major ways. It is very important for us to understand these changes and adjust quickly and correctly to them. Failure to do so places us in great, permanent peril.

RECENT WORLDWIDE MARKETS VOLATILITY

There has been much recent evidence of market volatility.

Although there has been some recovery, common stocks in USA in a recent two week period gave up almost all of their accumulated gains for this calendar year, as represented by the Dow Jones Industrial, NASDAQ, Standard & Poor's and Russell 2000 stock averages. USA stock market aggregate losses were $1.5 trillion. To put this number in perspective, the federal government spends $2.5 trillion a year, the USA annual Gross National Product is $13 trillion a year and the aggregate personal net worth, including present home values of all Americans, is thought to be $53 trillion.

Many overseas stock market percentages were hit even harder. Emerging nations' markets have enjoyed large percentage gains over the last several years, fueled by the input of American investment capital seeking higher returns than were available in USA domestic markets. In a period as short as a week, these markets lost 10% of their value and in some cases more. Saudi Arabia had a percentage loss of over 54% from its February stock market peak. Japan sustained a 4.1% one day loss in the Nikkei, the largest daily loss in the past two years, resulting in a cumulative loss of 11.8% since the beginning of the year. Also, European stock markets moved to the downside.

Commodity prices have risen substantially over the last several years. This was largely *fueled* by China's economic industrializing process that demanded huge amounts of imported iron ore, copper and other industrial commodities. Commodity losses in many categories have been severe. Even gold, the historical fear refuge, and often viewed as the ultimate store of value asset class, had its major increase in price over the last five years reduced. Gold's 7.6% sell-off was the biggest decline in 15 years.

What has caused these downside reversals? We are surrounded with the usual talk suggesting overaggressive central bank interest rate policies, deficits of all kinds and other seemingly inadequate answers. It seems to us, and possibly to you, that more fundamental changes are taking place. Let us together pursue this line of inquiry.

FIRST CHANGE AGENT FOR NEW WORLD PARADIGM: CHINA

The initial and perhaps major reason for this paradigm shift is the change of China from a largely agrarian state to a rapidly industrializing state.

The core function that is working to the advantage of China is its vast labor force. Tens of millions of people previously unemployed or underemployed have now acquired skills and transitioned into being productive, useful industrial workers. The advancement of skills applies also to professions, especially science, and has been implemented in both China's business and military activities.

An enormous continuing cost advantage exists for China. It is because labor rates on the factory floor and in the sciences are enormously below the wage rates for comparable skills in other industrialized countries throughout the world. Therefore, China has exported to the rest of the world goods and now services, very substantially below the costs of the countries to which the goods and services are sent, thus resulting in a very advantageous balance of trade. As a consequence China has accumulated $1 trillion of liquid, foreign capital investments which are parked on the balance sheet asset side of China's central bank.

If China had not made this dramatic advancement toward a modern society, USA would have remained relatively unchallenged for its premier position in the world. But this is no longer true.

SECOND CHANGE AGENT FOR NEW WORLD PARADIGM: CRUDE OIL IMBALANCES

China, although it has substantial internal energy sources, is currently energy insufficient, particularly in crude oil and distillates. Therefore, China has to import large amounts of petroleum products to advance and prosper as a modern energy supported society. China continues to arrange new, worldwide additional sources of supply.

COUNTRIES ABLE TO EXPORT CRUDE OIL PRODUCT TO CHINA

The countries able to export crude oil to China are: Saudi Arabia 8.7 million bbl/day, Russia 6.7, Norway 2.9, Iran 2.6, Venezuela 2.4, United Arab Emirates, UAE, 2.3, Kuwait 2.2, Nigeria 2.2, Mexico 1.8. Iraq 1.5 and Libya 1.3. totaling 34.6 m bbl/day. This represents over 43% of the world's daily 80 m bbl/day consumption requirement.

THIRD CHANGE AGENT FOR NEW WORLD PARADIGM: PRICE OF CRUDE OIL

The new demand for crude oil, combined with the relatively long discovery, development and transportation timeline to bring new crude oil to market, has caused the supply to be largely fixed for the short term. With demand rising rapidly the price of oil has risen dramatically from less than $25 bbl to $70 bbl. The tight supply and demand circumstance is the world condition today. This leaves, at most, an unused worldwide capacity of 2.0 m bbl/day, as interdictions by terrorists in various parts of the world continue to interrupt supply.

It is an astounding fact that even with the enormous increase in price per barrel to $70 bbl there seems to be no indication of world demand decline. Similarly, the increased price of gasoline in USA, at times up to $3.00 per gallon, has not decreased its use.

FOURTH CHANGE AGENT FOR NEW WORLD PARADIGM: NEW PRODUCER RICHES

Petroleum exports have generated very large daily amounts of cash flow: Saudi Arabia $609,000,000 per day, Russia $469,000,000 per day, Norway $203,000,000 per day, Iran $182,000,000 per day, Venezuela $168,000,000 per day, UAE $161,000,000 per day, Kuwait $154,000,000 per day, Nigeria $154,000,000 per day, Mexico $126,000,000 per day, Iraq $105,000,000 per day and Libya $91,000,000 per day. This amounts to $2.4 billion per day.

These are astounding amounts of money, especially with no additional risk or investment required by the producers. In business terms increased gross fell to net, a condition that rarely exists.

If these prices hold for 12 consecutive months, the annual cash flow per year is: Saudi Arabia $222 billion, Russia $171 billion, Norway $74 billion, Iran $66 billion, Venezuela $61 billion, UAE $59 billion, Kuwait $56 billion, Nigeria $56 billion, Mexico $46 billion, Iraq $38 billion and Libya $33 billion This amounts to $882 billion or almost a trillion dollars per year.

All of this increase in price is a tax extracted from petroleum import users and is paid to petroleum exporters. As such, it represents an enormous shift in world financial and geopolitical power with the importers being the losers and the exporters being the winners. Never in recorded history has the world experienced a transfer of power from one category of nations to another in such astounding magnitude.

USA now imports 11.2 m bbl/day. If we assumed we could purchase oil at $35 a barrel but we are now paying $70 a barrel, the increase is a $392,000,000 tax on consumers daily. This is a $143 billion annual tax bill for USA and its citizens.

FIFTH CHANGE AGENT FOR NEW WORLD PARADIGM: RICHES TO SPEND

Assuming that each of the countries doubled its expenditures internally from the $35 increase and only exported the percentage previously available for export, the new funds flowing to the producing nation might be a strong catalyst to cause a change in behavior, sometimes to the substantial disadvantage to USA.

Saudi Arabia for many years has been a strong ally and large supplier of petroleum to USA. There have been and will continue to be policy differences between USA and Saudi Arabia. But USA is a long-term buyer of petroleum exports and a source of very needed technological advice and counsel. USA also has provided Saudi Arabia with a military shield against confiscation of its national wealth by Saddam Hussein whose armies stormed into Kuwait, with Saudi Arabia as his next target.

Times change, however, and Saudi Arabia is now a provider of petroleum to China and perhaps in the future Saudi Arabia will look to China for military protection against invaders and those who would confiscate its oil wealth. Saudi Arabia now receives $609,000,000 a day from exports which allows $222 billion a year to spend as it chooses.

Have the new petroleum riches to spend altered the behavior of Saudi Arabia?

RUSSIA: NEW RICHES TO SPEND AND BEHAVIOR CHANGES

Russia exports 6.7 m bbl/day of crude and therefore receives $469,000,000 a day, which amounts to $171 billion a year. President Vladimir Putin was initially very helpful to USA, but recently has been much less helpful. His ambition to return Russia to its former USSR glory and superpower status is often discussed in the corridors of international power. He has looked dimly on USA efforts to assist former parts of the USSR to become democratic, independent nations. Russia participates in joint military exercises with China and plans to pipe petroleum product directly to China. Russia is the largest exporter of natural gas in the world.

Have the new petroleum riches to spend altered the behavior of Mr. Putin?

VENEZUELA: NEW RICHES TO SPEND AND BEHAVIOR CHANGES

Venezuela exports 2.4 m bbl/day of crude and therefore receives $168,000,000 a day, which amounts to $61 billion a year. Since wrenching the control of government from its previous officials, President Hugo Chavez has essentially eliminated political opposition at home, suppressed a free press, and embraced Fidel Castro and his Cuban communist philosophies. He also has encouraged Bolivia and other countries in South America to join his vision for the future, which originally was socialistic but has taken on a stronger and stronger communist patina.

The belligerence with which Chavez treats the USA in general and President Bush in particular exceeds respectful international protocol. He has threatened to cut off crude export to USA. Chavez has unilaterally altered the conditions of the contracts of international oil companies that developed

Venezuela's oil fields using their own capital. It will be surprising if much of anything is left for those companies that took the risk when Chavez's confiscations are completed.

Have the new petroleum riches to spend altered the behavior of Mr. Chavez?

IRAN: NEW RICHES TO SPEND AND BEHAVIOR CHANGES

Iran exports 2.6 m bbl/day of crude and therefore receives $182,000,000 a day, which amounts to $66 billion a year.

President Ahmadinejad has embarked on a populist agenda using the recent, enormous oil revenues to subsidize many foodstuffs, subsidizing gasoline at 40 cents a gallon. He has raised tariffs on some imported products, discouraged foreign investment and vigorously embraced many tenets of centralized socialism. Ahmadinejad, with more and more government handouts, has become very popular with the working and nonworking poor.

Iran has large numbers of young people entering the workforce each year. The government states that unemployment is 10%, but it may be twice as large for this nation of 70,000,000 people. The small private sector in Iran is under stress with price controls and regulations and inflation is 15%. Ahmadinejad has the power to appoint the head of Iran's central bank.

The very substantial oil and gas business arrangements between Iran and China are significant. China will import large amounts of Iran's petroleum products and will also help fund the upgrading of Iran's domestic oil infrastructure and discovery of future properties thought to be very substantial.

As the civilized world came to understand that Iran had not been complying with international agreements executed by Iran and had been pursuing vigorously its clandestine nuclear bomb enrichment to allow the production of nuclear bombs on its soil, Ahmadinejad spoke to the world with various degrees of belligerence and denial, including the position that the Holocaust never occurred.

Have the new petroleum riches to spend altered the behavior of Ahmadinejad?

AHMADINEJAD RECENT VISIT TO CHINA MAINLAND

Ahmadinejad has made it clear that Iran will continue its nuclear program because it has support from very strong players on the world scene. China has the veto power on the Security Council to prevent any meaningful sanctions from being imposed by the UN on Iran. Ahmadinejad said "discussions focused on avenues for consolidating bilateral ties as well as important regional and international developments." The swift change in the tone and coloration of the remarks by Ahmadinejad during and after his visit to China makes us wonder if he was offered the technological nuclear assistance and know-how he wants. This scenario also fits with Ahmadinejad's recent much softer response to the incentives package offered by the five members of the UN Security Council and Germany.

THE CIVILIZED WORLD UNDERSTANDS THE HUGE RISKS OF NUCLEAR WMD IN IRAN

Much energy and effort has been expended by civilized nations to prevent Iran, a terrorist sponsoring nation, from obtaining the capacity to develop fully the technology to build nuclear bombs. Iran already possesses substantial short and intermediate missile capability.

Iran must not be given the opportunity to give these horrific weapons to irresponsible terrorist zealots driven by motives unacceptable to civilized nations and peoples.

FIVE CHANGE AGENTS FOR THE NEW WORLD PARADIGM

These change agents for the new world paradigm are:

- China: low cost capable labor force
- crude oil imbalances
- price of crude oil
- new producer riches
- new producer funded behavior changes

This paradigm shift impacts our USA very negatively.

We must decrease and even eliminate our dependence on foreign energy imports as rapidly as possible. They are taxing our nation very heavily and funding our adversaries hugely. They are providing our adversaries enormous means to increase their own military power and dose the gap on the cutting edge military technology and capability of USA that has been and continues to be a source of power for USA to give us the chance to prevent terrorists and others resorting to barbaric tactics from irrevocably destroying all the meaningful and precious human progress made throughout the centuries.

HOW NOT TO ELIMINATE USA IMPORT ENERGY DEFICIT

Some approaches to solve our energy dependence deficit already appear to be unproductive and against an ideal, optimum standard.

Interdiction of petroleum product in pipelines is occurring throughout the world today. The pipeline from northern Iraq carrying crude oil to Turkey has been blown up several times by terrorists. Before 2003, without insurgent strikes, the pipeline was shipping 700,000 bbl/day to world markets. In Nigeria, terrorists are stopping daily flow up to 550,000 bbl/day and have threatened oil refineries, oil tankers and workers. Customer countries should prefer not to route their supply pipelines through a country that in the future might limit or eliminate supply or attempt to coerce price contract changes. Putin did this with Russian gas to the Ukraine and the delivery of major gas supplies to Europe in the dead of a bitter winter, a result not well received by EU customer citizens.

A recent Wall Street Journal article said that Sudan is about to repudiate contracts with a major company now with a contractual 90/10% split in revenues. Sudan intends to cede these resources to another company splitting 50/50%. The controversy is currently in litigation in international courts.

Recently, Bolivia sent the troops to the oil fields to enforce its confiscation decrees, as did Trotsky in Russia early in the 20th century. Drilling offshore in politically backward nations seems to be an invitation for the investment of billions of dollars which, if successful in finding oil, may be or even probably will be confiscated.

Let us not seek solutions that are subject to geopolitical and military risk.

We all love corn and are vigorously for a farm policy that causes USA to never be dependent on foreign food stuffs to feed our people. But, to directly subsidize with taxpayers' money the unlimited conversion of corn into ethanol as an energy source may be a losing financial equation for the nation. Tax subsidies for huge modern windmills may also not pass the very sharp pencil test applying all cost inputs, including government subsidies, compared to energy output results. Whether it is ethanol, windmills or any other program, if any particular approach requires an energy equivalent of 1.3 barrels of oil to produce the equivalent 1.0 barrels of oil, the equation works only as long as there is a government subsidy.

We need an absolutely valid, analytical assessment of all cost inputs and energy outputs of all suggestions to solve our energy deficit of 11.2 million barrels of oil a day amounting to $784,000,000 a day or $286 billion a year. It is unconscionable that USA is not drilling in ANWR, Arctic National Wildlife

Refuge, which could by now be reducing our daily crude deficit by 12%, pumping and distributing 1.4m bbl/day, saving $98,000,000 a day or $36 billion a year.

HOW TO ELIMINATE USA IMPORT ENERGY DEFICIT

USA must make the decision now. Our internal energy deficit problem must be approached with a precise evaluation of the type of energy sources we use now and the most probable energy sources needed in the future.

We recommend that the import oil deficit be solved by new technology, dreamed up by yet unknown, innovative and creative personalities in the American tradition of Orville and Wilbur Wright, Thomas Edison, Sam Walton and Bill Gates. This is an eclectic collection of entrepreneurial genius, but that is exactly what this problem needs.

We suggest that $50 billion per year, starting now for a period of 5 years, be allocated to solving our critical national energy deficit problem. This represents a mere 2% of the present annual federal expenditures of $2.5 trillion a year. This is a miniscule amount in terms of the adverse consequences to our nation if we fail to act. These sums are not to be allocated through government bureaucracies. It can be done. It does, however, need to be structured in a creative and innovative way to give incentives to those demonstrating actual, real progress to solve our energy deficit problem.

USA PRESENT IMPORT OIL VULNERABILITY, IRAQ AND N. KOREA

The USA import oil vulnerability, Iraq outcomes and N. Korea are rarely put in the same context.

It certainly is not comforting, and should be very alarming, for the USA to know that the major present worldwide crude oil producers, Saudi Arabia, Iran and Iraq with fellow OPEC member Chavez's Venezuela and power player Russia's Putin, can work in concert to decrease world energy production and supply, thus strangling our nation with higher and higher oil prices. These countries are a supply oligopoly long embracing highest oil prices as their core, strategic first principle.

It does not take but a small amount of time analyzing our world geopolitical status, including our oil deficit crisis, to conclude how a cut and run Iraq strategy demolishes the time required to find a sound approach for our energy deficit. The Middle East without a strong USA military presence is not a condition we should wish to create, especially with the nuclear bomb threats with intercontinental ballistic missile capabilities now already in place in N. Korea and being vigorously pursued by Iran.

Such enormous harm is being done to our nation by those who are advocating a quit strategy in Iraq at the very moment the tide is turning. The problems in Iraq are not all solved, but many of them are behind us. The cut and run advocates are producing copious amounts of propaganda fodder for Al Jazeera to discourage a people who have endured unimaginable hardship and cruelty at the hands of the Saddam Hussein regime and who, if we do not quit, will impress us with their grit and steadfastness. Stay the course.

God bless our courageous men and women in uniform.

God bless our President George W. Bush.

God bless our Vice President Dick Cheney.

God bless our Secretary of State Condoleezza Rice.

God bless our Secretary of Defense Donald Rumsfeld.

God bless the United States of America.

Copyright 2006, Capital Formation Counselors, Inc.®, All Rights Reserved

We have been musing on why recent, worldwide financial markets have shown considerable volatility, largely to the downside, and because financial markets are often barometers for the future, let us together see if we can discern some meaning out of this chaos.

OUR USA IS VULNERABLE TO THESE PARADIGM SHIFTS

Over many years for many unique reasons and largely earned, America came into the 21st century with enormous accumulated assets representing global dominance and power never before acquired by one nation. On a relative and absolute basis these advantages are being eroded in major ways. It is very important for us to understand these changes and adjust quickly and correctly to them. Failure to do so places us in great, permanent peril.

RECENT WORLDWIDE MARKETS VOLATILITY

There has been much recent evidence of market volatility.

Although there has been some recovery, common stocks in USA in a recent two week period gave up almost all of their accumulated gains for this calendar year, as represented by the Dow Jones Industrial, NASDAQ, Standard & Poor's and Russell 2000 stock averages. USA stock market aggregate losses were **$1.5** trillion. To put this number in perspective, the federal government spends $2.5 trillion a year, the USA annual Gross National Product is **$13** trillion a year and the aggregate personal net worth, including present home values of all Americans, is thought to be **$53** trillion.

Many overseas stock market percentages were hit even harder. Emerging nations' markets have enjoyed large percentage gains over the last several years, fueled by the input of American investment capital seeking higher returns than were available in USA domestic markets. In a period as short as a week, these markets lost 10% of their value and in some cases more. Saudi Arabia had a percentage loss of over **54%** from its February stock market peak. Japan sustained a **4.1%** one day loss in the Nikkei, the largest daily loss in the past two years, resulting in a cumulative loss of 11.8% since the beginning of the year. Also, European stock markets moved to the downside.

Commodity prices have risen substantially over the last several years. This was largely fueled by China's economic industrializing process that demanded huge amounts of imported iron ore, copper and other industrial commodities. Commodity losses in many categories have been severe. Even gold, the historical fear refuge, and often viewed as the ultimate store of value asset class, had its major increase in price over the last five years reduced. Gold's 7.6% sell off was the biggest decline in 15 years.

What has caused these downside reversals? We are surrounded with the usual talk suggesting overaggressive central bank interest rate policies, deficits of all kinds and other seemingly inadequate answers. It seems to us, and possibly to you, that more fundamental changes are taking place. Let us together pursue this line of inquiry.

FIRST CHANGE AGENT FOR NEW WORLD PARADIGM: CHINA

The initial and perhaps major reason for this paradigm shift is the change of China from a largely agrarian state to a rapidly industrializing state.

The core function that is working to the advantage of China is its vast labor force. Tens of millions of people previously unemployed or underemployed have now acquired skills and transitioned into being productive, useful industrial workers. The advancement of skills applies also to professions, especially science, and has been implemented in both China's business and military activities.

An enormous continuing cost advantage exists for China. It is because labor rates on the factory floor and in the sciences are enormously below the wage rates for comparable skills in other industrialized countries throughout the world. Therefore, China has exported to the rest of the world goods and now services, very substantially below the costs of the countries to which the goods and services are sent, thus resulting in a very advantageous balance of trade. As a consequence China has accumulated $1 trillion of liquid, foreign capital investments which are parked on the balance sheet asset side of China's central bank.

If China had not made this dramatic advancement toward a modern society, USA would have remained relatively unchallenged for its premier position in the world. But this is no longer true.

SECOND CHANGE AGENT FOR NEW WORLD PARADIGM: CRUDE OIL IMBALANCES

China, although it has substantial internal energy sources, is currently energy insufficient, particularly in crude oil and distillates. Therefore, China has to import large amounts of petroleum products to advance and prosper as a modern energy supported society. China continues to arrange new, worldwide additional sources of supply.

COUNTRIES ABLE TO EXPORT CRUDE OIL PRODUCT TO CHINA

The countries able to export crude oil to China are: Saudi Arabia 8.7 million bbl/day, Russia 6.7, Norway 2.9, Iran 2.6, Venezuela 2.4, United Arab Emirates, UAE, 2.3, Kuwait 2.2, Nigeria 2.2, Mexico 1.8, Iraq 1.5 and Libya 1.3, totaling 34.6m bbl/day. This represents over 43% of the world's daily 80 m bbl/day consumption requirement.

THIRD CHANGE AGENT FOR NEW WORLD PARADIGM: PRICE OF CRUDE OIL

The new demand for crude oil, combined with the relatively long discovery, development and transportation timeline to bring new crude oil to market, has caused the supply to be largely fixed for the short term. With demand rising rapidly the price of oil has risen dramatically from less than $25 bbl to $70 bbl. The tight supply and demand circumstance is the world condition today. This leaves, at most, an unused worldwide capacity of 2.0 m bbl/day, as interdictions by terrorists in various parts of the world continue to interrupt supply.

It is an astounding fact that even with the enormous increase in price per barrel to $70 bbl there seems to be no indication of world demand decline. Similarly, the increased price of gasoline in USA, at times up to $3.00 per gallon, has not decreased its use.

FOURTH CHANGE AGENT FOR NEW WORLD PARADIGM: NEW PRODUCER RICHES

Petroleum exports have generated very large daily amounts of cash flow: Saudi Arabia $609,000,000 per day, Russia $469,000,000 per day, Norway $203,000,000 per day, Iran $182,000,000 per day, Venezuela $168,000,000 per day, UAE $161,000,000 per day, Kuwait $154,000,000 per day, Nigeria $154,000,000 per day, Mexico $126,000,000 per day, Iraq $105,000,000 per day and Libya $91,000,000 per day. This amounts to $2.4 billion per day.

These are astounding amounts of money, especially with no additional risk or investment required by the producers. In business terms increased gross fell to net, a condition that rarely exists.

If these prices hold for 12 consecutive months, the annual cash flow per year is: Saudi Arabia $222 billion, Russia $171 billion, Norway $74 billion, Iran $66 billion, Venezuela $61 billion, UAE $59 billion, Kuwait $56 billion, Nigeria $56 billion, Mexico $46 billion, Iraq $38 billion and Libya $33 billion. This amounts to $882 billion or almost a trillion dollars per year.

All of this increase in price is a tax extracted from petroleum import users and is paid to petroleum exporters. As such, it represents an enormous shift in world financial and geopolitical power with the importers being the losers and the exporters being the winners. Never in recorded history has the world experienced a transfer of power from one category of nations to another in such astounding magnitude.

USA now imports 11.2 m bbl/day. If we assumed we could purchase oil at $35 a barrel but we are now paying $70 a barrel, the increase is a $392,000,000 tax on consumers daily. This is a $143 billion annual tax bill for USA and its citizens.

FIFTH CHANGE AGENT FOR NEW WORLD PARADIGM: RICHES TO SPEND

Assuming that each of the countries doubled its expenditures internally from the $35 increase and only exported the percentage previously available for export, the new funds flowing to the producing nation might be a strong catalyst to cause a change in behavior, sometimes to the substantial disadvantage to USA

Saudi Arabia for many years has been a strong ally and large supplier of petroleum to USA. There have been and will continue to be policy differences between USA and Saudi Arabia. But USA is a long-term buyer of petroleum exports and a source of very needed technological advice and counsel. USA also has provided Saudi Arabia with a military shield against confiscation of its national wealth by Saddam Hussein whose armies stormed into Kuwait, with Saudi Arabia as his next target.

Times change, however, and Saudi Arabia is now a provider of petroleum to China and perhaps in the future Saudi Arabia will look to China for military protection against invaders and those who would confiscate its oil wealth. Saudi Arabia now receives $609,000,000 a day from exports which allows $222 billion a year to spend as it chooses.

Have the new petroleum riches to spend altered the behavior of Saudi Arabia?

RUSSIA: NEW RICHES TO SPEND AND BEHAVIOR CHANGES

Russia exports 6.7 m bbl/day of crude and therefore receives $469,000,000 a day, which amounts to $171 billion a year. President Vladimir Putin was initially very helpful to USA, but recently has been much less helpful. His ambition to return Russia to its former USSR glory and superpower status is often discussed in the corridors of international power. He has looked dimly on USA efforts to assist former parts of the USSR to become democratic, independent nations. Russia participates in joint military exercises with China and plans to pipe petroleum product directly to China. Russia is the largest exporter of natural gas in the world.

Have the new petroleum riches to spend altered the behavior of Mr. Putin?

VENEZUELA: NEW RICHES TO SPEND AND BEHAVIOR CHANGES

Venezuela exports 2.4 m bbl/day of crude and therefore receives $168,000,000 a day, which amounts to $61 billion a year. Since wrenching the control of government from its previous officials, President Hugo Chavez has essentially eliminated political opposition at home, suppressed a free press, and embraced Fidel Castro and his Cuban communist philosophies. He also has encouraged Bolivia and other countries in South America to join his vision for the future, which originally was socialistic but has taken on a stronger and stronger communist patina.

The belligerence with which Chavez treats the USA in general and President Bush in particular exceeds respectful international protocol. He has threatened to cut off crude export to USA. Chavez has unilaterally altered the conditions of the contracts of international oil companies that developed

Venezuela's oil fields using their own capital. It will be surprising if much of anything is left for those companies that took the risk when Chavez's confiscations are completed.

Have the new petroleum riches to spend altered the behavior of Mr. Chavez?

IRAN: NEW RICHES TO SPEND AND BEHAVIOR CHANGES

Iran exports 2.6 m bbl/day of crude and therefore receives $182,000,000 a day, which amounts to $66 billion a year.

President Ahmadinejad has embarked on a populist agenda using the recent, enormous oil revenues to subsidize many foodstuffs, subsidizing gasoline at 40 cents a gallon. He has raised tariffs on some imported products, discouraged foreign investment and vigorously embraced many tenets of centralized socialism. Ahmadinejad, with more and more government handouts, has become very popular with the working and nonworking poor.

Iran has large numbers of young people entering the workforce each year. The government states that unemployment is 10%, but it may be twice as large for this nation of 70,000,000 people. The small private sector in Iran is under stress with price controls and regulations and inflation is 15%. Ahmadinejad has the power to appoint the head of Iran's central bank.

The very substantial oil and gas business arrangements between Iran and China are significant. China will import large amounts of Iran's petroleum products and will also help fund the upgrading of Iran's domestic oil infrastructure and discovery of future properties thought to be very substantial.

As the civilized world came to understand that Iran had not been complying with international agreements executed by Iran and had been pursuing vigorously its clandestine nuclear bomb enrichment to allow the production of nuclear bombs on its soil, Ahmadinejad spoke to the world with various degrees of belligerence and denial, including the position that the Holocaust never occurred.

Have the new petroleum riches to spend altered the behavior of Ahmadinejad?

AHMADINEJAD RECENT VISIT TO CHINA MAINLAND

Ahmadinejad has made it clear that Iran will continue its nuclear program because it has support from very strong players on the world scene. China has the veto power on the Security Council to prevent any meaningful sanctions from being imposed by the UN on Iran. Ahmadinejad said "discussions focused on avenues for consolidating bilateral ties as well as important regional and international developments." The swift change in the tone and coloration of the remarks by Ahmadinejad during and after his visit to China makes us wonder if he was offered the technological nuclear assistance and know-how he wants. This scenario also fits with Ahmadinejad's recent much softer response to the incentives package offered by the five members of the UN Security Council and Germany.

THE CIVILIZED WORLD UNDERSTANDS THE HUGE RISKS OF NUCLEAR WMD IN IRAN

Much energy and effort has been expended by civilized nations to prevent Iran, a terrorist sponsoring nation, from obtaining the capacity to develop fully the technology to build nuclear bombs. Iran already possesses substantial short and intermediate missile capability.

Iran must not be given the opportunity to give these horrific weapons to irresponsible terrorist zealots driven by motives unacceptable to civilized nations and peoples.

FIVE CHANGE AGENTS FOR THE NEW WORLD PARADIGM

These change agents for the new world paradigm are:

- China: low cost capable labor force
- crude oil imbalances
- price of crude oil
- new producer riches
- new producer funded behavior changes

This paradigm shift impacts our USA very negatively.

We must decrease and even eliminate our dependence on foreign energy imports as rapidly as possible. They are taxing our nation very heavily and funding our adversaries hugely. They are providing our adversaries enormous means to increase their own military power and close the gap on the cutting edge military technology and capability of USA that has been and continues to be a source of power for USA to give us the chance to prevent terrorists and others resorting to barbaric tactics from irrevocably destroying all the meaningful and precious human progress made throughout the centuries.

HOW NOT TO ELIMINATE USA IMPORT ENERGY DEFICIT

Some approaches to solve our energy dependence deficit already appear to be unproductive and against an ideal, optimum standard.

Interdiction of petroleum product in pipelines is occurring throughout the world today. The pipeline from northern Iraq carrying crude oil to Turkey has been blown up several times by terrorists. Before 2003, without insurgent strikes, the pipeline was shipping 700,000 bbl/day to world markets. In Nigeria, terrorists are stopping daily flow up to 550,000 bbl/day and have threatened oil refineries, oil tankers and workers. Customer countries should prefer not to route their supply pipelines through a country that in the future might limit or eliminate supply or attempt to coerce price contract changes. Putin did this with Russian gas to the Ukraine and the delivery of major gas supplies to Europe in the dead of a bitter winter, a result not well received by EU customer citizens.

A recent Wall Street Journal article said that Sudan is about to repudiate contracts with a major company now with a contractual 90/10% split in revenues. Sudan intends to cede these resources to another company splitting 50/50%. The controversy is currently in litigation in international courts.

Recently, Bolivia sent the troops to the oil fields to enforce its confiscation decrees, as did Trotsky in Russia early in the 20th century. Drilling offshore in politically backward nations seems to be an invitation for the investment of billions of dollars which, if successful in finding oil, may be or even probably will be confiscated.

Let us not seek solutions that are subject to geopolitical and military risk.

We all love corn and are vigorously for a farm policy that causes USA to never be dependent on foreign food stuffs to feed our people. But, to directly subsidize with taxpayers' money the unlimited conversion of corn into ethanol as an energy source may be a losing financial equation for the nation. Tax subsidies for huge modern windmills may also not pass the very sharp pencil test applying all cost inputs, including government subsidies, compared to energy output results. Whether it is ethanol, windmills or any other program, if any particular approach requires an energy equivalent of 1.3 barrels of oil to produce the equivalent 10 barrels of oil, the equation works only as long as there is a government subsidy.

We need an absolutely valid, analytical assessment of all cost inputs and energy outputs of all suggestions to solve our energy deficit of 11.2 million barrels of oil a day amounting to $784,000,000 a day or $286 billion a year. It is unconscionable that USA is not drilling in ANWR, Arctic National Wildlife

Refuge, which could by now be reducing our daily crude deficit by 12%, pumping and distributing 1.4 m bbl/day, saving $98,000,000 a day or $36 billion a year.

HOW TO ELIMINATE USA IMPORT ENERGY DEFICIT

USA must make the decision now. Our internal energy deficit problem must be approached with a precise evaluation of the type of energy sources we use now and the most probable energy sources needed in the future.

We recommend that the import oil deficit be solved by new technology, dreamed up by yet unknown, innovative and creative personalities in the American tradition of Orville and Wilbur Wright, Thomas Edison, Sam Walton and Bill Gates. This is an eclectic collection of entrepreneurial genius, but that is exactly what this problem needs.

We suggest that $50 billion per year, starting now for a period of 5 years, be allocated to solving our critical national energy deficit problem. This represents a mere 2% of the present annual federal expenditures of $2.5 trillion a year. This is a miniscule amount in terms of the adverse consequences to our nation if we fail to act. These sums are not to be allocated through government bureaucracies. It can be done. It does, however, need to be structured in a creative and innovative way to give incentives to those demonstrating actual, real progress to solve our energy deficit problem.

USA PRESENT IMPORT OIL VULNERABILITY, IRAQ AND N. KOREA

The USA import oil vulnerability, Iraq outcomes and N. Korea are rarely put in the same context

It certainly is not comforting, and should be very alarming, for the USA to know that the major present worldwide crude oil producers, Saudi Arabia, Iran and Iraq with fellow OPEC member Chavez's Venezuela and power player Russia's Putin, can work in concert to decrease world energy production and supply, thus strangling our nation with higher and higher oil prices. These countries are a supply oligopoly long embracing highest oil prices as their core, strategic first principle.

It does not take but a small amount of time analyzing our world geopolitical status, including our oil deficit crisis, to conclude how a cut and run Iraq strategy demolishes the time required to find a sound approach for our energy deficit. The Middle East without a strong USA military presence is not a condition we should wish to create, especially with the nuclear bomb threats with intercontinental ballistic missile capabilities now already in place in N. Korea and being vigorously pursued by Iran.

Such enormous harm is being done to our nation by those who are advocating a quit strategy in Iraq at the very moment the tide is turning. The problems in Iraq are not all solved, but many of them are behind us. The cut and run advocates are producing copious amounts of propaganda fodder for Al Jazeera to discourage a people who have endured unimaginable hardship and cruelty at the hands of the Saddam Hussein regime and who, if we do not quit, will impress us with their grit and steadfastness. Stay the course.

God bless our courageous men and women in uniform.

God bless our President George W. Bush.

God bless our Vice President Dick Cheney.

God bless our Secretary of State Condoleezza Rice.

God bless our Secretary of Defense Donald Rumsfeld.

God bless the United States of America.

Copyright 2006, Capital Formation Counselors, Inc.®, All Rights Reserved

11-L-0559/OSD/58378

THE SECRETARY OF DEFENSE
WASHINGTON

JUL 7 2006

Mr. Owen J. Roberts
(b)(6)

Dear Owen,

Thanks so much for your note and for the paper on "The New World Paradigm." I appreciate it.

Best regards,

OSD 10743-06
7/7/2006 3:22:32 PM

11-L-0559/OSD/58379

LEGISLATIVE AFFAIRS

THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, DC 20301-1300

ACTION MEMO

July 12,2006 4:00 PM

FOR: SECRETARY OF DEFENSE

FROM: Robert L. Wilkie, Acting Assistant Secretary of Defense for Legislative Affairs, (b)(6) Robert Wilkie

SUBJECT: Revised Snowflake Response-Senator Inouye Engagement on Approps Mark-Up

You asked about mark-up on the Senate Defense Appropriations Bill that Senator Inouye raised at the June 1st State Dinner.

- Senate mark-up is expected to occur on July 18th.
- Since you will be unable to meet with him and Chairman Stevens, we have drafted letters to each with our key issues.

RECOMMENDATION: Sign the enclosed letters.

SECDEF DECISION:

Approve: _____

Disapprove: _____

Other: _____

Coordination: USD(C)

Attachments:
Letter to Senator Inouye (TAB A)
Letter to Senator Stevens (TAB B)
Snowflake #SF070506-04 (TAB C)

Prepared by CDR S. R. Grenier, Director Senate Affairs, (b)(6)

11-L-0559/OSD/58380

OSD 10768-06
7/12/2006 5:41:42 PM

110.01

12 Jul 06

6 Jul 06

THE SECRETARY OF DEFENSE

WASHINGTON, THE DISTRICT OF COLUMBIA

The Honorable Ted Stevens
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

As a follow up to our conversation at the State Dinner, I wanted to offer some thoughts on budget issues of importance to the Department.

- The $9 billion reduction from the FY 2007 President's Budget topline will do significant damage to our ability to recapitalize our forces and keep on track programs critical to winning the war on terror.
- Ensuring full funding for the Iraq and Afghan Security Forces is crucial to success in those countries and will enable them to continue progress in assuming responsibility for their own security.
- We are urgently in need of full funding for Coalition Support enabling our allies and friends to remain committed to assisting us in being successful in Iraq, Afghanistan and elsewhere around the world. Assisting them in developing their capabilities is the most cost effective way of reducing stress on U.S. forces
- The House cut $.8 billion of critical military intelligence including U2, RC-135 signal collection, improved biometric security at the borders and direct links to the battle field for signals and imagery intelligence from space. We need these funds to effectively prosecute the War on Terror.

Your support would be helpful on the following major acquisition programs:

- Future Combat System,
- Joint Strike Fighter,
- Missile Defense,
- Conventional Trident and
- Transformational Satellite

Additionally, there are initiatives where we believe savings can be achieved and we've included them in the budget as well. They are:

- Implementing our health care cost savings proposals; and

- Approving the Department's desire to go to a single engine manufacturer for the Joint Strike Fighter are all budget proposals that will generate sizeable savings to the Government.

Without those necessary savings, we will need to make still further cuts in important defense programs.

These are a few of the budget issues that are on my mind, and that I would greatly appreciate your help with during mark up. On behalf of our fighting men and women that serve our nation so well, please know you have our appreciation for your leadership and enduring support.

Sincerely,

THE SECRETARY OF DEFENSE

WASHINGTON, THE DISTRICT OF COLUMBIA

The Honorable Daniel K. Inouye
United States Senate
Washington, DC 20510

Dear Senator Inouye:

As a follow up to our conversation at the State Dinner, I wanted to offer some thoughts on budget issues of importance to the Department.

- The $9 billion reduction from the FY 2007 President's Budget topline will do significant damage to our ability to recapitalize our forces and keep on track programs critical to winning the war on terror.
- Ensuring full funding for the Iraq and Afghan Security Forces is crucial to success in those countries and will enable them to continue progress in assuming responsibility for their own security.
- We are urgently in need of full funding for Coalition Support enabling our allies and friends to remain committed to assisting us in being successful in Iraq, Afghanistan and elsewhere around the world. Assisting them in developing their capabilities is the most cost effective way of reducing stress on U.S. forces
- The House cut $.8 billion of critical military intelligence including U2, RC-135 signal collection, improved biometric security at the borders and direct links to the battle field for signals and imagery intelligence from space. We need these funds to effectively prosecute the War on Terror.

Your support would be helpful on the following major acquisition programs:

- Future Combat System,
- Joint Strike Fighter,
- Missile Defense,
- Conventional Trident and
- Transformational Satellite

Additionally, there are initiatives where we believe savings can be achieved and we've included them in the budget as well. They are:

- Implementing our health care cost savings proposals; and

- Approving the Department's desire to go to a single engine manufacturer for the Joint Strike Fighter are all hudget proposals that will generate sizeable savings to the Government.

Without those necessary savings, we **will** need to make still further cuts in important defense programs.

These are a few of the budget issues that are on my mind, and that I would greatly appreciate your help with during mark up. On behalf of our fighting men and women that serve our nation so well, please know you have our appreciation for your leadership and enduring support.

Sincerely,

~~FOUO~~

JUL 06 2006

TO: Robert Wilkie

CC: Tina Jonas

FROM: Donald Rumsfeld

SUBJECT: The Mark-Up and Meeting with Senator Inouye

I saw Senator Inouye at the State Dinner last Thursday. He talked about the mark-up on the bill and suggested he and I talk before then.

I need you folks to prepare me for this meeting and for my role in the legislation. It looks to me like it may be over before I can get involved. Please get the material to me quickly.

Thanks.

DHR...s
070506-04

Please Respond By 07/07/06

10/011

6 JUL 06

~~FOUO~~

OSD 10768-06

7/7/2006 4:48:01 PM

11-L-0559/OSD/58385

~~FOR OFFICAL USE ONLY~~

ASSISTANT SECRETARY OF DEFENSE
2600 DEFENSE PENTAGON
WASHINGTON, DC 20301-2600

HOMELAND DEFENSE

ACTION MEMO

DepSecDef
PD USD(P) JUL 0 9 2006

FOR SECRETARY OF DEFENSE

FROM: Paul McHale, Assistant Secretary of Defense (Homeland Defense)

Peter F. Verga
Principal Deputy
JUL - 7

SUBJECT: MOU with DHS

- You asked for options to assist DHS with creating their own planning capability (TAB A).
- There are two main aspects to consider:
  - A short-term solution enabling DHS to plan for current operations, and
  - A long-term solution enabling DHS to plan for future operations.
- DoD implemented the short-term solution by temporarily providing four planners to FEMA's National Headquarters and twelve planners to the Louisiana Joint Field Office.
- DoD can assist DHS in implementing a long-term solution by offering to place appropriate DHS personnel within strategic planning courses offered by DoD. As directed by the QDR Execution Roadmap for Building Partnership Capacity, the Joint Staff, working with OSD, is developing a plan to expand DoD training programs to allow for participation by civilian planners from other USG agencies.
  - Examples of DoD strategic planning courses include the Joint Forces Staff College's Homeland Security Planners Course; the Joint, Interagency and Multinational Planners Course; and the Joint Planning and Orientation Course. Another example is the Army's Functional Area 59 (FA59) Qualification Course.
- Ideally, once DHS has a number of graduates of DoD strategic planning courses, DHS should be able to develop the capacity to train its own strategic planners.

RECOMMENDATION: Joint Staff, in coordination with OASD(HD) develop options, assess implications, and provide a recommendation within 45 days.

SecDef Decision:

Approved D.H. Disapproved _____

COORDINATION: TABB JUL 12 2006

Attachment:
As stated

Prepared by: LTC Valente, OASD(HD)/FP & E (b)(6)

OSD 10832-06
7/10/2006 1:28:00 PM
060106-05

MA SD		SMA DSD	
TSA SD		SA DSD	
EXEC SEC		STF DIR	

~~FOR OFFICAL USE ONLY~~

~~FOUO~~

June 05,2006

TU: Paul McHale

CC: Eric Edelman

FROM: Donald Rumsfeld

SUBJECT MOU with DHS

I think we ought to consider an MOU with the Department of Homeland Security, where we agree *to* assist with planning for them and help to train planners – but only for a limited time. They are going to have *to* develop the capability to do it themselves.

It should be like when we staffed security at the airports after 9/11. We agreed to da it for a fixed period, while they recruited, organized, trained, and equipped to do it themselves.

Thanks.

DHR ks2
060106-05

Please Respond By June 29.2006

JUL 1 1 2006
SNOWFLAKE RESPONSE ATTACHED

06/007250

~~FOUO~~

OSD 10832-06
7/12/2006 10:41:29 AM

457

POLICY COORDINATION SHEET

Subject: MOU with **DHS**
Control Number: 060106-05

Title/Organization	Name	Date
Principal Deputy DOD GC	**Mr. Dan Dell'Orto**	**7/7/06**

11-L-0559/OSD/58388

A5-4

~~FOUO~~

June 05,2006

TO: Paul McHale

CC: Eric Edelman

FROM: Donald Rumsfeld

SUBJECT MOU with DHS

I think we ought to consider an MOU with the Department of Homeland Security, where we agree to assist with planning for them and help to train planners -- but only for a limited time. They are going to have to develop the capability to do it themselves.

It should be like when we staffed security at the airports after 9/11. We agreed to do it for a fixed period, while they recruited, organized, trained, and equipped to do it themselves.

Thanks.

DHR ks2
060106-05

Please Respond By June 29, 2006

06/007250

~~FOUO~~

OSD 10832-06

7/10/2006 1:25:45 PM

11-L-0559/OSD/58389

~~FOUO~~

June 26, 2006

TO: Ken Krieg

FROM: Donald Rumsfeld DR

SUBJECT *Washington Post Article* on C-130s

Please *get* back *to* me on what this article is about *on* the C-130s.

Thanks.

Attach: 6/24/06 *Washington Post* article by Renae Merle

DHR.ss
SP062606-20

Please Respond By July 07, 2006

SIR,
COPS TO
COL JENNINGS
CAPT PORTER
MS COLLINS
V/R
SR

~~FOUO~~

OSD 10835-06

7/10/2006 1:37:43 PM

TT-L-0559/OSD/58390

Washington Post
June 24, 2006
Pg. D1

'Incomplete' Report Used To Save Lockheed Project, Pentagon Says

By Renae Merle, Washington Post Staff Writer

Defense Secretary Donald H. Rumsfeld relied on potentially faulty data when he saved Lockheed Martin Corp.'s C-130J Hercules from cancellation last year, the Pentagon inspector general said in a report yesterday that partly blamed a poorly written contract for keeping the transport plane alive.

The Pentagon had recommended canceling the program, which had been plagued by rising costs and questions about its performance. However, an Air Force report to Rumsfeld concluded that it would cost nearly as much to cancel the contract -- about $1.78 billion -- as it would to complete it. That finding, along with intense pressure from members of Congress worried about jobs in their districts and industry leaders worried about Lockheed, prompted Rumsfeld to reverse course.

The new report challenged the Air Force's conclusions, saying it may have overstated the cost of canceling the contract by as much as $1.1 billion.

The cost estimate used by Rumsfeld to revive the Hercules was "incomplete and did not provide reliable information for making an informed decision," the report said. With the information given, Rumsfeld could not decide "the cost-effectiveness of continuing or terminating" the contract.

Part of the problem, the report said, was that Lockheed was operating under a commercial contract and not a typical government one, which meant the company did not have to provide cost and pricing data, including its profit margin.

In addition, "conflicting statements and ambiguities in the contract limited the Air Force's ability to assess" cancellation costs, the report said.

Lockheed began developing the C-130J in the early 1990s, using more than $1 billion of its own funds and expecting to find commercial customers for the large cargo aircraft. That market did not materialize, though.

In a response included in the report, the Air Force said its estimate of the cancellation cost was based on its best interpretation of the contract.

"The Air Force believes that the C-130J termination cost estimate was supported with the information that was available at the time," said Lt. Gen. Donald J. Hoffman, the military deputy in the Air Force's acquisitions office.

The proposed cancellation of the C-130J was part of a package of $30 billion in cuts aimed at reducing the federal budget deficit and offsetting the costs of the Iraq war. The cuts were decried by Congress, which accepted some but reversed others, including a plan to retire an aircraft carrier early.

The C-130J, which is used to move soldiers and equipment to hot spots, has been lambasted by

11-L-0559/OSD/58391

watchdog groups for years for its escalating costs and checkered performance record.

Lockheed has delivered more than 60 of the planes to the Air Force and Marines at a cost of $66 million each.

"How could you decide to buy something and not know how much it costs to get out of the contract?" said Jennifer Gore, spokeswoman for the Project on Government Oversight. "This shouldn't have been a commercial contract in the first place."

The inspector general's office has previously reported that many of the planes Lockheed delivered did not meet their contract specifications or operational requirements and that the Air Force fielded aircraft that could not perform their intended missions. The Air Force has challenged those findings.

The company declined to comment on the latest report.

After facing criticism from Sen. John McCain (R-Ariz.), the Air Force said last year that it would convert the commercial C-130J contract into a traditional one.

11-L-0559/OSD/58392

ACQUISITION,
TECHNOLOGY
AND LOGISTICS

THE UNDER SECRETARY OF DEFENSE

3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010

INFO MEMO

July 5,2006, 11:00 A.M.

FOR: SECRETARY OF DEFENSE

DepSecDef _____

FROM: Ken Krieg, USD(AT&L) JUL 1 0 2006

SUBJECT: Snowflake on "*Washington Post* Article on C-130s"

- ***An*** article (TAB A) states that you relied on "potentially faulty data" when you reversed the decision to cancel the C-130J program in May 2005. The article reflects a finding from a DoD-IG audit (TAB B). Of the $1.78B in estimated costs to terminate the program, the IG stated that the Air Force could only support $615M. The IG questioned the magnitude of a $720M "equitable adjustment" and $420M for acceleration of KC-130s deliveries.

- The article and audit correctly highlight uncertainties with the termination costs, including a commercial contract with no access to certified cost data and ambiguities in the contract regarding termination liability. As explained in my letter to Senator McCain at TAB C, we were exposed to significant contingent liabilities when ending C-130J production while accelerating delivery of KC-130J tankers under the same contract for a pressing Marine Corps need.

- Because of the unique clauses of this commercial contract, we knew at the time that there was a lack of fidelity in the termination estimate. Aware of the uncertainties, the Air Force estimates were reviewed by PA&E, AT&L, and Comptroller, and were presented to the 3-Star Programmers. The estimates were considered worst-case, based on contract terms and discussions with the contractor during negotiations for the multi-year contract. Even now, the exact cost cannot be determined, since we never negotiated an auditable settlement proposal with the contractor.

- The Air Force is converting the commercial C-130J contract into a traditional contract to improve DoD visibility into costs and better define termination liability.

COORDINATION: TAB D

Attachments:
As stated

Prepared by: Col Erik Nutley, (b)(6)

OSD 10835-06
7/10/2006 1:34:16 PM

11-L-0559/OSD/58393
2006-2025-ATL

~~FOUO~~

June 26, 2006

TO Ken **Krieg**

FROM: **Donald Rumsfeld** DR

SUBJECT ***Washington Post* Article on C-130s**

Please **get back** *to* **me** *on* **whet** this **article is about** *on* the **C-130s.**

Thanks.

Attach: 6/24/06 *Washington Post* article by Renae Merle

DHR.ss
SFO62606-20

Please Respond By July 07, 2006

COPY TO
COL JENNINGS
CAPT PORTER
MS COLLINS
V/R
DR

~~FOUO~~

11-L-0559/OSD/58394

Washington Post
June 24, 2006
Pg. D1

'Incomplete' Report Used To Save Lockheed Project, Pentagon Says

By Renae Merle, Washington Post Staff Writer

Defense Secretary Donald H. Rumsfeld relied on potentially faulty data when he saved Lockheed Martin Corp.'s C-130J Hercules from cancellation last year, the Pentagon inspector general said in a report yesterday that partly blamed a poorly written contract for keeping the transport plane alive.

The Pentagon had recommended canceling the program, which had been plagued by rising costs and questions about its performance. However, an Air Force report to Rumsfeld concluded that it would cost nearly as much to cancel the contract -- about $1.78 billion -- as it would to complete it. That finding, along with intense pressure from members of Congress worried about jobs in their districts and industry leaders worried about Lockheed, prompted Rumsfeld to reverse course.

The new report challenged the Air Force's conclusions, saying it may have overstated the cost of canceling the contract by as much as $1.1 billion.

The cost estimate used by Rumsfeld to revive the Hercules was "incomplete and did not provide reliable information for making an informed decision," the report said. With the information given, Rumsfeld could not decide "the cost-effectiveness of continuing or terminating" the contract.

Part of the problem, the report said, was that Lockheed was operating under a commercial contract and not a typical government one, which meant the company did not have to provide cost and pricing data, including its profit margin.

In addition, "conflicting statements and ambiguities in the contract limited the Air Force's ability to assess" cancellation costs, the report said.

Lockheed began developing the C-130J in the early 1990s, using more than $1 billion of its own funds and expecting to find commercial customers for the large cargo aircraft. That market did not materialize, though.

In a response included in the report, the Air Force said its estimate of the cancellation cost was based on its best interpretation of the contract.

"The Air Force believes that the C-130J termination cost estimate was supported with the information that was available at the time," said Lt. Gen. Donald J. Hoffman, the military deputy in the Air Force's acquisitions office.

The proposed cancellation of the C-130J was part of a package of $30 billion in cuts aimed at reducing the federal budget deficit and offsetting the costs of the Iraq war. The cuts were decried by Congress, which accepted some but reversed others, including a plan to retire an aircraft carrier early.

The C-130J, which is used to move soldiers and equipment to hot spots, has been lambasted by

TT-L-0559/OSD/58395

watchdog groups for years for its escalating costs and checkered performance record.

Lockheed has delivered more than 60 of the planes to the Air Force and Marines at a cost of $66 million each.

"How could you decide to buy something and not know how much it costs to get out of the contract?" said Jennifer Gore, spokeswoman for the Project on Government Oversight. "This shouldn't have been a commercial contract in the first place."

The inspector general's office has previously reported that many of the planes Lockheed delivered did not meet their contract specifications or operational requirements and that the Air Force fielded aircraft that could not perform their intended missions. The Air Force has challenged those findings.

The company declined to comment on the latest report.

After facing criticism from Sen. John McCain (R-Ariz.), the Air Force said last year that it would convert the commercial C-130J contract into a traditional one.

11-L-0559/OSD/58396

June 21,2006

Acquisition

Contracting and Funding for the C-130J Aircraft Program
(D-2006-093)

Department of Defense
Office of Inspector General

Quality *Integrity* *Accountability*

11-L-0559/OSD/58397

S 'ECTOF GENERAL
P. RTMENT OF DEFENSE
IC · ARMY I AVY DRIVE
G ON, VIR INIA 22202-

June 21,2006

MEMORANDUM FOR ASSISTANT SECRETARY OF THE AIR FORCE
(FINANCIAL MANAGEMENT AND COMPTROLLER)
NAVAL INSPECTOR GENERAL

SUBJECT: Report on Contracting and Funding for the C-130J Aircraft Program (Report No. D-2006-093)

We are providing this report for your information and use. The Military Deputy, Office of the Assistant Secretary of the Air Force (Acquisition) provided comments. We considered management comments on the draft of this report when preparing the final report. The complete text of the comments is in the Management Comments section of the report.

We appreciate the courtesies extended to the staff. Questions should be directed to Mr. Rudolf Noordhuizen at (b)(6) or Lisa E. Novis at (b)(6) See Appendix C for the report distribution. The team members are listed on the inside back cover.

Richard B. Jolliffe
Assistant Inspector General
Acquisition and Contract Management

substantiate the allegations that the Air Force C-130J System Program Office misused funds to support the C-130J commercial venture and that the funds for modification P00020 were not used for new work. We substantiated the allegation that the C-130J System Program Office contracting officer did not appropriately evaluate the contractor's performance against contract default provisions. The last three allegations discussed relate to a finding in a prior report and are addressed in Appendix B.

Management Comments and Audit Response. Although no comments were required, the Military Deputy, Office of the Assistant Secretary of the Air Force (Acquisition) stated that the PBD 753 implementation cost estimate was based on information that was available at the time the estimate was submitted. Because the C-130J aircraft were procured under Federal Acquisition Regulation Part 12, the contractor was not required to provide certified cost data. The Air Force also stated that there was no potential for an Antideficiency Act violation because the Air Force would have been allowed to fund the program within its Total Obligation Authority. The Air Force acknowledged that the allegation was partially accurate. The Air Force stated that they did not terminate the C-130J contract for default because they were actively working with the contractor to address shortfalls in meeting the commercial specification that was on contract.

We agree that the Air Force PBD 753 implementation cost estimate was based on the information that was available at the time the estimate was submitted. However, as we stated in the report, because the C-130J aircraft were procured under Federal Acquisition Regulation Part 12, the Air Force did not have cost and pricing data needed to perform a valid cost estimate. If PBD 753 had been implemented at the termination cost amounts the Air Force estimated, the FY *2006* President's Budget would not have had sufficient funds to pay for the termination. Though we agree that the Air Force would have been allowed to fund the implementation of PBD 753 within its Total Obligation Authority to avoid an Antideficiency Act violation, the Air Force should not have entered into a contract that could cost almost as much to cancel as to complete. Also the Government should require the contractor to deliver an aircraft compliant with the contract model specification, yet ten years after the first award in 1995, the contractor was still delivering non-compliant aircraft. The Air Force's acceptance of the deficient aircraft for such a long period limited its options in enforcement of the contract. This was compounded because the Air Force chose an inappropriate acquisition strategy and used ambiguous and vague contracting language.

A discussion of the management comments is in the Finding section and Appendix B of the report, and the complete text is in the Management Comments section.

11-L-0559/OSD/58399

Background

We performed this audit in response to four allegations made to the Defe Hotline concerning i g 1 1 di fc tl C-130J P:

g s i n d uthorizatic and Appropriation. (ress a tl ized a appropriated about $7.5 billion for the acquisition of the 130J aircraft for FYs 1994 through 2006. About $2.9 billion of the $7 5 i io was i the nn congressional increases to the Services' b d t equc t In 2003, DoD itt a request for approval of a lti t (M t fc the C- aircraft. The 2003 Authorization Conference Report 10J-772 authorized MYP authority for the C-130J aircraft program

C-130J Aircraft. h 130J performs the intratheater p i of the a m sio i and is a platform f lropp i ng troops and equipment s il areas. A Mobility Command Theater Commands, Air National Guard, Air F Reser Air F e Spe l Op i C n l, Marine Corps, and Coast G s th 130 aircraft fleet in peace a a i i s The C-130J aircraft is a medium tactical aircraft and is the newest upgrade to the C-130 fleet. Specialized versio f the aircraft include tl C-130J Stretch in which the cargo floor length of the aircraft is increased fi 40 to 55 feet, the WC 130J th pert weather onnai sa e i i the EC-130J that performs electronic warfare missions, the KC- 30J that performs air-refueling missions, r c 130J that performs search and rescue missions. In this report, a ii f will be referred to as the C-130J unless the discussion relates to a specific aircraft i

C-130J Program Information. The Under Secretary of Defense for Acqu Technology, and Logistics l ig a ed the C 130J Program as an Acquisition Categor IC program and assigned the Air Force acquisition executive as the milest d isi atl ity.* The Air Force C-130J System Program Office (SPO) contracting officer determined that the C 130J i aft was a ia it tl would meet the Government's needs with minor modifications. Lockheed Martin developed and p the C- 30J aircraft by sing a commercial aircraft l performance specification. Lockheed Marti ni i the C 130J aircraft an g the program development, developmental testing, and production process. Because the Air Force C-130J SPO ntracting officer determined l the C- i r ft was a i l i , l Air Force di l not apply l il ile decision process to this p r

Based on the congressional authority to purchase C-130J aircraft, the Air Force decided to buy tl aircraft in the quantities th i l Because of the contracting officer's decision to designate the aircraft as a mmercial item, Fed l Acquisition Regulation (FAR) Part 15, "Contracting by Negotiation," which allows Government ccess t contracto cost and pricing data as l as other Government oversight, did not have to be applied to the C procurement. (

* Acquisition Category IC programs are Major Defense Acquisition Programs with di for research, development, test, and evaluation of more than $365 million or procurement of more than $2.190 billion. The milestone decision authority is the Component head, or Service acquisition executive.

venture; whether money spent for contract modification P00020 appropriately related to new work requirements of the Air Force; and whether the contracting officer appropriately evaluated the contractor's performance against contract default provisions. *See* Appendix A for a complete discussion of the audit scope and methodology as well as prior coverage.

Managers' Internal Control Program

We did not review the managers' internal control program because the audit focused on whether the allegations on the C-130J Program had merit.

11-L-0559/OSD/58401

Table 2. MYP Aircraft Funding by Service and Fiscal Year
(in Millions)

	Air Force C-130J	Marine Corps KC-130J	Total Aircraft
FY 2003	$70.0	$279.6	$349.6
FY 2004	369.1	40.0	409.1
FY 2005	733.9	277.6	1,011.5
N 2006	567.7	277.6	845.3
N 2007	567.7	277.6	845.3
FY 2008	351.6	237.6	589.2
Total	**$2,660.0**	**$1,390.0**	**$4,050.0**

Program Budget Decision 753. DoD PBD 753, December 23, 2004, terminated the procurement of C-130J aircraft after FY 2005 for the Air Force and accelerated procurement of the remainder of the KC-130J aircraft for the Marine Corps in FY 2006. PBD 753 would have reduced the MYP contract by 25 aircraft from 60 to 35 aircraft. Table 3 shows the number of aircraft by Service and fiscal year under PBD 753.

Table 3. MYP Aircraft by Service and Fiscal Year Under PBD 753

	Air Force C-130J	Marine Corps KC-130J	Total Aircraft
FY 2003	0	4	4
FY 2004	4	0	4
FY 2005	11	4	15
FY 2006	0	12	12
FY 2007	0	0	0
FY 2008	0	0	0
Total	**15**	20	**35**

Criteria

Federal Acquisition Regulation. FAR clause 52.217-2, "Cancellation Under Multi-Year Contracts," October 1997, defines cancellation as

> the Government canceling its requirements for all supplies or services in program years subsequent to that in which notice of cancellation is provided. Cancellation shall occur by the date or within the time period specified in the Schedule, unless a later date is agreed to, if the contracting officer notifies the contractor that funds are not available for contract performance for any subsequent program year. If cancellation under this clause occurs, the contractor will be paid a cancellation charge not over the cancellation ceiling specified in the schedule as applicable at the time of cancellation. The cancellation

11-L-0559/OSD/58402

Table 5. MYP Cancellation Ceiling Amounts by Fiscal Year

Fiscal Year	Cancellation Ceiling Amount	Assumed Date of Cancellation
FY 2003	$110,000,000	November 16,2003
FY 2004	$474,200,000	November 16,2004
FY 2005	$439,700,000	November 16,2005
FY 2006	$383,300,000	November 16,2006
FY 2007	$347,300,000	November 16,2007
FY 2008	$0	-

The Air Force estimate to terminate the C-130J contract used the FY 2005 cancellation ceiling of $439,700,000 (rounded up to $440 million) that was provided in the contract. The Air Force stated that the cancellation ceiling covered contractor commitments to subcontractors and long-lead items. However, the Air Force C-130J SPO contracting officer could not provide any documentation to show how the ceiling cost was derived and what items were included in the ceiling amount. Under the terms of the cancellation clause, the C-130J SPO was not obligated to pay the full cancellation ceiling amount. The cancellation clause in the contract allowed the contractor to receive only an equitable adjustment or otherwise allowable cost resulting from the termination. In estimating the amount to pay the contractor, the Air Force should have considered that they had already paid advanced procurement for long-lead items, and PBD 753 did not cancel the Marine Corps aircraft procurements. The C-130J SPO contracting officer should only make payments to the contractor that are allowable by the contract cancellation clause and that the contractor can support. Assistant Secretary of the Air Force, Acquisition personnel stated by definition, a contract cancellation ceiling should represent the Government's maximum liability.

Equitable Adjustment. Air Force C-130J SPO personnel stated that the C-130J MYP contract included significant contingent liabilities beyond the contract cancellation ceiling. Air Force C-130J SPO personnel stated that in addition to the contract ceiling clause, an equitable adjustment clause in the contract states:

> **If the contract is terminated for the Convenience of the Government and the total quantity of aircraft procured is reduced to less than 60, an equitable adjustment shall be made to the unit price reflected in the schedule. All payments made, or to be made, will be adjusted to reflect the new unit price.**

However, the contract does not provide a methodology for determining the equitable adjustment, new unit prices, or a new contract price for procuring fewer than 60 aircraft. The equitable adjustment clause was separate from the cancellation provisions. The contract did not state whether these costs were included as part of the cancellation ceiling. Assistant Secretary of Air Force, Acquisition personnel stated that because the equitable adjustment clause was not contained in the cancellation provisions, but rather in the multiyear funding provision, it would not be included in the contract cancellation ceiling. In addition, the equitable adjustment wording did not provide any pricing

11-L-0559/OSD/58403

and the Air Force Cost Analysis Agency performed a detailed, documented analysis of the impact of PBD 753 on the F/A-22 Program. The analysis showed an increase to the F/A-22 program of $175 million from FY 2006 through FY 2008 if the Air Force terminated the procurement of C-130J aircraft after FY 2005 and accelerated procurement of the remainder of the KC-130J aircraft for the Marine Corps in FY 2006. The Institute for Defense Analysis validated the F/A-22 cost-estimation process. The F/A-22 Program Office was able to perform a detailed supported cost estimate because, unlike the C-130J Program, the F/A-22 Program was procured under a FAR Part 15 negotiated contract; therefore, the program office had validated cost and pricing data necessary to accurately estimate the effect on the F/A-22 overhead rates.

Total Estimated Cost to Terminate. The Air Force estimated it would cost $1.78 billion to terminate the procurement of the C-130J and accelerate the procurement of the KC-130J aircraft. However, $1.1 billion was not supported and another $440 million was supported only to the extent that it represented the ceiling amount in the contract. In addition, PBD 753 funding of the C-130J termination was not adequate to cover the Air Force estimate to terminate the C-130J MYP contract if the unsupported cost estimate was valid.

Air Force Budgeted Termination Costs

If PBD 753 had been implemented at the termination cost amounts the Air Force estimated, the FY 2006 President's Budget would not have had sufficient funds to pay for the termination. Based on figures provided by the Assistant Secretary of Air Force, Acquisition personnel, DoD budgeted $650 million in PBD 753 for the termination of the Air Force procurement of C-130J aircraft and the accelerated procurement of the remainder of the KC-130J aircraft for the Marine Corps in FY 2006. The initial cancellation cost amounts budgeted for in the FY 2006 President's Budget that Assistant Secretary of Air Force, Acquisition officials provided were based on lower estimates. The Air Force estimated the cost to implement PBD 753 at $1.78 billion. Because only $650 million was budgeted to implement PBD 753, the Air Force would have had a budget shortfall of $1.13 billion and the potential for an Antideficiency Act violation if PBD 753 had been implemented. However, Assistant Secretary of Air Force, Acquisition personnel stated that if the C-130J MYP contract termination had been implemented, funding would have been included in the FY 2007 budget request to cover the full termination cost, and avoid an Antideficiency Act violation.

Air Force MYP Contract

Air Force C-130J SPO contracting officer clouded the terms and conditions of the MYP contract by modifying standard FAR clause 52.217-2, "Cancellation Under Multi-Year Contracts."

FAR Clause 52.217-2. The Air Force C-130J SPO contracting officer modified FAR clause 52.217-2, "Cancellation Under Multi-Year Contracts," October 1997, and did not include an explanation of what the cancellation ceiling amount would cover. Instead, the C-130J MYP contract stated, "in the event of contract

11-L-0559/OSD/58404

cancellation; it canceled only the Air Force aircraft procurement, not the Marine Corps aircraft procurement. Instead of attempting to determine incurred costs that would be allowed up to the ceiling amount, the Air Force C-130J SPO personnel used the total ceiling price in its cost estimate. In addition, the Air Force C-130J SPO contracting officer could not provide documentation to show how the ceiling cost was derived and what items would be allowable under the ceiling. The language in the MYP contract also allowed for an equitable adjustment if less than 60 aircraft are purchased. The contract did not include the equitable adjustment in the cancellation provision; therefore, it is not clear whether the equitable adjustment should have been limited to the cancellation ceiling. In addition, the equitable adjustment clause should have included a pricing methodology to allow the Government to know its liability. Because the C-130J MYP contract was designated as commercial, the Air Force C-130J SPO personnel had no cost or pricing data needed to perform a valid cost estimate for the C-130J procurement reduction or the KC-130J procurement acceleration. The contract did not discuss equitable adjustments for accelerated deliveries. The increase in overhead to the F/A-22 program caused by the cancellation is the only cost supported with a detailed methodology and documentation. As a result, the cost estimate used by the Secretary of Defense to reinstate the C-130J Program was incomplete and did not provide reliable information for making an informed decision. Had the Air Force's cost estimate been closer to the original amount included in the PBD, the decision may have been different.

We are making no recommendations in this report because the problems within the C-130J Program were the result of the Air Force C-130J SPO contracting officer adopting a commercial acquisition strategy and using ambiguous contract language. Our previous report, DoD Inspector General Report No. D-2004-102, "Contracting for and the Performance of the C-130J Aircraft," July 23, 2004, addressed this issue. In addition, during an April 13, 2005, meeting, the Chairman of the Senate Subcommittee on AirLand, Committee on Armed Services, the Acting Secretary, and Chief of Staff of the Air Force agreed that the aircraft procurement should be converted from a commercial acquisition to a negotiated procurement under FAR Part 15. The Air Force is in the process of making that conversion. An undefinitized contract action was issued on February 10, 2006, to convert the FY 2006 through FY 2008 portion of the C-130J MYP contract to a FAR Part 15 negotiated contract.

Management Comments and Audit Response

Although not required to comment, the Military Deputy, Office of the Assistant Secretary of the Air Force (Acquisition) provided comments on the report. For a full text of the comments, see the Management Comments section of the report.

Management Comments. The Air Force stated that the PBD 753 implementation cost estimate was based on information that was available at the time the estimate was submitted. The Air Force, along with the Office of the Secretary of Defense (Program Analysis and Evaluation), developed a rough order of magnitude cost estimate based on the Government's interpretation of the contract terms and conditions, along with potential operational and programmatic impacts. There were no discussions with the C-130J contractor. The Air Force

11-L-0559/OSD/58405

Appendix A. Scope and Methodology

We performed the audit to examine four allegations made to the Defense Hotline regarding contracting and funding for the C-130J Aircraft Program.

We reviewed the operational requirement document and contract files for the C-130J Program dated from September 1995 through March 2006. We reviewed DoD policies for commercial acquisitions, contract terminations, and contractor performance. We discussed the allegations with the complainant. We also reviewed the Program Budget Decision and the documentation supporting the cost analysis. We interviewed officials in DoD, the Air Force, the Navy, the Marine Corps, and the Defense Contract Management Agency.

We performed this audit from June 2005 through March 2006 in accordance with generally accepted government auditing standards.

Use **of** Computer-Processed Data. We did **not** use computer-processed data to perform this audit.

Government Accountability Office **High-Risk** Area. The Government Accountability Office has identified several high-risk areas in DoD. This report provides coverage of the DoD weapons acquisition process and contract management and oversight high-risk areas.

Prior Coverage

During the last 5 years, the DoD Inspector General (IG) and the Air Force Audit Agency (AFAA) have issued two reports discussing the C-130J Program. Unrestricted DoD IG reports can be accessed at **http://www.dodig.mil/audit/reports**.

DoD IG

DoD IG Report No. D-2004-102, "Contracting for and the Performance of the C-130J Aircraft," July 23, 2004

AFAA

AFAA Report No. F2005-0008-FC3000, "Acquisition Management of the C-130J Program," September 28, 2005

11-L-0559/OSD/58406

Audit Result. We substantiated that the contracting officer did not appropriately evaluate the contractor's performance against contractor default provisions. The Air Force did not take decisive actions to improve contractor performance or pursue contractor default provisions primarily because the Air Force's own actions contributed significantly to the poor performance and the inability to obtain a mission-capable aircraft for approximately 10 years.

The Air Force issued three consecutive contracts for the C-130J aircraft even though Lockheed Martin had not delivered a specification-compliant aircraft. The Air Force could not easily terminate the C-130J MYP contract for cause when the Air Force continued to contract for additional aircraft and conditionally accept deficient aircraft.

The C-130J Program Office also issued contractor performance assessment reports that provided an unrealistic and inflated contract rating for the C-130J Program. Contractor performance assessment reports are prepared by the Government to rate contract performance.

The contracting officer stated that the Air Force did not consider termination for default as a viable option for the C-130J contract. The Air Force stated that because Lockheed Martin is the sole source for the C-130J aircraft, terminating the C-130J contracts with Lockheed Martin would have been useless. The Government had no other entity that could supply the C-130J aircraft. In a non-sole-source environment where the Government had another avenue to procure C-130J aircraft and related support, the Air Force could have terminated the contract for cause if the Contractor defaulted on the contract and procured the aircraft from another source. Additionally, the Air Force stated that if the courts found that the Air Force termination for default was incorrect, the termination of the contract would have become a termination for the Government's convenience.

In addition, Assistant Secretary of the Air Force, Acquisition personnel stated that it would not have been legally permissible to terminate the MYP contract for default while canceling the Air Force procurement but accelerating the Marine Corps procurement.

We believe that although the contract was sole source, the Air Force should not have ruled out a contract termination for cause if the contractors' performance failed to meet contract requirements. In addition, contractor performance assessment reports should have been accurate.

Management Comments. The Air Force acknowledged that the allegation was partially accurate. The Air Force stated that they did not terminate the C-130J contract for default because they were actively working with the contractor to address shortfalls in meeting the commercial specification that was on contract. Therefore, the Air force decided that the benefits of continuing the program with a planned strategy to use a Blue Ribbon panel to mediate ambiguous contract language and disposition outstanding deficiencies to fix the performance issues were in the best interest of the Government.

Audit Response. The Air Force stated that termination is always an option, but was not considered because of the performance challenges. The Air Force issued

11-L-0559/OSD/58407

Appendix C. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition, Technology, and Logistics
  Director, Acquisition Resources and Analysis
Under Secretary of Defense (Comptroller)/Chief Financial Officer
  Deputy Chief Financial Officer
  Deputy Comptroller (Program/Budget)
Director, Program Analysis and Evaluation
Director, Defense Procurement and Acquisition Policy

Department of the Navy

Naval Inspector General
Auditor General, Department of the Navy

Department of the Air Force

Assistant Secretary of the Air Force for Acquisition
Assistant Secretary of the Air Force (Financial Management and Comptroller)
Director, Air National Guard
Chief of Air Force Reserve
Auditor General, Department of the Air Force

Other Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Contract Management Agency
Director, Defense Logistics Agency

Non-Defense Federal Organization

Office of Management and Budget

11-L-0559/OSD/58408

Office of the Assistant Secretary of the Air Force (Acquisition) Comments

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

19 MAY 2006

MEMORANDUM FOR DEPARTMENT OF DEFENSE INSPECTOR GENERAL
ATTN: DEPUTY INSPECTOR GENERAL FOR AUDITING

FROM: SAF/AQ

SUBJECT: Report on Contracting and Funding for the C-130J Aircraft Program
(Project Number D2005-D000AB-0214.000)

The Air Force appreciates the opportunity to review and comment on this draft DoD IG report. Although no recommendations were provided under this report regarding the four allegations made to the Defense Hotline, we would like to provide management comments for your consideration as you finalize your report on the two allegations that you stated you have substantiated.

The Air Force believes that the C-130J termination cost estimate was supported with the information that was available at the time the estimate was submitted, and that there was no potential for an Antideficiency Act Violation under 10 U.S.C. § 2306b. Once PBD 753 was issued, the Air Force, along with OSD (PA&E), started the process of evaluating the impacts of PBD 753 direction. As part of the process, a cost estimate was developed that assessed the termination and cancellation cost risks associated with stopping the Air Force C-130J procurement and accelerating the procurement of Marine KC-130J. This estimate yielded a range of values. The process resulted in a cost estimate reflecting what was understood by Air Force and DoD officials to be a rough order of magnitude of the costs, based on the government's interpretation of the contract terms and conditions, along with potential operational/programmatic impacts. As part of the estimate, the Air Force considered: termination costs, cancellation costs, equitable adjustments required by express contract terms, C-130J/KC-130J operational impacts, and facility impacts based on overhead rates. The cost impact was provided to OSD(PA&E) for their consideration in assessing the executability of PBD 753. In addition, since C-130J aircraft were procured under FAR Part 12 procedures, which do not require the contractor to provide certified cost data, the government estimate was a "best effort" with the information known at the time.

Regarding your allegation concerning the potential for an ADA violation, we note that 10 U.S.C. § 2306b expressly provides that "The costs of cancellation or termination may be paid from -- (1) appropriations originally available for the performance of the contract concerned; (2) appropriations currently available for procurement of the type of property concerned, and not otherwise obligated; or (3) funds appropriated for those payments." Based on the above statute, the Air Force would have been allowed to fund the program within our Total Obligation Authority thus avoiding any potential ADA violation

11-L-0559/OSD/58409

Team Members

The Department of Defense Office of the Deputy Inspector General for Auditing, Acquisition and Contract Management prepared this report. Personnel of the Department of Defense Office of Inspector General who contributed to the report are listed below.

Bruce A. Burton
Rudolf Noordhuizen
Lisa E. Novis
Kendall L. Alexis
Ryan D. Berkheimer
Loriann Rivera-Nieves
Jillisa H. Milner

THE UNDER SECRETARY OF DEFENSE
3010 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-3010

ACQUISITION,
TECHNOLOGY
AND LOGISTICS

JUN 28 2005

The Honorable John McCain
United States Senate
Washington, DC 20510

Dear Senator McCain:

Thank you for your letter to Secretary Rumsfeld, in which you asked several questions concerning the C-130J multi-year contract. As we weighed the Department's priorities to establish the fiscal year 2006 budget request, alternatives to completing the C-130J program, such as upgrading our older C-130s to extend their service life were considered. As Secretary Rumsfeld explained in his letter of May 10,2005, to Chairman Warner, however, we have subsequently reviewed the implications of early termination of the C-130J multi-year contract and determined that it is in the best interest of the Department to fund the contract to completion in fiscal year 2008, as previously authorized by Congress. We appreciate the opportunity to answer your questions.

Contract Termination Costs. Several factors have led us to reconsider our original decision to cancel the C-130J program after fiscal year 2006. Most importantly, we have determined that the liability associated with that decision, as outlined below, would be greater than we previously had anticipated. The budget submission for fiscal year 2006 included $450 million to cover the contract cancellation ceiling. However, had we cancelled the program, there would have been significant contingent liabilities in addition to this amount. For example, under the terms of the multi-year contract, Lockheed Martin could be entitled to an equitable adjustment, based on reduced economies of scale associated with the procurement of fewer than 60 aircraft under the contract. In addition, our proposed acceleration of the procurement of eight KC-130J aircraft identified under the multiyear contract did not account for the earlier need of long-lead items for these aircraft. The break in production to acquire those items could increase costs. This more comprehensive review of the government's prospective liability was the "new information" to which the Secretary referred in his letter to Chairman Warner.

Relationship to the F/A-22 Program. We determined that the cost of the F/A-22 program would be expected to grow primarily due to increased overhead rates. In April 2005, the Defense Contract Management Agency estimated that the cost of the F/A-22 program would increase by $175 million during the period from fiscal year 2006 through 2008 if the Department were to cancel the C-130J program. The exact impact would not be known until future rates and production lots were negotiated. Overhead

expenses reflect accounts that contribute to multiple aspects of the company's business, and they are allocated based upon the relative contribution to each program or business unit. If the C-130J program were terminated, its share of these general business expenses would need to be re-allocated to other programs. The Lockheed Martin Aeronautics Company's accounting system includes three basic overhead rates: (1) engineering, (2) manufacturing, and (3) general and administrative (G&A). The engineering and G&A rates are computed company-wide for Lockheed Martin Aeronautics, whereas the manufacturing overhead rate is unique to each specific production site, such as the Marietta facility, which the F/A-22 and C-130J programs share. Lockheed Martin and DCMA, with the assistance of the Defense Contract Audit Agency (DCAA), negotiate these overhead rates annually, or when there is a significant change to the contractor's business base, such as when a production program is terminated earlier than expected.

C-130J as a Commercial Item. The decision to procure the C-130J aircraft as a commercial item was made years ago, and the procurement was to be a pilot program under the Federal Acquisition Streamlining Act of 1994. The pilot program was fashioned specifically to investigate the merits of procuring weapon systems using standard commercial acquisition practices. As you know, we have learned several lessons from this experience, and will apply them across the Department. However, as I have explained above, the procurement of the C-130J as a commercial item did not limit the Department's visibility into Lockheed Martin's overhead costs.

Advantages of a Commercial Item Procurement Strategy. In general, commercial item procurement strategies are successful for items that are well-defined in the commercial marketplace, because we can rely upon the market to determine that the items will meet our needs at reasonable prices. Where our needs mirror commercial demand, the chief advantage of using a commercial item procurement strategy is that it reduces or eliminates the time and cost for program development.

Schedule for Conversion of C-130J Multi-year Contract to FAR Part 15 Contract. We estimate that conversion of the contract will be complete by November 15,2005, when the Air Force will need to authorize the next program year under the multi-year contract. The negotiation will be supported by a DCAA audit, completion of which is estimated to occur on August 30,2005. The Air Force requested the DCAA audit on June 24,2005.

Thank you for your letter and continued support.

Sincerely,

Kenneth J. Krieg