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THE JOINT CHIEFS OF STAFF
WASHINGTON, D.C. 20301

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THE JOINT STAFF

30 October 1978

MEMORANDUM FOR US DELEGATION, NATO MEETING OF POLITICAL AND LEGAL EXPERTS
8-9 NOVEMBER 1978

Subject: Draft Proposal on Incendiary Weapons Submitted by Denmark and Norway

1. Attached for your information are documents and draft papers submitted to the NATO Military Committee concerning the subject proposal. These papers outline the tentative positions of the Military Committee and principal countries concerned with the incendiary issue prior to our discussions 8-9 November 1978.

TAB A - Denmark - Norway Draft Proposal
TAB B - NATO Military Committee Draft Memo - Security Implications for the Alliance of Possible Restrictions on the use of certain conventional weapons (Danish/Norwegian Proposal).
TAB C - Denmark's comments on NATO MC Draft Memo (Note: A corrected copy will be provided upon retransmission requested from NATO)
TAB D - Norway's comments on NATO MC Draft Memo
TAB E - Canada's comments on NATO MC Draft Memo
TAB F - FRG comments on NATO MC Draft Memo
TAB G - FRG working paper on 2nd Preparatory Conference for 8-9 November 1978 NATO Meeting.

2. The US agreed with the NATO MC assessment of the military implications of the Danish-Norwegian proposal.

3. For your information the NATO MC staff is also attempting to draft a proposal on incendiaries which will meet both the military requirements and the humanitarian concerns of the Alliance. I will forward a copy of this draft proposal when completed later this week.

Joseph N. Smith

Joseph N. Smith
Colonel, USMC
Maritime/UN Negotiations
Division, J-5

DECLASSIFIED
BY: JS
10/21/2014

Copy to:
AMB Aldrich, State Dept
Mr. Matheson, State Dept
Mrs. Mazeau, ACDA
Mr. Solf, Dept of Army

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(3)

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DE RUEOEBA #4761 0882137
ZNR UUUUU
R 292105Z MAR 79 30 MAR 79
FM DAMCON FRJ MSN FOR SEC ARMY DOVER NJ//DMCPM-SA// TOR: 1548
TO US MISSION GENEVA 3800//CERTAIN CONVENTIONAL WEAPONS DELEGA CH: 05011
MR. ACTION: CCV S
POLLARD// INFO: DCM
BT FOX
UNCLAS PC
SUBJECT: MINE CAPABILITIES ICA
A. TUNEGOM BETWEEN MR. POLLARD AND MR. DICKEY, PMSA, 29 MAR 79, SAR NR
SALT
1. AS AGREED IN REF A THE FOLLOWING IS A LIST OF US MINE CAPABILITIES: CD
CTR
MINE EMPLACEMENT TARGET L/M TYPE NEUTRALIZATION SCC
M-14 HAND AP BLAST CONV NONE NSC
M-18A2 HAND AP BLAST/FRAG CONV NONE CHRON
M-18A1(CLAYMORE) HAND AP FRAG CONV ELECT COMM 14 M
OR NONE
M26 HAND AP FRAG CONV NONE
M15 HAND AT BLAST CONV NONE
M19 HAND AT BLAST CONV NONE
M21 HAND AT MS/BLAST CONV NONE
M24 HAND AT ROCKET CONV NONE
MCC HAND AT ROCKET CONV NONE

PAGE TWO RUEOEBA4761 UNCLAS
MINE EMPLACEMENT TARGET L/M TYPE NEUTRALIZATION
M24 HELO AT BLAST NDM SELF
XM74 GEMSS AP FRAG CONV SELF
XM75 GEMSS AT MS CONV SELF
XM131 MOPMS AP FRAG CONV REMOTE/SELF
XM132 MOPMS AT MS CONV REMOTE/SELF
BLU92/B CATOM/AIR AT MS NDM SELF
BLU92/B CATOM/AIR AP FRAG NDM SELF
MGDE/MY31
(ADAM) ARTY AP FRAG NDM SELF
M719/M741
(RAAM) ARTY AT MS NDM SELF
ENAM AIM AT PLAYE CHG NDM SELF
2. THERE ARE TWO SWEDISH FFV MINES. FFV STANDS FOR FORENADE FABRIKSVERKEN A STATE OWNED INDUSTRIAL GROUP. THE FFV-013 IS SIMILAR TO THE US-CLAYMORE MINE. IT IS DETONATED BY ELECTRICAL COMMAND (WIRE) IT IS .42M WIDE, .25M HIGH AND WEIGHS APPROX. 20KGS.

IT CONTAINS 1200 - 5 GRAM HEXOGANAL SHAPED FRAGMENTS. THEY ARE ON

A PRESCORED PLATE. THE EXPLOSIVE CHARGE IS CONTAINED IN A GLASS

PAGE THREE RUEOEBA4761 UNCLAS
FIBRE HOUSING. IT IS DESIGNED FOR USE AGAINST PERSONNEL ASSEMBLYS, LIGHT MATERIAL AND COVERING HELICOPTER LANDING ZONES. TCE FRAGMENT PATTERN IS 4M HIGH; 140M WIDE AT A RANGE OF 150M FROM THE MINE. THE FFV 02B IS A HAND EMPLACED FULL WIDTH ANTI-TANK MINE THAT HAS TWO DESIGNATIONS AU (REUSABLE) OR SB (SELF-DESTRUCT). THEY HAVE NEVER STATED HOW IT COULD BE REUSED. IT IS SIMILAR TO THE US M21 MINE. IT HAS A MS PLATE AND A MAGNETIC INFLUENCE FUZE. IT IS 25MM DIA BY 11MM HIGH. ITS WEIGHT IS 7.5KG. THE OPERATIONAL LIFE OF THE MINES ARE 30 DAYS FOR THE FFV013SD AND 180 DAYS FOR THE FFV02BAU. THEY

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HAVE A BOOBY TRAP (ANTI-DISTURBANCE) FEATURE IN THE SB VERSION ONLY. THESE ARE THE ONLY TWO SWEDISH MINES THAT INFO ON IS READILY AVAILABLE IN THIS OFFICE.
3. THIS OFFICE HAS NO KNOWLEDGE OF ANY NDM'S WHICH HAVE A REMOTE NEUTRALIZATION CAPABILITY WITH OUT A SELF NEUTRALIZATION BACKUP. THE USAF GRASSHOPPER MINE WAS NEVER FULLY DEVELOPED AND NEVER HAD A REMOTE NEUTRALIZATION CAPABILITY.
BT

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offered prior to Conference

~~CONFIDENTIAL WORKING PAPER~~

file CCW

DRAFT PROTOCOL ON PROHIBITIONS OR RESTRICTIONS ON THE USE OF INCENDIARY WEAPONS

(4)

DEFINITIONS

For the Purpose of this Protocol:

1. "Incendiary weapon" means any weapon or munition which is primarily designed to set fire to objects or to cause burn injury to persons through the action of flame, heat, or a combination thereof, produced by a chemical reaction of a substance delivered on the target.

2. Incendiary weapons can take the form of, for example, flame throwers, fougasses, shells, rockets, grenades, mines, bombs, and other containers of incendiary substances.

3. Incendiary weapons do not include:

(a) Munitions which may have incidental incendiary effects, such as illuminants, tracers, smoke or signalling systems;

[(b) Munitions which rely for their principal effect upon fragmentation, penetration or blast and which have secondarily an incendiary effect.]

U. S. POSITION

A. Imperative changes: none.

B. Important changes: Delete "the use of" from the title of the protocol. Delete brackets from paragraph 3(b).

C. Drafting changes: none.

Comment: The Delegation should oppose any attempts at modification of paragraphs 1 or 3. In particular, any efforts to modify these paragraphs or other parts of the protocol to establish rules restricting the use of white phosphorous should be opposed. The U. S. consistently has opposed any restriction on white phosphorous as it would be impractical in combat. If a spotter round (white phosphorous or smoke) is fired into an area for spotter or marking purposes to note the location of enemy troops, and any of those troops are wounded by the round, the restriction would be violated.

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4. ["Flame weapon" is any incendiary munition designed primarily to produce flame effects similar to those of napalm.]

or

["Flame weapon" is any incendiary munition in which the incendiary substance is based on a gelled liquid hydrocarbon, such as napalm, [or an ungelled [liquid] hydrocarbon] or any other substances designed primarily to produce [similar] flame effects [to those produced by napalm].]

or

["Flame weapon" means any incendiary munition specifically designed to produce incendiary effects by means of the delivery on the target of flame-producing agents such as gelled and ungelled hydrocarbons and organometallic substances, their compounds and derivatives and other substances having similar effects. Napalm is a flame weapon.]

U. S. POSITION

A. Imperative changes: Amend to include only munitions based on a gelled hydrocarbon, such as napalm, or on another substance which is used in a manner to produce similar effects. The Delegation should not accept any definition which would include as flame weapons other types of incendiary munitions (including certain pyrophorics) which are not designed to disperse flaming material over the target.

B. Important changes: none.

C. Drafting changes: none.

Comment: The U. S. reached tentative agreement during the 1979 session to accept the definition of "flame weapon" which appears in the revised Netherlands-Australian proposal. After further consideration, the Delegation could accept such a formulation as:

"Flame weapon" is any incendiary munition in which the incendiary substance delivered on the target is based on a gelled liquid hydrocarbon, such as napalm, or any other substance, such as an ungelled liquid hydrocarbon, designed primarily to produce similar flame effects to those produced by napalm.

5. "Concentration of civilians" means any concentration of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns of refugees or evacuees, or groups of nomads.

U. S. POSITION

A. Imperative change: none.

B. Important changes: none.

C. Drafting changes: none.

Comment: The U. S. Delegation should repeat in any Working Group or Committee of the Whole report on the incendiaries protocol the following language from the 1979 Conference session's Working Group Report:

> "The definition of 'concentration of civilians' is intended to convey a word picture to the military commander regarding the protected character of the civilian population, rather than to present a precise mathematical [ADD: or geographical] formulation of what is a 'concentration' of civilians. The commander's attention is directed by the definition to the concern he must have for the presence or absence of the civilian population, which is fluid in wartime, rather than to the character or size of the city, town or village. It is understood that 'civilians' means those persons who are not taking a direct part in the hostilities."

6. "Military objective" means, so far as objects are concerned, any object which by its nature, location, purpose, or use makes an effective contribution to military action and whose total or partial destruction, capture or neutralization in the circumstances ruling at the time, offers a definite military advantage.

7. "Civilian objects" are all objects which are not military objectives as defined in paragraph 6.

U. S. POSITION

A. Imperative changes: none.

B. Important changes: delete paragraph 7 as superfluous.

C. Drafting changes: Insert a comma between "neutralization" and "in" in paragraph 6.

8. "Feasible precautions" are those precautions which are practicable or practically possible taking into account all circumstances ruling at the time, including humanitarian and military considerations.

U. S. POSITION

A. Imperative changes: none.

B. Important changes: none.

C. Drafting changes: none.

Comment: This definition differs from that contained in the Mines and Boobytraps Protocol. This is the preferred definition, and the Mines Protocol definition should be changed to conform to it.

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10. It is prohibited in any circumstances to make any military objective located within a concentration of civilians the object of attack by air-delivered [flame] [incendiary] weapons.

U. S. POSITION

A. Imperative changes: delete "incendiary" from the provision.

B. Important changes: delete "in any circumstances" from the provision.

C. Drafting changes: none.

Comment: The Delegation should object to any expansion of "air-delivered" to suggest reference to anything other than aircraft (helicopters or fixed-wing aircraft), such as ground-to-ground delivery systems (artillery). Moreover, the Delegation should place in the record its understanding that "air-delivered" refers only to fixed-wing aircraft and helicopters.

11. It is prohibited to make any military objective located within a concentration of civilians the object of attack by means of incendiary munitions, except when that military objective is clearly separated and distinct from the concentration of civilians and all feasible precautions are taken with a view to limiting the incendiary effects to the military objective and to avoiding, and in any event to minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects.]

U. S. POSITION

A. Imperative change: delete this provision.

B. Important changes: none.

C. Drafting change: none.

Comment: This provision, when read with paragraph 10, could be taken to prohibit the attack of military objectives with air-delivered incendiaries unless they are separate and distinct from concentrations of civilians. Moreover, it conflicts with Article 57 of Protocol I in that in some circumstances incendiaries may result in less risk of collateral injury than conventional high explosive munitions.

[Protection of combatants

12. It is prohibited to use incendiary weapons against combatants as such.

or

(a) It is prohibited to use incendiary weapons against combatants except when they:

(i) are engaged in a combat situation where close air support is necessary;

(ii) are in, or in the vicinity of, a military objective such as armored vehicles, field fortifications, bunkers, pill-boxes or other similar objectives.

(b) This provision is without prejudice to the protection given to non-combatant members of the armed forces by the rules of international law applicable in armed conflicts.]

U. S. POSITION

A. Imperative changes: delete entire paragraph 12. Oppose any prohibition on incendiary attacks on combatants.

B. Important changes: none.

C. Drafting changes: none.

Comment: No adequate humanitarian rationale has been offered for distinguishing between combatants in the open and combatants in vehicles or fortifications; furthermore, no clear lines of demarcation have been suggested which would eliminate the risk of war crimes allegations as a result of casualties arising from use of incendiaries on the battlefield. The proposal offers the attacker a distinct advantage over the defender in that the defender could not use incendiaries against the attacker (who would be exposed), while the attacker would not be limited in his use of weapons (as the defender generally will be better protected, and subject to the exception in subparagraph [a(ii)]).

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(5)

COMMENTS AND SUGGESTIONS RE STATE DRAFT CCW CONVENTION OF 25 JUNE 1980

1. Third preambular paragraph: add at end new clause:

> and desiring further to adopt new rules prohibiting or restricting for humanitarian reasons the use of specific types of conventional weapons.

Reasons: The preamble as now drafted nowhere speaks to the reasons for this convention, i.e., to develop new rules for the prohibition or restriction of certain uses of conventional weapons. This fix also assures recognition in the text of the treaty that these are new rules and not codifications of existing customary international law, an imperative point. It might also be useful to change the lead words from Basing themselves to Reaffirming, since the latter key word is a more accurate description of what the existing paragraph does. "Basing themselves" erroneously infers that these new rules are customary law.

2. Fifth preambular paragraph: change lead word from Recalling to Mindful.

Reason: Avoids duplication of the same key word used in the second preambular paragraph.

3. The last preambular paragraph should be bracketed, since general and complete disarmament is not the subject of this treaty. This paragraph is irrelevant.

4. In the event a reprisal regime is not adopted for failures to abide by the rules set forth in the annexed protocols, suggest adoption of a new Article 1 bis explicitly setting forth a specific regime of material breach. It is not at all clear that violations of any of these rules to be adopted on weapons use would be properly remedied by the otherwise illegal use of a weapon through a reprisal. Use of the material breach formula avoids the fight over reprisals which we are likely to be able to enforce only through understandings.

IF REPRISAL REGIME NOT ACCEPTABLE

Article 1 bis

Observance of the rules established by the annexed Protocols are essential to the accomplishment of the purpose (object) of this convention. (Violation of a rule (established by the annexed Protocols) is a material breach of the convention which entitles a Party to (terminate or) suspend operation of that rule for the duration of the conflict or a shorter period of time.)

5. Article 2 is quite unclear as to its meaning. Should it be retained, it should be modified to include a reference to the effect of this convention and its annexed protocols on the existing rights of parties under the international humanitarian law applicable in armed conflict. This modification is considered desireable to show the balance of rights and obligations which exist in that body of law.

6. Article 3, paragraph 1: we suggest a minimum of 1/3 of the States Parties should be in agreement for the calling of a revcon, to insure that they are not called too frequently or wastefully.

7. Article 3, paragraph 3: we suggest a minimum of 5 years should elapse before there can be a revcon following entry into force.

8. Article 3, paragraph 4: for the same reasons, we suggest 5 years should be the period of time before the convening of any additional revcon.

9. Article 4: recommend moving the words "for a period of 12 months" at the end of the first sentence, to the first line between the words "shall be open" and "for signature". We also recommend the inclusion of the word "Therefore" at the beginning of the second sentence.

Reasons: (1) clarity of meaning. (2) ensuring that no State may accede during the period of time that the treaty is open for signature.

10. Article 7, paragraph 1: Suggest deletion of the second sentence as being unnecessary, since general treaty law provides for delaying the effective date of a denuniciation until the conclusion of the armed conflict. Further, strongly recommend deletion in any event of the last clause (lines 6-9) beginning "and not, in any case" through the end of the sentence. These words, copied from the article 99, Protocol I, and modeled after common article 63/62/142/158, are particularly inappropriate to a weapons use convention where there is no need to continue those protections after the fighting has stopped.

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SELECTED OBSERVATIONS ON UN MEMBERS' PARTICIPATION

1. (S) Western Regional Group

(C)

a. Sweden: appears to be losing its credibility and support among both Nordic and other states on weapons issues.

b. Norway: indicates a growing separation from Sweden and an effort to align itself more closely with both NATO and the US.

c. France: displays increased cooperation and solid support for US military interests in informal, NATO and UN fora.

d. Federal Republic of Germany: exhibits a pragmatic approach on both procedural and substantive issues, voices support for US interests, but appears tempted to resort to expediency.

e. Italy and Spain: express the desire to play a more active role in Western Group efforts and generally support US views.

f. Finland: cautiously indicates an affinity for the US but pragmatically maintains a low profile vis-a-vis the USSR.

2. (S) Eastern Regional Group

a. USSR: appears generally disinterested in the issues except to preclude damage to its interests.

b. Romania: uses the forum to exhibit a degree of political independence but doesn't stray far from the Warsaw Pact "party line".

c. Poland and Hungary: play the role of Soviet surrogates for both expressing positions and collecting information.

d. Yugoslavia: uses the forum to demonstrate its nonaligned status but exhibits little real interest in the weapons issues.

3. (S) Latin American Regional Group

a. Mexico: uses the forum for political purposes seeking to be the leader of the group by tabling numerous idealistic proposals, but lacks solid group support.

b. Brazil: abdicated its opportunity for group leadership and is a conspicuously silent observer.

c. Argentina: provides the intellectual and diplomatic stature (Ambassador Rozas) to the group and probably its real leadership; seems content to work behind the Mexican smoke screen.

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10/21/2014

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TAB B

d. Venezuela: indicates a desire for a major role attaining respect through independent stance yet group support.

e. Cuba: acts as the Soviet surrogate with predictable results among respective states.

4. (C) African/Arab Regional Group

a. Nigeria: provided conference president and adopted subsequent low profile acting through Sudan and Zaire as surrogates.

b. Ghana: provides a measure of leadership for the African states but Arab support is unclear.

c. Egypt: offers an Arab alternative for group leadership and indicates some real interest in the issues, but seems to lack support.

d. Syria: seeks a prominent role in the group and conference but has limited support.

e. Sudan and Zaire: furnish indicators of African opinion generally and appear to act in behalf of Nigeria.

f. Iran: seeks to straddle the fence between East and West with little evidence of desiring a role in group leadership.

5. (C) Asian Regional Group

a. India: presumes to speak for the group but its degree of leadership and support are suspect.

b. Japan: provides bridge to Western Group, appears solidly behind US military positions and willing to promote Western Group interests among Asian states, but unwilling to challenge India's persumed leadership or break ranks from Asian Group position.

c. Indonesia: quietly acts in self-interest but will not challenge Indian leadership or break ranks with other Asian countries.

d. Mongolia: echoes the Soviet position in the Group and plenary but eschews a leadership role.

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BACKGROUND MEMORANDUM 21 AUG 1976

FOR

(7)

US DELEGATION TO THE UN CONFERENCE ON PROHIBITION
OR RESTRICTION OF USES OF CERTAIN CONVENTIONAL WEAPONS

SUBJECT: FUEL AIR EXPLOSIVES (FAE)

I. INTRODUCTION.

Fuel Air Explosives (FAE) are a relatively new weapon concept. The primary damage mechanism produced by FAE weapons is blast. As a result, they have been found to be very effective in a number of roles and particularly in mine clearing operations.

Fuel Air Explosives are typically composed of a thin skinned metal container, cylindrical in shape, which is normally filled with a liquid fuel and an explosive dispersion charge. The choice of fuel is a function of detonation limits, pressure, ease of initiation, ease of handling, cost and volume/weight limitations. Fuels which have commonly been used are ethylene oxide, propalyne oxide or a combination of the two. When the munition arrives at the target area, the dispersion charge detonates and disperses the fuel over the target. During the dispersion, the fuel breaks up and forms a fuel air mixture. After the mixture has been formed, it is detonated by a cloud detonator. This detonation produces the blast (a combination of overpressure and duration) which is the damage producing mechanism of FAE.

Blast effects many times that produced by FAE result from the detonation of more typically well known high explosive (HE) munitions. However, the intense pressure produced by HE is from a 'point source', wheras FAE, which produces a much lower level of pressure, distributes that pressure rather uniformly over an area at sufficient levels to damage many materiel targets.

II. SUMMARY OF LUGANO CONFERENCE (JAN-FEB, 1976)

FAE received substantial criticism. The Swedish delagation proposed prohibitions on the anti-personnel use of FAE. However, neither the criticisms nor the proposed prohibitions were supported by hard data. While the Swedes provided some computations asserting a 50% killed-to-wounded ratio would result from use of FAE against unprotected personnel (95% with use of multiple FAE bomblets), the computation were suspect and the US analyses indicated a killed-to-wounded ratio of 16-40% depending on the definition of wounding.

The net result was that, while FAE had been critized rather strongly, there was little supportive data provided. Therefore, progress on prohibitions and use restrictions was not forthcoming. US data was not presented.

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III. CURRENT MILITARY USES.

Targets considered vulnerable to FAE include land mines, bunkers, ships, trucks, aircraft, some armored vehicles and personnel in the open as well as in some structures or fortifications. Current developed or developmental weapons are as follows:

ARMY

FAESHED - Helicopter delivered parachute-retarded munition similar to the Navy CBU-55. FAESHED was developed for use against minefields but is not in production. One problem is that, when using the helicopter in a mine clearing role of this type, the helicopter is highly vulnerable to other weapons which may cover the minefield.

SLUFAE - This is a rocket launched FAE munition for the anti-minefield role. This system replaces FAESHED and has a similar warhead but slightly larger payload than the Navy BLU-73, a CBU-55 subunit. The development acceptance IPR is presently scheduled for early 1979.

SPRAYFAE - This is a nozzle employment concept for the anti- minefield role. This system or concept is still in the early delopmental stages.

NAVY/AIR FORCE

CBU-55/CBU-72 - This is an aircraft delivered system for minefield clearance or landing zone clearance roles. The system is similar to the FAESHED system and is in the Navy inventory. It was used in Southeast Asia.

FAE-II - This is a Navy/Air Force freefall bomb delivery system in the 500 lb. and 2000 lb. ranges. The system has improved detonation fuzing and delivery accuracy for use in close air support roles. Testing is to be completed in the 1981-1982 time frame.

MARINES

The Marines have funded an experimental (6.2) effort at Aberdeen Proving Ground. The concept is a fuel air follow through munition to defeat bunkers and possibly armored vehicles. Deflagrations but no detonations have been observed. Although the concept is apparently a workable concept, effort in now proceeding at a low level as better fuel dispersion and initiation modes must be developed.

IV. CONCEPTS FOR DEVELOPMENT OR USE.

A. The use of mortars or cannons as a delivery means could result in a low cost FAE capability with the inherent delivery accuracy of conventional artillery.

B. The use of large missiles such as LANCE with warheads carrying up to 1000 lb. of fuel against substantial materiel targets is a possibility. For example, selective use against industrial complexes could destroy buildings as well as the auxiliarly equipment, controls, service connections and power sources of heavy machinery.

C. Penetrating munitions such as the Marine effort and using shaped charges, penetrating caps or liquid jets could cause sufficient overpressures in buildings and structures to destroy the structure from the inside.

D. Small hand held devices using the FAE concept could provide the soldier with a grenade blast capability exceeding that which he now has. It would also remove the possibility of fragmentation danger to the soldier who would employ such a device outside a thin walled structure.

E. The most substantial new thinking with respect to the use of FAE is the employment concept for operations in a built up area. This is reflected in the consideration of munitions several orders of magnitude larger and smaller for selective use in the built up environment. It is also reflected in the consideration of penetration mechanics for FAE devices and the desire for increased delivery accuracies.

V. TECHNOLOGY UPDATES.

A. Increased accuracy can be achieved by virtue of free fall (bomb type) cannon and nozzle delivery means. Essentially, this means that the weapons using FAE munitions can be targeted much more efficiently and selectively.

B. There is substantial promise for the use of hydrocarbon based (with additives) fuels such as gasoline and diesel. There is also some promise in the potential for use of solid dust type fuels. The result could be an even greater reduction in cost per round for FAE type devices as compared to the normal HE type munition.

C. The comparitively high level of the damage mechanism for a correspondingly low weight of explosive makes the FAE device attractive for increased cloud sizes and longer impulses. However, the basic kill mechanism and the target vulnerabilities have not changed.

VI. WOUNDING EFFECTS.

FAE is a blast wounding mechanism with a primary blast effect of compression of the thoraco-abdominal system. The resultant damage (often and principally lung damage) may be characterized as severe wounding. Lesser forms of wounding such as ear drum rupture may also occur. The killed-to-wounded ratio for FAE has been estimated by US analysts at 16-40% depending on the wounding definition. This is comparable to killed-to-wounded ratios for other conventional weapons. For example, the probability of kill associated with the blast of an 80 lb. FAE warhead used in a similar role as the Mk-82 500 lb. bomb is about comparable to that of the bomb. Note that the bomb also has the fragmenting characteristic as an additional kill mechanism which is not considered.

VII. SUMMARY.

Blast has been a kill mechanism since the introduction of explosives to warfare. Blast has, in fact, been considered a primary kill mechanism in most contemporary bombs. Such bombs are also highly lethal within the blast envelope exclusive of the fragmenting effects. Basically, in comparing FAE with HE munitions, the FAE delivers either a comparable blast envelope for less weight or an increased envelope for comparable weight. FAE is, therefore, less costly and more efficient for certain targets. With increased delivery accuracy, it has a high potential for selective employment with only necessary destruction on the particular target without indiscriminate carry over to the targets environment. The principal use anticipated by the US is against materiel targets.

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THE JOINT CHIEFS OF STAFF
WASHINGTON, D.C. 20301

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File - Conventional Weapons

19 September 1978

(10)

THE JOINT STAFF

MEMORANDUM FOR RECORD

Subject: United Nations Preparatory Conference (PrepCon) for the 1979 UN Conference on the Prohibition or Restriction of Certain Conventional Weapons, at Geneva, Switzerland, 28 August - 15 September 1978

1. ~~(S)~~ On 23 and 24 August 1978 NATO representatives to the subject conference held consultations to achieve commonalty on procedural and organizational matters, substantive matters and other business related to the PrepCon. Consensus was achieved on all matters except for support for the Netherlands proposal on incendiary weapons. The Federal Republic of Germany (FRG) found the proposal unacceptable since it inhibited the use of flame weapons by a defending nation to interdict attacking forces in populated areas. US representatives were Mrs. Margot Mazeau, Arms Control and Disarmament Agency/State Department and the undersigned OJCS member.

2. (U) During the period 28 Aug - 15 Sep the UN PrepCon was held at Geneva, Switzerland, to establish a basis for the 1979 UN Conference. Seventy-three (73) nations participated and various nongovernmental international agencies and national liberation movements attended as observers. Ambassador Olu Adeniji was elected Conference President and Mr. Robert Ackerman, Netherlands Ministry of Defense was elected Rapporteur. TAB A contains a list of the US Delegation led by Ambassador George Aldrich.

3. (U) Procedural issues dominated the conference activity which culminated in the adoption of the Rules of Procedure less those articles dealing with decision-making. Support was divided between the US desired rule of consensus and an Afro-Arab Group proposal for a 2/3 majority voting procedure on substantive issues. The Western Group and the Eastern Group (Warsaw Pact) plus Cuba supported consensus. Asian and Latin American states voiced a desire for consensus but would accept the 2/3 majority rule if consensus could not be reached.

4. ~~(S)~~ Substantive issues were mentioned in various countries' opening statements and specific proposals for prohibitions/restrictions on fragments nondetectable by x-ray, mines and booby traps, incendiary and flame weapons, blast weapons (Fuel Air Explosives (FAE)) and small caliber projectiles were tabled. Most proposals paralleled those raised previously in the four annual Diplomatic Conferences. No working groups were formed to discuss the respective weapons categories.

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5. (S) Having demonstrated the desire to discuss substantive issues at the conference by the presence of a significant military experts group, the US Delegation pursued that objective with informal bilateral and multilateral consultations. Bilateral talks were held with the USSR and Israel on the current proposals concerning mines and booby traps, and with Norway on incendiary weapons. Multilateral talks were held initially for two days with Informal Group members (UK, FRG, France, Canada, Italy and the US) plus the Netherlands. These meetings, called and chaired by the undersigned OJCS/DOD Representative, were expanded to include Norway, Denmark, Australia, New Zealand, Japan, Greece and Spain in talks held three subsequent days. These talks were designed to reach the highest level of consensus on the British mines and booby traps proposal and to find a solution to the FRG opposition to Netherlands incendiary proposal. As a result of these talks, Norway and Denmark tabled a new incendiary proposal in the plenary conference as an alternative approach to negotiating the issue. Multilateral talks, also hosted and chaired by the US, on small caliber projectiles were held with countries representing a cross section of the contrasting views on the issue (Sweden, Mexico, Indonesia, Egypt, Japan, FRG, UK, Venezuela, Austria, and Switzerland). These informal consultations between military representatives were useful in exchanging national views and establishing mutual understanding prior to the formal organization of working groups at the next PrepCon.

6. (S) Predictably, in both plenary and informal meetings, Sweden and Mexico were the leading advocates of the more restrictive proposals on napalm, FAE, and small caliber projectiles, and the Warsaw Pact bloc was generally stoic. While not impeding the efforts of the conference, Soviet surrogates suggested that the weapons issues be transferred to the forthcoming Conference on Disarmament. Of further note, was the public admission by Sweden that it had been in error in earlier conclusions on small caliber projectiles.

7. (U) The second PrepCon, to discuss substantive weapons issues, was scheduled for 19 Mar - 12 Apr 1979 and the recommended dates for the UN Conference were 10-28 Sep 1979. Both conferences to be held at Geneva.

8. (S) As a result of the first PrepCon, it appears that there is broad agreement on some form of weapons restrictions on fragments nondetectable by x-ray, mines and booby traps and incendiary/flame weapons. There is little prospect for agreement, nor does the US support, restrictions on other weapons.

9. (S) Ambassador Aldrich will hold a meeting of the US Delegation 22 Sep 78 to begin preparations for the second PrepCon.

10. (S) A review of the US position on incendiary weapons is required prior to the 8-9 Nov 1979 meeting on the Law of War Protocols at Brussels and will be initiated.

11. (S) A review of the JCS position on the various conventional weapons under discussion is required and will be initiated for completion by 1 Feb 79.

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12. (U) Observations on selected UN members' participation at the subject conference are attached at TAB B.

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US DELEGATION

Ambassador George Aldrich, Department of State, Head of Delegation

Mr. Michael J. Matheson, Office of the Legal Advisor, Department of State (Acting Head of Delegation 10-15 Sep 78)

Mrs. Margot Mazeau, Assistant General Counsel, Arms Control and Disarmament Agency (Acting Head of Delegation 31 Aug - 9 Sep 78)

Mr. Charles C. Flowerree, Multilateral Affairs Bureau, Arms Control and Disarmament Agency

Colonel Joseph N. Smith, USMC, Joint Chiefs of Staff/Department of Defense Representative

Mr. William P. Staples, Bureau of Weapons Evaluation and Control, Arms Control and Disarmament Agency

Colonel Robert Norris, Office of the Judge Advocate General, Department of the Air Force

Colonel Craig H. Llewellyn, Army Medical Research and Development Command, Department of the Army

Lt. Col. Richard W. Roberson, Office of the Deputy Chief of Staff for Operations and Plans, Department of the Army

Lt. Col. Charles E. Gardner, Office of the Deputy Chief of Staff for Operations and Plans, Department of the Army

Mr. Raymond Pollard, Material Systems Analysis Activity, Department of the Army

Mr. Charles E. Digney, Project Manager, Selected Ammunition, Department of the Army

Captain Edward R. Cummings, Office of the Judge Advocate General, Department of the Army

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INTRODUCTION.

(U) Purpose. As presented in the guidance provided to the U.S. delegation to the United Nations Conference on Certain Conventional Weapons Which May be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects (CCW), the U.S. position is that the U.S. can accept restriction on the use of air-delivered flame weapons (napalm) against military objectives located within a concentration of civilians (as those terms are defined in the papers of the Incendiaries Committee of the CCW) but reserves the right to use other types of air-delivered incendiary weapons in these same circumstances. The purpose of this study conducted by the DoD Working Group on Incendiary Weapons, is to review the military rationale for the current U.S. position on the use of air-delivered incendiary weapons (other than napalm) against military objectives located within concentrations of civilians.

(U) Origin and Organization. In a letter to the DUSD (Policy Planning) dated 19 December 1979 (Tab A), Ambassador George Aldrich, the head of the U.S. delegation to the CCW, expressed the judgment that it would be possible to obtain satisfactory (i.e., consistent with current delegation instructions) results during the 1980 session of the CCW on all but one of the basic weapons categories under consideration. The exception is the incendiary issue. Ambassador Aldrich is concerned that the U.S. is becoming increasingly isolated with its position of insisting on the right to use air-delivered incendiary weapons, other than napalm, against military objectives located within concentrations of civilians. Consequently, he requested DoD to review the current U.S. position on incendiaries against current military requirements and planning

"a. Munitions which may have incidental incendiary effects, such as illuminants, tracers, smoke or signalling systems, or

b. Munitions which rely for their principal effect upon fragmentation, penetration or blast and which have secondarily an incendiary effect."

(U) Napalm is an incendiary weapon, but the United States has already stated that it is willing to forego the use of air-delivered flame weapons (i.e., napalm) against targets for which their use would otherwise be appropriate in the event those targets are located within a concentration of civilians. Accordingly, the scope of the DoD Working Group's inquiry is that of air-delivered incendiary weapons other than napalm.

(U) The following types of munitions have heretofore been assumed excluded from consideration: white phosphorous, armor-piercing incendiaries, and fuel air explosives. At the last session of the CCW, combined effects weapons such as the Navy's APAM CBU (an anti-personnel, anti-materiel CBU containing a fire -starter ring which ignites after penetration) and other high explosive-incendiary weapons also were assumed to be excluded under the UN definition. This was because, it was argued, CEMs were not "primarily designed" to produce fire and their "principal effects" were assumed to be ~~penetration~~ blast and fragmentation; incendiary effects were secondary. Recent discussions within the DoD working Group, however have raised the possibility that the principle and secondary effects of combined effects munitions (CEMs) may not be as easily distinguished as previously assumed by

the US delegation to the CCW. Thus, the US may judge that some CEM's technically fell under the UN definition of incendiary weapons while other CEMs might be interpreted by other states as doing so because of ambiguities in weapon design and effects.

(U) Concentration of civilians means "any concentration of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or colums of refugees or evacuees, or groups of nomads."

(U) At the suggestion of the United States delegation, the following understanding was placed in the report of the Incendiaries Working Group during the First Session of the Conference (10-28 Sep 79):

> The definition of "concentration of civilians" is intended to convey a word-picture to the military commander regarding the protected character of the civilian population, rather than to present a precise mathematical formulation of what is a "concentration" of civilians. The commander's attention is directed by the definition to the concern he must have for the presence or absence of the civilian population, which is fluid in wartime, rather than to the character or size of the city,

town or village. It is understood that "civilians" means those persons who are not taking a direct part in the hostilities.

(U) Applying this definition to Washington for the sake of illustration, if there was a military target located at the intersection of 12th and G Streets, NW, in the heart of the business district, and the attacker had agreed to forego the use of air-delivered incendiaries against targets located within a concentration of civilians, that target could not be attacked utilizing air-delivered incendiaries during normal business hours. It could be attacked with other weapons (e.g., artillery or other air-delivered munitions). It could be attacked with air-delivered incendiaries during those hours when a concentration of civilians would not be present (e.g., 2100 to 0600).

Customary International Law.

(U) Irrespective of additional restrictions to which nations might subscribe, a commander planning an attack is bound by the subjective requirements of international law to take every step which is feasible in the choice of means and methods of attack with a view to avoiding, and in any event to minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects. It must be understood, however, that this does not require the avoidance of any civilian casualties or damage to civilian objects which are an accepted consequence of combat operations. Nor does it affect the responsibility of the defender (the commander on the ground) to avoid to the maximum extent feasible locating military objectives within or near densely

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populated areas, not to utilize the civilian population or individual civilians to render certain points or areas immune from attack, or to take other necessary precautions to protect the civilian population, individual civilians and civilian objects under his control against the dangers resulting from military operations. (In utilizing the term "feasible," the United States and its NATO allies on several occasions have stated their understanding that "feasible" means that which is practicable or practically possible, taking into account all circumstances at the time, including those relevant to the success of military operations. A slightly different but less comprehensive definition of "feasible" has been utilized in the draft protocol prepared by the Incendiaries Working Group in Geneva.) In applying these standards, the U.S. has declared that commanders and others responsible for planning, deciding upon, or executing attacks necessarily have to reach decisions on the basis of their assessment of the information from all sources which is available to them at the relevant time.

(U) This study addresses the military considerations attendant to the proposed prohibition. It reviews the military doctrine requirements and the utility of air-delivered pure incendiaries (other than napalm); the utility of alternative munitions within the parameters proscribed above; and the trends in the US inventory of pure incendiary weapons. This study also will address the question of whether munitions which combine blast and fragmentation effects with incendiary effects fall, technically or through interpretation, under the ~~definition of incendiary weapons currently being used at the UN Conventional~~ Weapons Conference.

(U) We have not attempted to compare the effectiveness of pure incendiary weapons or their alternatives in other than a conventional war context. In a nuclear conflict, nuclear weapons would be an obvious alternative in the strategic role and a possible candidate for theater use in the interdiction role.

MILITARY CONSIDERATIONS

Discussion: Pure Incendiary Weapons

Current Doctrine

(U) Although current military doctrine does not specifically adress the employment of air-delivered incendiary weapons, it does identify incendiary bomb targets and effects. The Army's Field Manual 20-33, Combat Flame Operations, 16 July 1970, lists the following as suitable for incendiary bomb attacks in support of ground operations:

(1) Troops and weapons located in a combustible area
(2) Shelters, vehicles or supplies of a combustible nature or located in a combustible area
(3) Airfields, aircraft and missile launching sites
(4) Facilities that support enemy operations. These targets may be tactical or strategic in nature and include supply installations, factories, repair facilities, docks and shipping facilities, powerplants, mines, railroad facilities, urban areas and communications centers.

In addition, the Marine Corps has stated that large concentrations of POL (petroleum, oil and lubricants), vehicles, or buildings are suitable targets when incendiaries are used in conjunction with general purpose (GP) bombs.

(C) The Weapon Characteristics Volume of the The Joint Munitions Effectiveness Manual (JMEM) a tri-service planning document also provides effectiveness data to assist commanders in making weapons selections against targets. With respect to incendiaries, the JMEM defines incendiary bombs as "Weapons whose primary function is to start destructive fires in combustible targets such as ware-house complexes, supply dumps, clustered wooden buildings, and certain types of urban areas ...." It goes on to note that historically, incendiaries have been used mainly in deep interdiction or strategic applications against flammable area targets. And it suggests that clusters of incendiaries may also be used effectvely against certain tactical and interdiction targets, provided that adequate saturation is achieved.

(C) An Army decision during hostilities to introduce Army aviation assets (helicopters) to deliver incendiary weapons in all probability would be made in terms of providing close air support for US ground forces who were in direct contact with or close proximity to enemy troops. In these circumstances the combat area likely would have been a target for air strikes already and it would be assumed that any civilian population had been evacuated. Air-delivered incendiaries would be considered for use, if they were the most effective weapon available for the mission. It should be noted that there are other missions such as near area defense, airborne and air assault operation where large numbers of civilian noncombatants may be in the vicinity of the battle area. FM 20-33 recognizes that the targets listed in (2), (3), and (4) above generally are targets which would be attacked by tactical or strategic air forces rather than by Army aviation assets (helicopter).

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Past Practice

(U) Air-delivered incendiaries were used with substantial success against industrial targets in North Korea during the 1950-1953 conflict. In Vietnam, incendiaries were employed by the Air Force in interdiction missions over North and South Vietnam and Laos, but were not utilized against targets in the built-up areas of Hanoi and Haiphong inasmuch as these areas were designated as protected areas and off-limits to all attacks.

~~(S)~~ Upon conclusion of Operation ROLLING THUNDER (1965-68), HQ Pacific Air (PACAF) undertook a comprehensive examination of aerial munitions ~~effectiveness and~~ requirements. The PACAF study (In-Country and Out-Country Strike Operations in Southeast Asia, 1 January 1965-31 December 1969 [s], Vol. II, Hardware-Munitions [23 October 1979]) identified two incendiary munitions used to date, each of WWII manufacture. The study concluded (p. 28) that "...incendiary weapons should continue to be refined, as they would always find a place in the inventory." A 1971 Navy study also recognized the need for an advanced incendiary weapon (AIW), but none was developed for lack of funding support.

~~(S)~~ Concurrently the Air Force undertook to develop pods for modern high-speed aircraft of its stock of WWII incendiaries. Technical difficulties with the pods emerged including high drag (resulting in loss of speed and high fuel consumption) which could not be overcome in the time allotted. Programs to produce modern incendiary munitions were basically unsuccessful. Industrial expertise was limited and contractor response to a request for bids was minimal, the latter accounted for by the very tenuous nature of anticipated production (the bidding

process took place in 1970-1971, when U.S. Forces began their withdrawal from South Vietnam and bombing operations over North Vietnam were at a standstill). The successful bidder was beset with labor and related problems, and no product evolved from the several programs other than refinements of an earlier CBU intended for killing trucks. As a result, no new incendiaries were available at the time of resumption of bombing in North Vietnam in 1972 in Operations FREEDOM TRAIN, LINEBACKER I, and LINEBACKER II.

(S) FREEDOM TRAIN took place from 6 April - 7 May 1972, and was limited to military targets up to 20° N latitude, i.e., outside of Route Package Areas 5, 6A, and 6B (which included Hanoi and Haiphong). B-52 aircraft carried out attacks against approximately 30% of the military targets in the vicinity of Hanoi and Haiphong brought under attack during LINEBACKER II (18-29 December 1972). Those targets located in proximity to populated areas were limited to attack by F-111s using precision-guided munitions (PGMs). B-52s dropped high explosives only during this campaign, owing to a lack of immediate availability of incendiaries. Post-operation analysis revealed that the standard high explosive bomb dropped by the B-52s was not effective against storage areas (a target previously identified as one against which incendiaries would be effective), and that bomb-damage assessments were substantially below pre-strike estimates. A post-strike study revalidated the conclusion of the 1970 PACAF study calling for incendiary weapons capable of delivery by modern high-speed aircraft.

(S) For purposes of illustration the table at Tab B shows the number of incendiary devices expended in Southeast Asia by the USAF from FY 1965 to FY

1970. The US Air Force employed incendiary clusters in killing trucks in Laos. The Air Force also employed the 100-pound AN-M47 smoke bomb filled with plasticized white phosphorous (PWP) in Southeast Asia. It was used for its smoke producing properties as a target marker, and as a screening munition in search and rescue operations. It was also used as an incendiary bomb against combustible close air support targets and trucks. There is no record that incendiary bombs were used against industrial targets and/or other military objectives located in areas where substantial numbers of civilian noncombatants were present, i.e., within a concentration of civilians, during the US aerial interdiction compaign against the Democratic Republic of Vietnam.

(U) The rules of engagement (ROE) for the Republic of Vietnam (South Vietnam) provided, inter alia, that "the use of incendiary type munitions in inhabited or urban areas will be avoided unless friendly survival is at stake or is necessary for the accomplishment of the commander's mission." (MACV Directive 525-13, May 1971, para. 6d(1).)

(U) The ROE for the Democratic Republic of Vietnam (North Vietnam) did not address the use of air-delivered incendiary weapons within areas containing large groups of civilian non-combatants.

Alternative Munitions

(C) The Services have identified some targets located within or near populated areas against which air-delivered pure incendiary weapons, other than napalm, might be the weapon of choice. High explosive (HE) bombs are a possible

alternative in the role of stategic (industrial type targets) and interdiction (supply type targets) bombing. Comparisons between HE weapons and pure incendiary weapons is very dependent upon the combustibility of the target, however. Munitions which combine blast and fragmentation effects with a secondary incendiary effect appear to be the best alternative for use against incendiary bomb targets.

(U) It is difficult to compare qualitatively the effectiveness of pure incendiary versus other munitions. We are largely limited to drawing on World War II experience, since no new pure incendiary weapons have been developed since that time and the only pure incendiary bombs available for use in the Vietnam conflict were WWII design. The report of the Division 2, National Defense Research Committee of the Office of Scientific Research and Development - Effectiveness of U.S. Incendiary and High Explosive Bombs - NDRC# A-386 - March 1946 6/ collects in one volume results of an investigation of the relative effectiveness of a number of types of HE and pure incendiary bombs against industrial targets in Germany and Japan. The report is based on detailed statistical analyses of the damage to aircraft industries inflicted by 45 bombing attacks by the U.S. Army Air Forces. The primary data consisted of pre-raid and post-raid photocover, damage assessments based on photo interpretation, bomb loads, bomb plots, etc.

(U) Definite conclusions drawn from these data for the types of industrial targets studied, showed the superiority of incendiaries over high-explosive bombs. The following is an abstract from the chapter comparing the effectiveness of pure incendiary and high explosive bombs.

Abstract

The analysis of U.S. Army Air Force Attacks against European and Japanese targets (principally of the aircraft industries) for which data were collected by the AN-23 Group is summarized.

The mean areas of effectiveness for structural damage and for fire damage, and the total mean areas of effectiveness (MAE) are computed on an equal-weight basis for the M47 Incendiary bomb and 500-lb GP and 400-lb Light Case bombs.

The M47 was found to be considerably better than the 500-lb GP HE bomb, its MAE being twelve times as large against combustible buildings, and one and a half times as large against noncombustible or fire-resistant buildings.

(U) All Services agree that most conventional replacement weapons for air delivered incendiaries can be delivered on target with equal precision and would not be expected to cause more collateral civilian casualties or damage to civilian objects than the incendiaries. [redacted] in the case of HE weapons there may be less collateral damage assuming limited fire damage control by the enemy. Unlike incendiary weapons, radii for HE weapons are fairly well defined. When HE is used against combustible targets, however, more weapons with more sorties could be required for destruction of the target than would be the case had incendiary weapons been used. [redacted] the use of more weapons to destroy a target

increases the probability of an error in delivery accuracy, thus increasing the risk of direct collateral damage. Collateral damage to civilian objects from incendiaries will be a function of proximity to the target area and the enemy damage control capability. Unless the enemy has a damage control capability however, incendiary weapons would probably cause the more extensive damage.

(S) The use of alternative munitions (HE) could require a greater number of sorties for comparable results and thus could be more costly than incendiaries. High explosive bombs, as noted earlier would not produce the same degree of damage as incendiary weapons which provide results by extensive burning through the spreading of fire. In the tactical interdiction role the success of alternative munitions is dependent on the target type. Hardened targets would be more susceptible to the effects of HE bombs than to those of pure incendiary weapons. The most effective approach for destroying the majority of strategic targets would be a combined effects weapon with both HE and incendiary characteristics.

Status of US Inventory of Air Deliverable Incendiary Weapons.

(U) Neither the Navy nor the Army currently has an inventory of serviceable air-deliverable pure incendiaries. The USAF world-wide inventory of the M36 incendiary bomb cluster as of August 1973 is shown in the table at Tab C, taken from USAF Technical Report AFATL-TR-73-224, "The Status of USAF Incendiary Weapons Capability," dated November 1973 (data reconfirmed in 1979).

(U) There is currently no requirement for the CONUS inventory of M36E2 incendiary clusters. Although not designated as War Ready Material (WRM), these munitions have been marked for retention. Additionally, air deliverable incendiary bombs are not listed by any service among those war-stock materials which are identified to be manufactured in time of war.

Status of Research and Development

~~(S)~~ There is no ongoing R&D directed toward the development of pure flame/incendiary weapons within the Air Force or the Navy. And, although the Army has established a new flame/incendiary technology at the Large Caliber Weapon System (LCWS) Laboratory in Dover, New Jersey, to date, no funds have been allocated to support this activity. Tab D illustrates the pattern of funding for R&D in these areas since 1975. Additionally, the US has no ready production facility for pure incendiaries.

~~(S)~~ The low stockage levels and the deterioration of production capability can be explained to a degree by the allocation of resources to higher priority projects. It is difficult to measure the impact of fiscal restrainsts on the weapons procurement process, however. Procurement decision generally are driven by the overall cost effectivenss of the weapon rather than fiscal restraints per se. Individual weapon cost is a factor in the overall assessment, but many factors would be addressed in the selection of procurement quantities: ~~targets, delivery conditions, missions, cost, lethality, attrition,~~ etc. The fact that incendiary bombs have diminished in importance due to structural improvements in what were once good incendiary targets (warehouses,

factories, depots, etc.) and due to improvements in other weapons, e.g., combained effects munitions (JCSM-43-75), is probably the primary explanation for their current status.

~~(S)~~ The foregoing data lends support to a conclusion that a prohibition on the use of air-delivered pure incendiary weapons against military objectives located within concentrations of civilians would be militarily acceptable, i.e., it would not seriously impair our ability to conduct successful military operations. It is necessary, however, that the restriction on use contemplated in the CCW for pure incendiaries not be considered applicable for certain air-delivered weapons with an incendiary capability. Particular questions of military concern are raised by so-called combined effects munitions (CEMs). CEMs are designed to accomplish optimum destruction of military targets through a combination of penetration, blast, fragmentation and/or incendiary effects. The Army, Navy and Air Force all have sizeable inventories of air-deliverable CEMs on hand and ambitious CEM R&D programs in progress.

~~DISCUSSION:~~ Combined Effects Munitions

(U) CEMs were developed primarily for tactical employment against light materiel targets such as aircraft, vehicles, and fuel storage sites where fragments can penetrate fuel cells creating the potential for greater effectiveness through a residual fire. The utility of CEMs has been demonstrated in the past and their potential and perceived value is evidenced by the size of existing CEM inventories and amount of R&D activity which is being conducted in this area today. The value of CEMs, as opposed to pure incendiaries, is not in question.

(U) In the course of the DoD review of pure incendiary weapons, we reviewed information which raised the possibility that CEMs technically may indeed fall or legally be interpreted as falling within the UN CCW definition of incendiary weapons. For example, the Joint Technical Coordinating Group for Munitions Development defined incendiary weapons as "those munitions which have either as their prime or ancillary objective the defeat of targets by flame or incendiary effects." (emphasis added) There is a question as to whether CEMs currently in inventory could be clearly categorized as either high explosive or incendiary weapons. Moreover, the Services and Joint Staff suggested that the next generation of CEMs might include a higher percentage of incendiary effects which would render even more imprecise the point at which a weapon with some percentage of incendiary effects, used for the purpose of setting fire to a target, moved from both technical and legal categories of a high explosive weapon to those of an incendiary weapon.

(U) Consequently the Services reviewed their current and prospective inventories of CEMs against two parts of the UN definition of incendiaries:

(1) Incendiary weapons are defined as weapons which are "primarily designed to set fire to objects or to cause burn injury to persons through the action of flame, heat, or a combination thereof, produced by a chemical reaction of a substance delivered on the target." (emphasis added)

(2) Incendiary weapons do not include "munitions which rely for their principal effect upon fragmentation, penetration or blast and which have secondarily an incendiary effect." (emphasis added)

~~(C)~~ Technical ambiguities may arise when one tries to isolate the primary purpose of the weapon's design and to distinguish between its principal and secondary effects. None of the CEMs in the Navy inventory (Tab E) are classified as incendiary weapons within the terms of the UN definition since these weapons are not designed to set fire to objects or to cause injury to persons through the action of flame, heat, or a combination thereof, produced by a chemical reaction of a substance delivered on the target. Rather, CEMs in the Navy inventory set fire or cause burn injury by the physical reaction of a spark igniting flammable material such as gasoline vapor released by the fragmentation. ~~(their emphasis)~~

~~(C)~~ The incendiary portion of some of the Navy's CEMs, such as zirconium liners or Mischmetal, when fragmented and thrown against the target, more easily spark then ordinary steel fragments (which themselves spark when striking

certain objects.) These fragments, however, do not themselves contain easily combustible material which continues to flame or burn for a relatively extended period of time after delivery on the target. ~~The Air Force believes that~~ this is in contrast to the "pure incendiary" bomb which contains and delivers a substance which continues to burn chemically when delivered on the target whether or not the target contains flammable material. The CEM will only produce flame or burning if the target contains material which is or can be made explosive or be ignited by sparks caused by the fragments from the CEM. Thus, there is a distinction made between fire-starting and fire-sustaining.

~~(S)~~ The Air Force does not currently describe any of its munitions as combined effects munitions. It does, however, maintain inventories of several types of munitions to which incendiary material has been added to enhance the effect of target ignition following penetration, blast, etc. Principal examples of these Air Force munitions are at Tab F.

(S) It can be argued ~~The Air Force believes~~ that the US rationale for excluding CEMS from the UN definition of incendiaries is based on the possibly erroneous assumption that a weapon is primarily designed to have only one effect. ~~They believe that~~ it can be argued that ordinary HE bombs are primarily designed to have two effects -- blast and fragmentation. Therefore, ~~in the Air Force view,~~ CEMs can be said to be primarily designed to have three effects -- blast, fragmentation, and incendiary. A CEM might be said to be primarily designed to cause fires, even though it is also primarily designed to cause blast and fragmentation.

(S) Carrying this one step further, some argue that the incendiary effect of CEMs could be one of their three "principal" effects, and not a "secondary" effect, as would be the incendiary effect of armor-piercing ammunition, for example. [redacted] by taking the UN definition as a whole, it could be reasoned that a weapon is "primarily designed" to have all those effects except those which are "incidental" to its use. Since CEMs are deliberately designed to have some incendiary effects, these effects could not be said to be either "incidental" or "secondary."

(S) [redacted] the CEMs in the Army inventory (Tab G) are generally high explosive munitions to which an incendiary capability has been added or designed in. Therefore, since this incendiary capability is designed into the CEM, the Army concludes that they could be considered incendiary weapons for the purposes of the incendiaries protocol.

(S) [redacted] a percentage breakdown between high explosive effect vis a vis incendiary effect cannot be quantified with any mathematical certainty and will vary with individual weapons. The effectiveness of the incendiary element of the CEM will depend on the combustibility of the target.

(U) CEMs have traditionally been defined as primarily a blast/fragmentation weapon with a supplementary fire-start capability for flammable targets. CEMs

in the current US inventories are unfueled, i.e., they can start a fire on or in the area of a combustible target, but are unable to sustain it in and of themselves. Unlike a thermite bomb or the jelled fuel of napalm, current CEMs only provide the spark to ignite a flammable target. It can be argued, therefore, that a CEM does not function "through the action of flame, heat or a combination thereof, produced by a chemical reaction of a substance delivered on the target." It should also be arguable that the sparking produced by the incendiary material is a secondary effect produced by the detonation and consevent fragmentation of some CEMs. In the case of Armor-piercing incendiary (API) ammunition, the sparking produced by the incendiary material is a secondary effect produced by the penetration of the round through a hard target.

~~(S)~~ It is useful to look at several ~~of~~ types of rounds ~~identified by the Services~~ in order to reinforce this assessment. Armor-piercing incendiary API munitions consist of a solid metal penetrator in the projectile with a small pocket of incendiary mix which serves to ignite a flammable target after the projectile has penetrated. The smaller conventional (20-30mm) high-explosive incendiary (HEI) rounds contain a mechanical fuze in the nose of the projectile. On impact this fuze ignites a high explosive mix in a pocket behind the fuze which causes the detonation of the projectile. The detonation disperses incendiary material located in the projectile which produces sparks together with the fragments dispersed from the detonated projectile. The larger HEI rounds (40mm) can use an incendiary metal sleeve, e.g., Mischmetal, to facilitate sparking and subsequent ignition of combustible targets. This sleeve can be inserted as an inner layer of the projectile's body.

(C) Cluster bomb units (CBUs) are another munition which both the Navy and Air Force carry in inventory. The Navy's CBU-59B, APAM operates in either a penetrating anti-armor mode or in a fragmenting mode. In the former, on impact, a shaped charge generates a high velocity flame to cut through a hard target. If the APAM hits a soft target, it will explode and fragment. By adding a Mischmetal or other incendiary metal sleeve to the unit, sparking is enhanced in either case. Other more standard CBU's (the Air Force's CBU-52-58-71) may incorporate incendiary particles, such as zirconium or titanium, into the CBU casing or the HE mix, or add them as a metallic lining to the CBU.

(S) The Army [redacted] is considering the purchase of a 40mm multi-purpose round developed by the Norwegians. This round consists of an incendiary mix in a soft nose which acts as a fuze to ignite a pocket of HE. The ignition of the HE causes the bomb to detonate and fragment. In this case, the value of the incendiary element of the munition is as an ignition source or fuze in addition to the incendiary effect.

(S) At present there is a fairly active program of R&D for new and improved CEMs within DoD. The Army is currently engaged in a study at the Large Caliber Laboratory titled "Army Utilization of Pyrophorics" which is considering the problems, prospects, and future requirements of pyrophoric weapons. The family of clustertype weapons known as improved conventional munitions (155mm and 8 in) was designed for and is adaptable to CEM. Development of the M42 bomblet for these rounds has been slowed by patent/proprietary complications, but the Army retains an interest in this type of munition.

~~(S)~~ Development of improved conventional munitions is currently of R&D interest as is a newly developed silicon-magnesium (SIMAG) compound. The SIMAG compound is a low cost, silicon based substance which produces incendiary effects without apparent degradation of the high explosive. Should the compound meet expectations, [redacted] it has potential for widespread use. TEA, used in the M74, is under consideration for other uses and in general the Army is exploring technological advances in an attempt to capitalize on the state-of-the-art. Additionally, the 30mm High Explosive Dual Purpose ammunition for the attack helicopter is a candidate for pyrophoric materiels and interest in developing a CEM round for the XM 250 CHAPPAREL and the M51 LANCE warhead remains.

~~(S)~~ The Navy's R&D programs are directed toward specific systems applications and technology fields in materials, explosives, and warhead configurations. The Navy no longer supports R&D projects in incendiary materials as a specific technology area. Incendiary effects are in conjunction with other warhead effects. The following are current Navy warhead R&D projects which fall in the category of CEMs:

Gun Ammunition

RDT&E 6.4 (engineering development)

25/30mm DU (depleted uranium), API

RDT&E 6.2 (exploratory development)

Multipurpose Projectile A/S Raufuss Ammunisjonsfabrikker,

20/25/30 mm rounds

Missile warheads (all cluster munitions, part of the Tomahawk program)

RDT&E 6.3 (advanced development)

MRASM: a medium range air to surface joint Navy/Air Force project for use against sea and land targets. A derivative warhead is a clustered CEM bomblet.

RDT&E 6.2

Advanced cluster missile warhead for attacking ships. A CEM bomblet.

~~(S)~~ As currently designed, Navy CEMs have a secondary incendiary effect following the primary warhead functioning by fragmentation, blast or penetration. The Navy does not foresee substantial change in the relatively low percentage of "incendiary" material contained in future Navy CEMs because the desired primary damage effect is not incendiary. The intent is to achieve greater lethality through secondary effects with less resources, lower weight and volume thresholds. ~~The Navy notes that~~ prior experiments with adding "pure incendiary" material to combined effects bombs to enhance their secondary incendiary effects were unsuccessful. This was because the blast extinguished the burning incendiary material delivered with the bombs. (The Army's SIAAG project may, if it proves successful, offer a solution to this problem.)

~~(C)~~ The Air Force has, at present, only one CEM in R&D. Although it has not yet entered R&D, an operational requirement has been stated for an improved diesel fuel defeat munition. The most likely candidate for such a munition would be some kind of CEM.

(U) The UN CCW definition of incendiary weapons has its origins in the 1974-77 Diplomatic Conference on Humanitarian Law. At that time, the US recognized the need to protect CEMs from any prohibition that might be imposed on incendiary weapons. The blast and fragmentation criteria became critical to the distinction between pure incendiary weapons and secondary incendiary effects. There are several indications in the records on incendiary weapons discussions that CEMs of one type or another were not to be restricted. For example, in 1975, following the second session of the ICRC Conference of Government Experts on the Use of Certain Conventional Weapons, a group of nonaligned states, led by Sweden, offered the following "modified" proposal on an incendiary weapons prohibition:

1. Incendiary weapons shall be prohibited for use.

2. This prohibition shall apply to:
   the use of any munition which is primarily designed to set fire to objects or to cause burn injury to persons through the action of flame and/or heat produced by a chemical reaction of a substance delivered on the target. Such munitions include flame-throwers, incendiary shells, rockets, grenades, mines and bombs.

3. This prohibition shall not apply to:

(a) munitions which may have secondary or incidental effects, such as illuminants, tracers, smoke, or signalling systems.

(b) munitions which combine incendiary effects with penetration or fragmentation effects and which are specifically designed for use against aircraft, armoured vehicles and similar targets. (emphasis added)

Although the Swedes were trying to protect their anti-aircraft and anti-tank munitions from any restrictions, the formulation they proposed would, without a caveat on specific use, apply to any CEMs.

CONCLUSION

Pure Incendiary Weapons

~~(S)~~ The US has very small inventories of pure incendiary weapons and no plans to replace them. There currently is no program for production of pure incendiaries and no plans to reestablish production. Munitions developments, particularly in the areas of combined effects munitions, have reduced the military utility of air-delivered pure incendiary weapons. Accordingly, a prohibition as contemplated by Ambassador Aldrich (Tab A) would be militarily acceptable so long as it clearly restricted only the use of air delivered pure incendiary weapons against military objectives located within concentrations of civilians.

Combined Effects munitions

~~(S)~~ At the same time, there is a continuing military requirement for air-delivered weapons with some kind of incendiary capability. Such a weapon would be the weapon of choice against certain types of important combustible interdiction and strategic targets. Targets against which air-delivered incendiary weapons would be appropriate include major military and industrial targets within or near populated areas. Air-delivered incendiary-type weapons would be an important element in attacking Soviet second echelon forces positioned approximately 50 km from the forward battle area. In Western Europe, the second echelon battle would be fought within and near heavily populated areas. Furthermore, all available indications suggest that the air-delivered weapons which combine incendiary effects with high explosive and fragmentation effects will be an increasingly important element of furture US military capbilities. Prohibitions or restrictions on use of this class of weapons, beyond those currently imposed by international law, would be unacceptable from a military standpoint.

~~(S)~~ Thus, in the negotiation of any protocol concerning pure incendiary weapons, it would be nessary to reinforce the understanding that CEMs are not included in the definition of incendiaries, and to develop a solid record to that effect. The definition with which the Conference is currently working may need to be modified to accomplish this. The DoD will undertake, as tasked, to identify for State those combined effects weapons whose use must be protected, i.e., not further restricted.

APPENDIX I

Soviet Military Doctrine and Policy for Incendiary Weapons

(S-NOFORN) Until recently, the Soviets apparently did not make a clear distinction between the terms incendiary and flame. Any munition which had the primary purpose of causing fire was classed as flame. However, they also used the term incendiary in referring to munitions that cause fire by primary design. The Soviets specifically listed the following items under the term incendiary: napalm, thermite, white phosphorous (WP), mixtures of WP and napalm, and mixtures of thermite and napalm. The Soviets do not now classify WP as an incendiary if it is to be used in any primary role other than creating fires.

(U) The Soviet Union currently has a variety of air droppable incendiary munitions in their inventory. These munitions include: thermite bombs, napalm bombs, phosphorous bombs, thermite and napalm bombs, and thermite and high explosive bombs. In addition to these bombs, the Soviets have aerial incendiary devices (ZAP) and incendiary spherical containers. See Tab H.

(S) Soviet literature indicates that they will use incendiary or flame air delivered munitions for limited targets such as to destroy military-industrial objectives, military supply depots, railroad yards and moving stock, petroleum storage sites, military equipment caught on the march, staging areas, naval bases, ships, and aircraft caught on the ground. In addition, flame weapons are to be used in repulsing counterattacks, against defense strong points, and in any other circumstance where the local ground forces commander feels that flame or incendiaries will greatly help him in achieving

his objectives. Many refugees arriving in Pakistan (spring 1980) claim that the Soviets have used incendiaries (reported as napalm in US periodicals and newspapers) against their villages. The ~~terms~~ descriptions range from that of a powdery like substance, which falls and ignites after the aircraft leaves, to sticky balls (marbles) which are released from helicopter rocket pods, cling to animals, buildings, etc., and within minutes burst into flame. In Ethiopia during the fall-winter 1978-79 time frame, it has been reported that over 60 Ethiopian Air Force officers were arrested for protesting the use of defoliants and napalm against guerrilla positions and civilian villages. As a result, Cuban pilots reportedly are now flying these types of missions.

~~(U) The Soviets currently have a number of different types of incendiary and/or napalm bombs in their inventory. These include thermite, WP, napalm and combinations of these incendiary and flame agents. Tab H gives characteristics of these bombs.~~

(U) According to Soviet literature, the most favorable detonation altitude for thermite bombs is 200-400 meters for targets in open terrain. At this altitude, the thermite balls fall on the target before the primers are burned out and the thermite is ignited. To cause forest and grain fires, the burst should be at an altitude of between 400 and 700 meters. In this case, only the burning thermite balls fall to the ground and ignite the target. If solid targets such as buildings with strong roofs are to be penetrated, the thermite bombs are to be dropped without fuses and without power charges or with a blind fuse. When penetrating the target, the thermite balls in the bomb casing are deformed, casuing enough heat to set them on fire, and subsequently causing the entire bomb to burn.

(U) The Soviets also have aerial incendiary devices (ZAP) which are used to spray-deliver incendiary mixtures. These devices consist of the regular ZAP spray tank to which a smaller auxiliary unit is connected. The ZAP tank is filled with granulated phosphorous in a calcium chloride solution. The auxiliary unit is filled with the S-4 smoke mixture (chlorosulfonic acid and sulfur trioxide). Both units are opened at the same time. The phosphorous will thus come in contact with the S-4 smoke mixture and when exposed to the air will ignite, which should be just prior to reaching the ground. This system is designed to be released from slow moving aircraft at low altitudes (14-30 meters). There is some information which suggests that the Soviets have worked on incapsulating the phosphorous granules so that an increase in time, from release to ignition, can be obtained. If they have in fact incapsulated the phosphorous, the Soviets will be able to release this incendiary agent from a higher altitude. Tab I contains characteristics of the ZAP systems.

(U) Spherical containers, which are used for aerial delivery of incendiary mixtures, are also included in the Soviet inventory. These containers consist of two metal semispheres and are about 120 mm in diameter. The upper half is designed with predetermined breaking points. The lower half is provided with an opening for the filler agent and is closed with a bolt; the center of gravity is thus located in the lower half of the sphere. These spheres are filled with a solution of phosphorous, sulfur and water. The containers are discharged from multibomb containers or rotating cluster bombs. Upon impact with the group, the upper half of the container bursts into several fragments and the incendiary mixture is ejected onto the terrain; when the water evaporates,

the mixture ignites. The inventory also contains encapsulated phosphorous spheres which are 30-40 mm in diameter. When these spheres hit the ground they usually tend to break into several sections and ignite upon being exposed to the air. It is also possible to drop these spheres so that they do not break up upon impact, but will ignite when the encapsulating material evaporates. We do not know tnature of the encapsulating material.

(S) The Soviets have found from target analysis that high explosive (HE) bombs are not the best munition against all targets. Incendiary bombs also do not result in maximum destruction against all targets. As a result, the Soviets have indicated that a mixture of HE and incendiary bombs will probably be used against most targets. The mix of these bombs will depend upon the target. It is believed that as a result of the above mentioned target analysis and the Soviet concept of using both HE and incendiary bombs against most targets, the ZAB-100-114 bomb (containing both thermite and HE) was developed. (Tabe H has technical characteristics of this bomb.)

(S) The Soviets appear to recognize, as does the US, the value of CEMs over pure incendiaries.

(C) The Soviet pure incendiaries inventory would be more significantly impacted by the proposed prohibition, however, than that of the US.

~~SECRET~~

APPENDIX III

INTERNATIONAL LAW

(U) This portion of the DoD Incendiaries study constitutes an as yet uncoordinated legal review of the feasibility of accepting the standard proposed in paragraph 10 of the Draft Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons prepared by the Incendiaries Working Group at the first session of the United Nations Conventional Weapons Conference ("CCW"). That proposal provides:

> "It is prohibited in any circumstances to make any military objective located within a concentration of civilians the object of attack by air-delivered [flame] [incendiary] weapons."

Perspective:

In weighing each, perspective must be given to the issues and context in which the issues are being addressed, viz.,

(U) Incendiary bombs are anti-material weapons which, when used for the intended purpose, are lawful weapons. No nation participating in the CCW has yet pursued the argument that incendiary weapons are illegal per se. This is a cornerstone of the U.S. guidance for the CCW and a point which the U.S. has stressed in pre-conference and conference negotiations. As with any weapon, however, they may be utilized in an

unlawful manner. Thus questions regarding their legality as well as the acceptability of the CCW proposal only relate to circumstances of their employment.

(U) The terms of references of the CCW.

(U) In the course of the CCW, the effects of aerial delivery of incendiary weapons consistently have been characterized in the worst case situation, i.e., likened in every instance to the bombing of Hamburg from 24 July to 3 August 1943 by RAF Bomber Command and the 8th Air Force, and to the fire raids on Tokyo conducted by the 20th Air Force on 9-10 March 1945.

(U) Discussion at the CCW of incendiaries frequently but incorrectly conjures up references to a "fire storm" as an inevitable by-product of all incendiary attacks. The U.S. Strategic Bombing Survey (USSBS) found that of the 32 major German cities which suffered heavy incendiary attack, only three -- less than 10% -- suffered from the phenomenon known as a "fire storm." Those fire storms were the result of a concentration in time and space of massive amounts of incendiaries on the target area and, to a lesser extent, of atmospheric conditions. The conflagrations of World War II came as the result of the practice of target area bombing of urban areas, rather than from the use of incendiaries per se. Precision attacks of military targets in occupied France utilized incendiaries with minimum to no damage or surrounding civilian areas. Although there have been aerial incendiary attacks since World War II, neither the US nor any other nation has dropped massive amounts of incendiaries or

done target area bombing; the fire storm effect has not been repeated. Target area bombing of urban areas as noted earlier, represents neither the current policy nor recent practice of the U.S.

~~(S)~~ CCW Objectives and International Law.

~~(S)~~ The Conventional Weapons Conference, and the draft incendiaries protocol in particular, are attempts to develop new restrictions on the use of currently lawful weapons. Viewed in the most optimistic light, the objective of the proposal for a limitation on the employment of aerially-delivered incendiaries is humanitarian in that it seeks to minimize further possible collateral injury to the civilian population and damage to civilian objects. At the same time, the CCW in large measure is the outgrowth of criticism of the participation of the United States in the conflict in Vietnam. Much of the rhetoric heard in the debates of the CCW stems from allegations about that era, to which the United States has expended substantial resources responding. Thus the CCW deliberations are higly purely political and somewhat akin to a debate of the United Nations General Assembly, except that the participants are striving for a document which has the potential to be legally binding. For this reason, the United States has participated in the CCW primarily as a damage-limiting effort. The United States has emphasized to its NATO allies on more than one occasion that it is not anxious for an agreement, and would not consider the CCW a failure if no agreement is achieved.

~~(S)~~ United States' practice and interpretation of international law differs from the objective of the CCW incendiary proposal in that the latter assumes

that in every instance air-delivered incendiary munitions will cause greater collateral damage and civilian injury than alternative weapons. With the exception of Dresden, the United States Strategic Bombing Survey found that the civilian population of Germany suffered greater incidental injury from bombing from conventional high explosive munitions than it did from the use of incendiaries. This result did not depend upon the incendiary-to-high explosive ratio of bomb loads for a particular mission, the nature of the target, or the area of town which was struck. Rather this result was obtained because one may frequently flee the effects of fire, while fragmentation and blast effects are instantaneous. Moreover, fire damage may be limited by fire breaks (such as streets) and effective fire fighting.

~~(S)~~ Stated simply, U.S. military practice is to attack a target with the most effective weapon which is reasonably available, with a view to minimizing civilian casualties to the extent feasible. In this respect U.S. practice conforms to Article 57(2)(a)(ii) of Protocol I, infra. If the intent of the draft incendiaries protocol is to minimize collateral damage to civilians, that is accomplished in application of the rule of proportionality and general targeting concepts employed by the United States. That intent may be furthered through language imposing a limitation on the attack of targets with incendiary munitions when those targets are not separate and distinct from a concentration of civilians. If the intent of the draft incendiary protocol is to preclude the starting and spread of fire, however, that is not accomplished. By their nature high explosive bombs have an incendiary capability, albeit limited. A post-World War II study concluded that "the probability of starting a fire was found to be independent of the target characteristics...but the extent of fire

depended on the combustibility classification." Effectiveness of U. S. Incendiary and High-Explosive Bombs, (March 1946) p. 279 [emphasis in original]. This combustibility factor would not necessarily be known to the targeteer, as it depends on myriad internal factors within the control of the defender (e. g., rags on the floor). Thus, in some cases, even where ordinary HE bombs are used, a fire could be started and spread to adjacent property. The draft incendiary protocol would have no effect on this type of damage. On the other hand, the attack of a target with incendiaries does not mean that there will be disproportionate collateral damage in every case. Nor is it correct to assume that incendiaries will cause greater collateral damage, or that air-delivered incendiary bombs will result in greater collateral damage than other weapons (e. g., artillery fire). Experience in the Vietnam operation LINEBACKER II established that almost all targets for which incendiaries (or an incendiary-high explosive mix) would be the weapon of choice had to be re-attacked when they were attacked with HE munitions only. This could represent a greater threat to the civilian population in that repeated sorties increase the likelihood of collateral damage and injury as a simple matter of mathematical probability. In this respect acceptance of the draft protocol restriction would be detrimental to U.S. interests in requiring additional attacks of targets, resulting in a proportionate increase in risks to aircrews and aircraft.

(U) Applicable Law.

(U) Applicable law relating to the attack of a military objective or target located within a concentration of civilians is best summarized in several

provisions of Additional Protocol I to the 1949 Geneva Conventions. While the United States has signed but not ratified Protocol I, the provisions to be cited reflect generally accepted U.S. interpretations of the law.

(U) The targeting process is the means by which the military necessity for attacking a target is determined. In international law, military necessity authorizes such destruction as is necessary, relevant, and proportionate to the prompt realization of legitimate belligerent objectives. The targeting process involves respect for several requirements stated in Article 57(2)(a) of Protocol I:

(i) to do everything feasible to verify that objectives to be attacked are neither civilians nor civilian objects, but are military objectives;

(ii) to take all feasible precautions in the choice of means and methods of attack with a view to avoiding, and in any event to minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects; and

(iii) to refrain from deciding to launch any attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, ~~which would be excessive in relation to the concrete and direct~~ military advantage anticipated.

(C) "Feasible" has been defined earlier. (P.) "Concrete and direct military advantage anticipated" has been interpreted by the US to mean an honest expectation that the attack will make a relevant and proportionate contribution to the purposes of the attack.

(U) In the attack of a target, Article 51 (5)(a) of Additional Protocol 1 specifically prohibits general area bombing and limits target area bombing by declaring as indiscriminate "an attack by bombardment by any method or means which treats as a single military objective a number of clearly separated and distinct military objectives located in a city, town, village or other area containing a similar concentration of civilians or civilian objects." The U.S. declared during the Diplomatic Conference on International Humanitarian Law Applicable in Armedconflicts that "the words 'separate and distinct' refer not only to a separation of two or more military objectives which can be observed or which are visually separated, but also include the element of a significant distance. Further, that distance must be at least of such a distance that will permit the individual military objectives to be attacked separately."

(U) Finally, while the CCW incendiaries protocol places an obligation upon the attacker, international law recognizes the obligation to minimize non-combatant casualties and damage to civilian objects to be one shared by both the attacker and the defender. The obligation of the defender is provided for in Article 23 of the 1949 Geneva Convention Relative to the Treatment of Prisoners of War, Article 28 of the 1949 Geneva Convention Relative to the

Protection of Civilian Persons in Time of War, and Articles 51(7) and 58(a) and (b) of Protocol I. The obligation of the defender will be elaborated upon in consideration of the language of the the draft incendiaries protocol.

(U) Language of the Draft Incendiaries Protocol.

(U) The applicable provisions of the still bracketed draft incendiaries protocol are paragraphs 10 and 11:

"10. It is prohibited in any circumstances to make any military objective located within a concentration of civilians the object of attack by air-delivered [flame] [incendiary] weapons.*

11. It is prohibited to make any military objective located within a concentration of civilians the object of attack by means of incendiary munitions, except when that military objective is clearly separated and distinct from the concentration of civilians and all feasible precautions are taken with a view to limiting the incendiary effects to the military objective

~~*As noted previously, the US has already stated that it is willing to forego~~ the use of iar-delivered flame weapons and thus can accept removal of the brackets from the word "flame."

loss of civilian life, injury to civilians and damage to civilian objects."

(U) Three points have been raised in the Legal review of the draft paragraphs.

1. Limitation on attack with incendiary weapons may result in greater collateral injury and constitute a violation of the law of war. As noted above, Article 57(2)(a)(ii) requires that an attacker "take all feasible precautions in the choice of means and methods of attack with a view to avoiding, and in any event to minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects." United States' bombing policy and practice is consistent with this requirement. In that the United States Strategic Bombing Survey concluded that greater collateral injury occurred through the employment of high-explosive bombs than through the use of incendiaries, the limitation proposed in paragraph 10 of the draft incendiaries protocol is in direct conflict with United States policy and the current requirements of international law as stated in Article 57(2) (a) (ii) of Protocol I. This contradiction of Article 57(2) (a) (ii) by draft paragraph 10 would be exacerbated should the United States elect in the future to develop a precision-guided incendiary munition. In planning an attack, the commander must act with the means at hand. If (e.g.) a commander has

available to him only precision-guided incendiaries and conventional unguided general purpose high explosive bombs, as well as a target located within a concentration of civilians which requires immediate attack, his attack of that target with the GP bomb in compliance with the proposed restriction of draft paragraph 10 today would constitute a violation of the law of war.

2. ~~(S)~~ "In any circumstances" and the concept of reciprocity. "In any circumstances" could be interpreted to obligate the United States to restrict its employment of air-delivered incendiaries regardless of the actions of its opponent. Where the phrase "in all circumstances" has been used in other documents (e. g., Protocol I), it is the position of the United States that language is limited to the interpretation intended in the 1949 Geneva Conventions, i. e., that the law must be respected regardless of the nature of the conflict (to avoid issues of whether the war is "just"). However, there has emerged a line of thought by some delegates at the CCW that "in any circumstance" restricts use even where the enemy has violated the protocol, and "in any circumstances" vis-a vis "in all circumstances" would lend support to this argument. Given the fact that there has been an avoidance of discussion of the issue of reciprocity or reprisals, the lack of a negotiating record on the subject lends itself to myriad interpretations. Thus (by this interpretation) if the enemy employed

air-delivered incendiaries against targets located within a concentration of civilians, the phrase "in any circumstances" would preclude an attack in kind in reprisal (the U.S. has declared that, although the CCW treaty is more in the nature of an arms control agreement than a law of war treaty, it is not a "no first use" treaty). If the enemy violates its requirements as a defender by utilizing the civilian population to shield legitimate military targets, or intentionally locates targets within a concentration of civilians, the phrase would preclude attack of those targets with incendiary weapons, even in those instances where incendiary bombs might be the most precise and discriminate weapon available -- as well as the most effective against that particular target. Given the U.S. policy of rigid adherence to international law in its conduct of military operations, this phrase could place the U.S. at an unfair military advantage in combat operations against a not-so-scrupulous opponent.

3. Paragraph 10 vis-a-vis 11. Paragraph 11 was added by the Chairman of the Incendiaries Working Group during the first session of the CCW. Standing alone, it constitutes little more than a restatement of the law as it applies to all weapons, except that the phrase "separate and distinct" is used in a different context than it is in Article 51 (5) of Protocol I. (Utilization of the phrase "separate and distinct" in a different context does not pose any legal problem. The term

"feasible" is utilized in a different context in Articles 41, 56, 57, 58 and 77 than it is used in Articles 76 and 78 of Protocol I.) However, when joined with paragraph 10, it could be interpreted to mean that a military target located within a concentration of civilians could not be attacked by air-delivered incendiary weapons even when that target is separate and distinct from the concentration of civilians. This is particularly true so long as the phrase "in any circumstances" remains in paragraph 10.

(C) This was never the intent of the members of the Incendiaries Working Group, but it is a possible interpretation which could be developed and one which would be contrary to U.S. interests. It therefore must be countered at the next CCW session and an effort made to modify the paragraph to include a reference to "separate and distinct."

CONCLUSION

(C) From the standpoint of international law, any one of the following alternatives would be acceptable:

a. Limitation of the restriction in draft paragraph 10 to air-delivered flame weapons only, provided paragraph 11 is deleted. It should be noted that the air-delivered flame restriction could under certain circumstances result in greater injury to the civilian population in violation of Article 57(2) (a) (ii), for the same reasons set

forth supra. However, this is less of a problem with air-delivered flame weapons inasmuch as they generally are employed in a close air support scenario in which ground forces are in close contact, and in which there usually will not be a concentration of civilians.

b. Deletion of paragraph 10, and retention of paragraph 11.

c. Deletion of paragraph 10, and amendment of paragraph 11 to read as follows:

"11. In making any military objective located within a concentration of civilians the object of attack by means of incendiary munitions, those who plan or decide upon that attack shall:

a. take all feasible precautions in the choice of means and methods of attack with a view to avoiding, and in any event to minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects; and

b. refrain from deciding to launch any attack with any incendiary munitions which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated.

These latter two alternatives, of course, are based on the language of Article 57(2) (a) (ii) and (iii). It is anticipated that there may be some complaints since this formulation merely restates current law rather than going beyond it.

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File SCW

THE JOINT CHIEFS OF STAFF
WASHINGTON, D.C. 20301

26 June 1980

(13)

THE JOINT STAFF

MEMORANDUM FOR MR. MATHESON, LEGAL ADVISOR, PM, DEPARTMENT OF STATE

SUBJECT: Draft CCW Convention

1. The attached informal comments are provided as confirmation of the verbal comments passed telephonically this date.

2. We would be pleased if these comments could be discussed with Ambassador Aldrich prior to the 10 July NATO Experts Meeting.

J. N. Smith

J. N. SMITH
Colonel, USMC
Chief, Maritime/UN Negotiations Division

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OSD251 #5
CCW 1980

(14)

SGRD-PL
SUBJECT: Trip Report - OCONUS TDY

CF:
Dep Under Sec of Def R&D (R&AT) WASH DC 20301
HQDA (DAMA-PPI) WASH DC 20310
HQDA (DAMA-CSM/LTC Gardner) WASH DC 20310
HQDA (DAMO-RQA/LTC Taylor) WASH DC 20310
Dir, USAMSAA, ATTN: DRXSY-GB/Mr. Carn, APG, MD 21005
Ofc Asst Secy of Army (RDA), ATTN: Dr. Yore, WASH DC 20310
Dept of State, ATTN: Mr. G. Aldrich, WASH DC 20520
Multilateral Affairs Bureau, Arms Control & Disarmament Agency, ATTN: Mr. C. Flowerree, WASH DC 20451
Ofc of the Legal Adviser, Dept of State, ATTN: Mr. Michael Matheson, WASH DC 20520
Asst Gen Counsel, Arms Control & Disarmament Agency, ATTN: Ms. M. Mazeau, WASH DC 20451
Joint Chiefs of Staff (J-5), Dept of Defense, ATTN: COL J. Smith, WASH DC 20350
Bureau of Weapons Evaluation & Control, Arms Control & Disarmament Agency, ATTN: Mr. W. Staples, WASH DC 20451
HQDA (DAJA-IA/CPT E. Cummings) WASH DC 20301
US Air Force, Ofc of the Judge Advocate General, ATTN: COL R. Norris, WASH DC 20330
Dir, USA Materiel Systems Analysis Agency, ATTN: Mr. R. Pollard, APG, MD 21005
HQDA (DAMO-SSM/LTC R. Roberson) WASH DC 20301

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BACKGROUND MEMORANDUM 21 AUG 1978

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FOR

(15)

US DELEGATION TO THE UN CONFERENCE ON PROHIBITION OR RESTRICTION OF USES OF CERTAIN CONVENTIONAL WEAPONS

SUBJECT: SMALL ARMS AMMUNITION

I. (U) INTRODUCTION

Recent trends in the development of military small arms have led to smaller and lighter weapons and ammunition. The greatest benefit obtained with these new systems is their decreased weight, which reduces the combat load of the fighting man while maintaining (or even increasing) the fire-power available to him as compared to that provided by the older, heavier, larger caliber weapons.

The small caliber projectiles fired from these new weapons, being lighter than their predecessors, retard more rapidly along their trajectories. They must, therefore, be launched at higher initial velocities so that they can be effective at all reasonable engagement ranges.

Due to the increased initial velocities of these projectiles, they have come under the criticism that their effects on personnel are similar to the effects caused by 'dum-dum' bullets, whose use in international conflicts was outlawed by the Hague Conventions of 1899. Based upon this alleged similarity of effects, prohibitions on the use of 'especially injurious small caliber projectiles' in international conflicts has been proposed.

II. (U) SUMMARY OF LUGANO CONFERENCE (JAN-FEB,1976)

Data on the effects of small arms was presented by Sweden, Japan, Indonesia and the United States. The Swedish data purported to show that excessive wounds are caused by small caliber high velocity projectiles. However, the experimental results were limited and final conclusions were not drawn. Data presented by the United States, Japan and Indonesia tended to refute the claims of critics of small caliber, high velocity projectiles. Generally, the data showed that bullets tumble (the purported cause of the 'dum-dum' effect) at low velocities as well as at higher velocities and that tumble is substantially a function of impact yaw. Further, lower initial velocity weapons in the 7.62mm class cause more severe effects than the higher velocity weapons in the 5.56mm class.

As a result of the data presentations and the obvious differences in the various countries' methods of collecting data and making assessments, a

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working group was formed to define a standardized methodology. However, the working group concluded that substantially more research was required at national levels before progress could be achieved.

III. (U) SCOPE OF WEAPONS.

A. Ammunition - Point target, high velocity, small caliber conventional bullets or flechettes (with discarding sabots) for the smaller caliber small arms weapons.

B. Weapons - Assault rifles with effective ranges in the 300-500m category; light support weapons employed at the section or squad level and capable of delivering a higher volume of fire up to ranges of 600-800m; medium support automatic weapons operating from ground or vehicle mount and capable of engaging targets out to ranges of 1000m and possibly beyond.

IV. ~~(FOUO)~~ NEW WESTERN SMALL ARMS.

Belgium, France, Netherlands, Germany, United Kingdom and the United States all have potential candidates for the future NATO small arms system. All of the candidate weapons countries have at least one system with a caliber of 5.56mm or less and with initial velocities of 915m/s (3000 fps) or more. All candidate weapons have projectile weights and cyclic rates of fire comparable to the US M16A1.

V. ~~(C NOFORN WNINTEL)~~ NEW SOVIET SMALL ARMS (U)

The Soviets are reported to have a 5.62mm AKD assault rifle which fires an extremely high velocity multiple flechette round as well as possibly a high velocity multi-ball round. Either round would produce larger bullet strike patterns which would be consistent with the Soviet stress on supressive fire and engagement from moving vehicles with the inherent reduction in accuracy and corresponding indiscriminate effects.

VI. (C) RELATIVE INCAPACITATION EFFECTS OF CURRENT WEAPONS (U)

See Table 1

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VII. ~~(FOUO)~~ RELATIVE CHARACTERISTICS OF SOME CURRENT WEAPONS

(See Table 2)

VIII. (U) PROTECTIVE ARMOR

The principle behind the use of body armor or similar protective equipment is the dissipation of the energy of the bullet within the structure of the armor material. It has been shown, for example, that eighteen layers of soft body armor constructed of Kevlar aramid fiber can defeat a 9mm, full metal jacketed, 124 grain bullet at 1200 fps or a .357 magnum, 158 grain bullet at 1300 fps. However, the same material cannot defeat the 115 grain, steel jacketed, 9mm bullet at 1100 fps. Similarly, it has been demonstrated that the US Ceramic/GRP Variable Armor infantry plate can defeat the M16A1, 55gr bullet at 3200 fps but cannot defeat a .375 mag H&H, 300gr bullet at the lower velocity of about 2700fps.

In short, velocity reduction or limitation does not guarantee less severe wounding. Likewise, a bullet which deposits substantial energy very quickly by virtue of rapid deformation, may result in less severe wounding in instances where body armor or some other shielding material must first be breeched before the bullet reaches the soldier.

IX. (U) SUMMARY POINTS.

- Higher velocity, smaller caliber weapons do not necessarily cause more severe wounding.
- Higher velocities do not necessarily produce less stable bullets.
- Stability is, to a great extent, a function of bullet design.
- Tumble (or stability) is substantially a function of yaw and yaw characteristics vary with range on a bullet by bullet basis.
- Where protective armor is worn, instability resulting in quick energy dump can produce less severe wounding than from slower, more stable or armor type piercing rounds.

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Table 1 (S)

PROBABILITY OF INCAPACITATION
GIVEN A RANDOM HIT - P(I/H)
(30 sec Assault Criterion) (U)

	WEAPON		
RANGE (m)	US M16A1 5.56mm	US M14A1 7.62mm	SOVIET AKM 7.62mm
200	.84	.87	.62
300	.68	.83	.55
400	.61	.81	.49
600	.49	.80	.55

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Table 2 ~~(FOUO)~~

RELATIVE CHARACTERISTICS OF CURRENT WEAPONS

	WEAPON		
Characteristic	US M16A1	US M14A1	SOVIET AK-47
Projectile Weight (grains)	55	147	122
Projectile Initial Velocity (m/s)	960	870	720
Distance (cm) to Begin Tumble in Gelatin @300m	16.0	18.0	16.5
Average Striking Velocity (m/s) @ 300m	592	662	446
Average Striking Energy (joules) @ 300m	626	2093	788
Expected Wounding Volume (cc) in Animal Tissue @300m	44.2	61.8	17.3

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(16) Fil Conv. Weapons

COMMENTS ON FRG "PAPER CONCERNING UN CONFERENCE ON PROHIBITIONS OR RESTRICTIONS ON USE OF CERTAIN CONVENTIONAL WEAPONS"

Given me by JCS – July 14, 1978

Annex A: Air Warfare (will follow (not received))

Annex B: Incendiary Weapons (Army)

1. Page 2, Item I, a, (1), Column A, No. 1 - This restriction is unacceptable. It is too restrictive since a "careful" target reconnaissance is not always possible. Further, the standard "careful" is subjective and undefined. The only restriction acceptable should be that on attacks against a city, town, village or areas with civilian concentrations or objects (with an exception for military targets within those areas).

2. Page 3, Item I, b, Column A, No. 1 - This restriction is unnecessary since it falls within the accepted principle of proportionality.

3. Page 3, Column B - This restriction is unacceptable. The projectiles sited serve different missions and are not interchangeable. (M-110 Smoke W.P. is a marking/light screening round. M-116 HC is a large area screening round.) Despite the difficulty of establishing that a "less dangerous" type ammunition was available, the user is vulnerable to war crimes charges whenever a M-110 Smoke round injured personnel. Further, to delimit the status of WP in a separate provision is totally unacceptable. It gives the impression that WP is inhumane/indiscriminate and reintroduces subject matter that was successfully excluded from the definition of an incendiary. However, if such a provision were presented, it would be difficult to justify the exclusion of napalm from the same regulation.

4. Page 3, Column A, No. 2 - This restriction is inappropriate since it is a matter within the purview of the FRG. However, it would set a negative precedent for NATO and could be exploited by adversary propaganda.

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5. Page 4, Item II, Column B - This restriction parallels a current protocol but the phrase "all possible precautions" is imprecise and could lead to ex port facto declarations of illegal use of incendiary munitions. Substitution of the term "feasible" for "all possible" would make it acceptable and negate the need for the precondition cited.

ANNEX C: Small Caliber Weapons

6. Page 1, Column A, No. 1 - This restriction is unacceptable since the additional clause requiring "adherence to the spirit" is imprecise and creates a convenient vehicle for propaganda.

7. Page 1, Column B, No. 1 and 2 - These restrictions are unacceptable despite their altruistic language, since without defined criteria they offer the opportunity for propaganda attacks veiled in the respectability of "scientific inquiry."

8. Page 1, Column A, No. 2 (continued on page 2) - This restriction is an unacceptable change to Article 36, since it interferes in a State's internal affairs.

9. Page 4, Item III, Column B - This restriction is unacceptable since: (a) it is based on a single aspect of the projectile injury equation; (b) it ignores future weapons developments; (c) it does not consider future improvements in body armor which would in turn generate, as compensation, either increased projectile velocity, density or weight; and (d) it is predicated upon inconclusive technical data.

10. Page 5, Item IV, Columns B & C - These restrictions are unacceptable. The kinetic energy of projectiles is only one factor contributing to the severity of wounds. Of primary importance is the amount of that energy which is transferred to the individual wounded. Further, the phrase

"terminal kinetic energy" requires definition. These restrictions also ignore future weapons developments and improvements in body armor. The latter would reduce the effectiveness of projectiles below the established kinetic energy/transfer standard and lead to faster, heavier or more dense projectiles to meet combat requirements. Their effect on the unprotected would be even more traumatic than current rounds. Designing a projectile which penetrates improved armor and still remains below the accepted standard of energy deposit may be quite difficult, since the results of projectile-armor interaction may produce earlier tumbling and/or projectile disintegration which would increase the energy transferred to the target.

11. Page 6, Item V, Columns A and B, No. 1 - These restrictions are unacceptable. Empirical data and technical criteria verifying the correlation between the proposed gelatin block and human flesh should precede establishment of a restriction. While current gelatin block data is useful in producing relative projectile wounding effects it does not accurately reflect empirical combat data. For example, US data from combat in Vietnam indicates that the AK-47 projectile often "disintegrated" at realistic ranges of engagement. Tests of the AK-47 projectile impacting in gelatin blocks, however, did not produce that result. Thus test conditions require significant improvement before restrictions are established. Moreover, a definition establishing when a projectile's "disintegrate" is needed.

12. Page 7, Item V, Column A, No. 2 - This restriction is unacceptable. The subjective standard "tolerable projectile effect" is a subjective one which defies accurate definition.

13. Page 7, Item V, Column A, No. 3 - This restriction is unacceptable since it fails to provide adequate guidance or standards to make the provision

meaningful. No criteria is given for evaluating the effects or suffering caused by 7.62mm NATO/Warsaw Pact projectiles. Specifically, what determines wound severity -- wound dimensions, energy deposit, amount of disability, loss of blood? The proposed restriction also ignores technological development, both in weaponry and protective measures such as body armor, with the consequences discussed previously.

14. Page 8, Item VI, Column A, No. 1 - This restriction is unacceptable since it strays from the present consensus agreement prohibiting the use of non-detectable materials as primary wounding agents. The operative factor is that of non-detectability by normal radiological means. Non-metallic materials meeting that standard should not be excluded from future technological development which could produce a more stable, non-disintegrating infantry projectile.

15. Page 8, Item VI, Column B, No. 1 - This restriction is unacceptable. The injury producing effects of uranium waste projectiles stem from their kinetic effects. US studies show that their radiation effects are minor, speculative and a long-term side effect and thus are not within the poison prohibition. Since the chemical toxicity of the uranium in question does not exceed that of lead, which is not subject to the poison prohibition, logically the prohibition would not be applicable to uranium waste. Similarly, although some uranium waste projectiles can be pyrophoric, they are not incendiary projectiles whose direct effects are the relevant factor in accessing their legality. This later view was recognized at the Lucerne Conference of Government Experts on the use of conventional weapons. It should be noted that depleted uranium is also used in dentures, without a significant radioactive effect and without public criticism. Criticism is based on interpretations

of Article 23(a), made in complete isolation of its context and contrary to its customary meaning.

16. Page 8, Column B, No. 2 - This restriction is unacceptable. The secondary effects of the tracer projectile are recognized by a consensus of States under current conventions as not causing undue suffering or injury. As presented, the restriction's lack of defined conditions preclude its acceptance. Further, this restriction is not cost-effective in humanitarian benefits for States with large inventories of tracers linked in machine gun ammunition.

17. Page 9, Column A, No. 3 - This restriction is unacceptable since it assumes that all plastics are not detectable by radiological means. Projectile detectability should be the criteria for acceptance, providing the material concerned has no other disqualifying properties.

18. Page 9, Column A, No. 4 - This restriction is unacceptable. Additional research is needed to validate the proposition that arrow type projectiles (flechettes) cause more severe injuries than existing projectiles under comparable conditions. US data contradicts this conclusion indicating that flechettes cause less injury to the wounded.

19. Page 10, Column B, No. 1 and 2 - These restrictions are unacceptable since they are impractical limitations upon the offensive and defensive fare support capabilities of the machine gun.

ANNEX D: Mines and Booby Traps

20. Page 3, Item II, Column 3 - This restriction is unacceptable since "effective precautions," stipulated as a precondition, may not be feasible. Substituting the term "feasible" for "effective" could make the restriction acceptable.

21. Page 5, Item I, Column A - This restriction is unacceptable since mine-field surveillance may be "possible" but not feasible. Substituting the term "feasible" for "possible" could make the restriction acceptable.

22. Page 6, Column A - This restriction is unacceptable since units forced to withdraw under fire cannot comply. Insertion of the phrase "when feasible" could make the restriction acceptable.

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(17)

THE JOINT CHIEFS OF STAFF
WASHINGTON, D.C. 20301

File-Conv. Weapons

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THE JOINT STAFF

16 November 1978

MEMORANDUM FOR RECORD

Subject: NATO Law of War/Conventional Weapons Preparatory Conference Consultations, 8-9 November 1978, at Brussels, Belgium

1. ~~(S)~~ On 8 and 9 November 1978 NATO legal and military representatives met to discuss the language of declarations/reservations to Protocols to the Geneva Conventions, consider Allied strategy for the Second UN Preparatory Conference on Conventional Weapons Prohibitions/Restrictions, develop a common position on incendiary proposals at the conference and exchange information on related current issues. Ambassador Becker (FRG) chaired the meeting and Ambassador George H. Aldrich led the US Delegation which included a representative from ACDA, Department of the Army JAG, and the undersigned OJCS member. TAB A contains a list of the delegations in attendance , and TAB B contains the meetings' agenda.

2. ~~(S)~~ Discussion on 8 November addressed the needs identified by NATO members to make declarations, understandings or reservations on specific articles of the Protocols in their respective instruments of ratification. Of primary importance is the need to insure that the Protocols do not prohibit the use of nuclear weapons. While the Netherlands and Denmark cited the negotiating history of the protocols as sufficient safeguard, the US, UK, FRG and others reiterated their intention to make a declaration at ratification. Since all participants agreed that the Protocols do not regulate or prohibit nuclear weapons, the US (supported by the UK, FRG, Canada and Belguim) urged all non-nuclear members to make a declaration to that effect. Norway and Denmark, while agreeing in principle, seeks to avoid a formal declaration. Italy has not made a decision.

3. ~~(S)~~ Ambassador Aldrich expressed his opposition to a reservation on the right of reprisal but that DOD favors it. The issue may not be resolved until Senate ratification hearings. For planning an alliance model reservation would be useful.

4. ~~(S)~~ Agreement was shared on a UK proposal for the definition of the term "feasible" when used in the Protocols. The US, Netherlands and Norway, however, will not make a formal reservation but instead include it in explanatory materials to their legislatures.

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5. (C) There was general agreement on a declaration formulated by UK concerning Article 44 to limit the requirement for distinction by guerrillas to occupied territory and struggles for self-determination as well as enroute to areas of deployment for attacks.

6. (C) A proposed UK declaration explaining "the military advantage anticipated from an attack" and stipulating that the definition of "military objective" included an area of land received general acceptance. The US stated, however, that it did not consider a formal understanding to be necessary.

7. (C) The UK expressed its concern with respect to the recognition of wars of national liberation and received limited support from Belgium. Both countries sought to base recognition of liberation movements upon the movements recognition by the respective regional intergovernmental organization. Lacking other support the UK appeared resigned to the language of Protocol II.

8. (C) With existing general agreement on NATO interpretations of Protocol language, declarations and reservations no date was set for the next meeting of legal experts. NATO's Political Committee will continue to monitor progress toward members' submissions of the Protocols to parliments and provide information as appropriate to all members. Another meeting is not expected for approximately 12 months.

9. (C) Consultations on 9 November focused on NATO strategy at the Second UN Preparatory Conference (PrepCon) on the Prohibition/Restriction of Use of Certain Conventional Weapons and a common NATO position on an incendiary proposal to that conference. NATO strategy development centered on the procedural question of conference decision-making. Following the impassee between NATO's desire for a strict consensus and the Third World's proposal for a 2/3 rds majority vote at the First PrepCon, respective capitols have considered possible alternatives which would protect NATO interests.

10. (C) Introducing an alternate proposal, the FRG stated that it considered attainment of a strict consensus procedure for decision-making to be impossible. From that assumption, the FRG presented a "soft edged" consensus in which proposals could be adopted without unaminity. Specifically, decisions on substance could be adopted with opposition but not "significant opposition". "Significant opposition" was defined as any three states in a Regional Group or a total of five states in various regional groups. The proposal received wide support and was recommended to capitols for consideration.

11. (C) The UK presented another decision-making proposal which agreed to operate by consensus "as far as practicable", and when difficulties arise to consult to establish an appropriate voting procedure. Suggested as a procedure similar to the SSOD and LOS decision-making formulas, the proposal received little support. The formulation was generally considered to be too vulnerable to a reversion to voting to be effective.

12. (S) The US called attention to the close linkage between procedural and substantive matters exphasizing the need for protecting NATO interests through some form of consensus. Since a modified consensus would probably emerge the West should use the issue in a guid pro quo for matters of substance. With this leverage on substantive proposals NATO could shape the cast of the ultimate UN Conference. In this effort the West should endeavor to enlist the support of the Eastern Bloc since both groups share a common interest in limiting radical proposals or actions. If direct Eastern support was not forthcoming, the West should then "smoke out" the Eastern Bloc to get that support, and at a least preclude the Bloc's exploiting both Western successes (substantively) and failures (through propaganda).

13. (S) Substantive discussion centered on the agreed need for a common NATO position on an incendiary weapons proposal. In an effort to accommodate previous objections to their proposal, the Netherlands suggested the deletion of the exception in paragraph 2c. This would have the effect of imposing a total prohibition on the use of aerial delivered napalm in concentrations of civilians (cities, towns, villages). The UK, Canada, Norway and France expressed support for this compromise proposal language.

14. (S) France called attention to the Danish-Norwegian incendiary proposal which was also on the table but cited objections to it similar to those of the NATO Military Committee (and the US). Of note, however, was France's apparent willingness to accept some undefined anti-personnel (troop) prohibition.

15. (S) Norway expressed its willingness to modify or withdraw its proposal as necessary to help reach a common NATO position on the issue.

16. (S) The US noted that a common NATO position must be acceptable to all and reflective of military security interests. US objections to the Danish-Norwegian proposal were explained and the desire to focus any "common proposal" toward protecting civilians was expressed. The Allies were reminded of US global responsibilities and associated US requirements for napalm. The US expressed difficulties in supporting the now modified Netherlands proposal, which had wide NATO political support (but opposed by the NATO MC (unstated)). Nevertheless the US would consider the modified proposal thoroughly and report to the Allies.

17. (S) The FRG proposed and it was agreed to hold an ad hoc drafting meeting in mid-January to develop a NATO incendiary proposal for the Second PrepCon.

18. (S) The group agreed to conduct "full consultations" on 22-23 February 1979 prior to the Second PrepCon. This would permit the conduct of related business in capitols before the beginning of the PrepCon in Geneva 19 March 1979.

19. (S) Subsequent to the meetings closing, Ambassador Aldrich advised that he would request by letter, that DOD (ISA) study the modified Netherlands proposal and identify US napalm requirements in preparation for the January 1979 ad hoc drafting meeting.

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20. ~~(C)~~ Observations:

a. Consensus Issue

(1) France remains the strongest US ally in seeking a strong consensus procedure for the PrepCon decision-making.

(2) UK expresses great concern over the weight of the precedent associated with whatever decision-making procedure is adopted. UK military reps are advocates of a strict consensus but could accept the FRG proposal. Implied loyal opposition to weaker political approach.

(3) FRG appears pleased with wide acceptance of its "soft edged" consensus which enables them to ease away from the strict stand they found "uncomfortable".

(4) Canada, Belgium, Norway endorse the FRG "soft edged" consensus.

b. Incendiary Issue

(1) UK and Canada demonstrate increasing political support for restrictions on napalm use. UK military do not agree and support the NATO MC (and US) military assessment although they have little or no napalm in stock. Canada differed with the MC assessment.

(2) France indicates understanding of and support for US weapons requirements. France has significant napalm stocks but did not comment on the MC assessment.

(3) FRG expresses a continued requirement for napalm but indicated support for the Netherlands modification. FRG has significant napalm stocks but did not comment on the MC assessment.

(4) Norway and Denmark demonstrate flexibility in reaching a compromise on the issue but express a political requirement for "some" restriction. Both differed with the MC assessment.

(5) Belguim expressed ignorance about the military requirements for napalm but supported the NATO MC assessment through military channels.

(6) Netherlands, Italy and remaining NATO States indicate flexibility on the issue but supported the MC assessment.

Joseph N. Smith
Colonel, USMC
Maritime/UN Negs Div, J-5

Attachments
a/s

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C05431410

THE JOINT CHIEFS OF STAFF (18)

MEMORANDUM

TRANSFERRED FOR DIRECT REPLY
DOD

Date 16 November 1978

To: Ambassador George H. Aldrich

Subject: NATO Law of War/Conventional Weapons Preparatory Conference Consultations, 8-9 Nov 78, at Brussels

NO OBJECTION TO FULL RELEASE

1. The attached memorandum of record is forwarded for your information.

2. Paragraph 20 contains my observations re other states' positions on the two principal UN Preparatory Conference issues. While they may not coincide with your assessments, nevertheless they reflect the information I acquired in Brussels.

3. I have alerted the Service Action Officers to your forthcoming letter with its requirement, so hopefully we can respond in a timely manner.

Very Respectfully,

Joe Smith

J. N. Smith
Colonel, USMC
Maritime/UN Negotiations Division, J-5

Attachment:
a/s

051251 by
COW Sep-Dec. '78

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[redacted]

RECOMMENDED US POSITION ON LANDMINES/BOOBY TRAP RECORDING

(22)

Primary Position

1. An international, legally binding standard for minefield recording is unacceptable.

a. It is impractical to agree to a set standard for recording. There are many variables which influence how minefields are recorded. The exigencies of combat, time available, equipment available, personal skill, delivery system used, types of mines implaced, terrain, etc., all influence the techniques and accuracy of recording. These variables cannot be determined beforehand.

b. The US military has not decided on the system to be used or the details of its own recording requirements. The military utility of scatterable mines has led to a tremendous expectation for mine use by all services using numerous delivery systems and multiple employment techniques. We do not know what is militarily feasible for ourselves. We should not agree to a binding international standard until we know what military necessity requires and technology permits.

c. Many of the minefields laid in combat, including some preplanned minefields, will be RCMs laid in the territory of the enemy. In these circumstances it is impractical to hold the party laying the mines to anything but a simple and nonspecific recording standard.

Fallback Position

We could agree to a non-binding standard which allows maximum flexibility for commanders. The standard could only be general in nature and must not impose specific technical requirements. The goal of maximum flexibility might be achieved by one or a combination of several drafting techniques. An obligation to "endeavor" to meet the standard would impose no substantive burden on the commander and still permit the conclusion of an apparently binding agreement. An alternative, but less appealing, approach would be to make the standard subject to a "feasibility" exception. Finally, the standard might take the form of a nonbinding model for national standards, or a model bilateral agreement between the belligerents in a particular conflict. As such, it could either be incorporated in an annex to the treaty or a conference resolution. An example of what would be acceptable is:

"Commanders will endeavor to record, to the extent feasible, preplanned manually implaced minefields and preplanned large-scale use of booby traps, such as:

a. location from a single established reference point.

b. density of mines i.e., approximate number.

c. approximate size i.e., 600 square meters.

d. type of mines.

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e. non-specific statement on absence or presence of antihandling devices.

f. Date and time of implacement".

Comment: This fallback position is not a negotiating position. It represents the extreme limit of US flexibility of what could be accepted. Examples of recording standards which are specifically not acceptable are:

(a) Any requirement to record the pattern of the minefield i.e., phrases such as "center point" or "corner point" are not acceptable.

(b) Specifics on fuzing or antihandling devices or self neutralizing devices.

(c) Specific size i.e., 100m by 400m.

(d) Location of specific mines.

[redacted]

[redacted]

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THE JOINT CHIEFS OF STAFF
WASHINGTON, D.C. 20301

JCSM-242-80
5 September 1980

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MEMORANDUM FOR THE SECRETARY OF DEFENSE

Subject: DOD Study on Incendiary Weapons (U)

1. (U) Reference a memorandum* that requested JCS concurrence in a letter authorizing the Ambassador and Deputy Special Representative of the President for Law of the Sea Conference to negotiate a new and broader prohibition on the use of air-delivered incendiary weapons.

2. (U) The Joint Chiefs of Staff do not concur in the proposal to accept a prohibition on the use of air-delivered pure incendiary weapons against military targets located within areas containing civilian noncombatants (concentrations of civilians). They do, however, support the conclusion that combined effects munitions (CEMs) should be excluded from any new prohibitions or restrictions beyond those now imposed by international law.

3. (U) The proposed prohibition on air-delivered pure incendiary weapons is militarily unacceptable. As documented in the report of the DOD Working Group on Incendiary Weapons (Enclosure 2 to reference), incendiary weapons have unique military utility. They are more effective than alternative munitions, and they would be the weapon of choice against many high-value strategic and interdiction targets that are likely to be located within concentrations of civilians. Examples of such targets are certain ports, rail and transportation centers, materiel storage sites, and other types of major military and industrial targets where self-sustained burning is optimal for target destruction.

4. (U) Although CEMs provide some incendiary effects, they are not as effective against many targets where high intensity and self-sustained burning is necessary for target destruction. Pure incendiaries are the most effective weapon for this purpose. The use of alternative weapons against such targets would require more sorties and more resources and increase the risk of aircraft and personnel attrition.

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5. (C) Moreover, the use of alternative weapons would not necessarily reduce the risk of collateral damage to the civilian population. No evidence has been offered at the UN Conference on Certain Conventional Weapons or in the course of the DOD study that air-delivered pure incendiary weapons cause greater collateral injury than alternative munitions. In fact, the DOD study identifies situations where the use of such weapons could reduce collateral damage. US commanders are already obligated under international law to take every step that is feasible in the choice of means and methods of attack to minimize the danger to the civilian population. For reasons of military utility, the United States should retain the option to use air-delivered pure incendiary weapons when they are the most effective weapon for the task and their use does not threaten the civilian population to a greater degree than other weapons.

6. (C) The available military studies and analyses of interdiction and strategic bombing from previous wars support these judgments. The DOD study on incendiary weapons provides this information, and it would have been logical for that study to have concluded that the United States should retain this option. The study, however, concludes erroneously that accepting a ban on the use of air-delivered pure incendiary weapons within areas containing civilian noncombatants would be militarily acceptable as implied by the current and projected levels of stocks and the absence of R&D on pure incendiary weapons. These logistic factors, however, do not mean that air-delivered pure incendiary weapons have lost their military utility now or in the event of future conflict. Recognizing that there are a wide range of potential scenarios for future wars and that US responsibilities are global, the United States should maintain the option to use these weapons against high-value targets, given their unique characteristics and military utility.

7. (C) The Joint Chiefs of Staff do not find any compelling justification for accepting the proposed prohibition. They are not persuaded that a concession by the United States to accept this prohibition would be the catalyst for concluding an agreement on incendiary weapons or that failure of the United States to make this concession would cause the conference to founder. There are several other important and highly contentious issues that are not likely to be resolved at the next session of the conference in September 1980. There is also the possibility that the conference participants will conclude a treaty where agreement is possible and defer the incendiary issue to a later conference.

8. (C) The Joint Chiefs of Staff note that this is the second request to modify the US negotiating position to accept broader restrictions on the use of air-delivered incendiary weapons. In December 1978, the Department of Defense was asked to accept a prohibition on the use of air-delivered flame weapons (napalm) within areas containing civilian noncombatants (concentrations of civilians). The US negotiating position at that time, supported

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by the OJCS, was to retain the option to use incendiary weapons, including air-delivered napalm, in situations where incidental injury to civilian noncombatants would not be disproportionate to the distinct military advantage to be gained from use of the weapons. This position was and continues to be consistent with existing international law. After considering what is essentially the same argument for this new request, the OJCS reluctantly accepted*** the prohibition on flare weapons with the understanding that NATO would support the new US position and that there would be no further demands for broader prohibitions.

9. (S) The Joint Chiefs of Staff believe the proposal* to accept a prohibition on the use of air-delivered pure incendiary weapons within concentrations of civilians does not satisfy the requirements of PD/NSC-50, which requires any significant modification of the present US negotiating position on arms control negotiations to be fully supportive of US national security interests. Lacking compelling rationale to the contrary, they believe that retention of the option to use air-delivered pure incendiary weapons in the circumstances described is in the national security interests.

10. (S) The Joint Chiefs of Staff recommend that the Ambassador be advised that a prohibition on the use of air-delivered incendiary weapons against military targets located within a concentration of civilians continues to be militarily unacceptable.

For the Joint Chiefs of Staff:

Harold D. Neeley

HAROLD D. NEELEY
Colonel, USAF
Secretary

References:
* Memorandum by the Acting Deputy Under Secretary of Defense (Policy Planning), I-23038/80, 12 August 1980, "DOD Study on Incendiary Weapons; Request for Final Coordination"
** MJCS 348-78, 2 January 1979, "UN Conference on Certain Conventional Weapons--Netherlands Proposal on Incendiaries (U)"
*** MJCS 48-79, 7 February 1979, "UN Conference on Certain Conventional Weapons--Netherlands Proposal on Incendiaries (U)"

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In reply refer to
I-09731/81

MEMORANDUM FOR THE SECRETARY OF DEFENSE

SUBJECT: U.S. Position on Incendiary Weapons at the UN Conference on Conventional Weapons (CCW) -- DECISION MEMORANDUM

(U) The purpose of this memorandum is to obtain your approval for a change in the current U.S. position on incendiary weapons at the second session of the UN Conference of Conventional Weapons (CCW) scheduled to begin on 15 September 1980 in Geneva.

(U) The Diplomatic Conference on International Humanitarian Law, which met in Geneva in 1974-77, recommended a conference be convened not later than 1979 with a view to reaching agreement on prohibitions or restrictions on the use of specific conventional weapons including those which may be deemed to be excessively injurious or have indiscriminate effects, taking into account humanitarian and military considerations. The 32d United Nations General Assembly adopted a resolution in December, 1977 calling for the UN to sponsor such a conference. The first session of the UN CCW was held last year. Restrictions on use have been considered for incendiaries (including napalm), land mines and booby traps, and small caliber projectiles. Agreement has about been reached in the areas of weapons with fragments not detectable by x-ray and land mines and booby traps. Conference members have agreed not to further address small caliber weapons.

(S) Ambassador George Aldrich, the head of the U.S. delegation to the CCW, asked us (Enclosure 1) to study the military costs of prohibiting the use of air-delivered incendiary weapons in the limited circumstances set forth by the Conference, i.e., against military objectives located within concentrations of civilians. This study has been completed and is at Enclosure 2.

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The study data suggests that there are certain targets for which the use of pure incendiaries (i.e., those weapons designed for the single purpose of destroying a target by fire) would be the weapon of choice. The data also shows, however, that there are very limited inventories of such weapons and that the Services are not planning to acquire or develop new ones. It does not appear that fiscal restraint has been the principal cause of those individual Service decisions.

The study also addressed the question of whether and to what extent munitions which have both a high explosive and incendiary effect should or would be likely to be interpreted as falling within the proposed prohibition. In the historical record of UN and other multilateral negotiations on incendiary weapons, such "combined effects munitions" (CEMs) have been explicitly excluded from the definition of incendiaries. The U.S. is increasing its reliance on CEMs and future generations of CEMs may have an even greater incendiary component. CEMs must be clearly excluded from any use prohibition to which we might accede in the CCW.

(c. I recommend that we accept the prohibition on the use of air-delivered pure incendiary weapons against military objectives located within concentrations of civilians. Acceptance would not entail significant degradation of U.S. military capabilities. From a political perspective at the CCW, the U.S. would avoid bearing the onus of responsibility for a failed Conference and could disadvantage the Soviets.

The Joint Staff has non-concurred, arguing that the proposed restriction is militarily unacceptable (Enclosure 3). We are unpersuaded by their memorandum for several reasons: the U.S. has not maintained a capability to exercise this particular military option (as indicated by minimal inventory, lack of R&D and absence of future plans to acquire the weapons); we are placing reliance on CEMs for most missions; indeed, future generations of CEMs are likely to have a greater incendiary capability than they do at present, thus increasing their effectiveness against incendiary bomb targets. (As noted in the DOD study at Enclosure 2, an OJCS study (JCSM-45-75, dated 31 January 1975)stated that incendiary bombs "have diminished in importance due to structural improvements in what were once good incendiary targets (warehouses, factories, depots, etc.) and due to improvements in other weapons. Secondary incendiary effects have been added to cluster fragmentation bombs for use on incendiary targets which remain lucrative (motor vehicles, POL dumps, etc.). International restrictions on use of bombs whose primary effects are incendiary would have little effect

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on the U.S. inventory but might circumscribe future research and development unnecessarily)." (Emphasis added). The weapons under consideration at the CCW for possible restriction or use are only those weapons whose primary effects are incendiary.

According to the Joint Staff memorandum, the Joint Chiefs of Staff "do not find any compelling justification for accepting the proposed prohibition." (We assume they mean non-military as well as military justification.) On this point, however, we agree with the judgement of State that -- given the limited military rationale for objecting to the prohibition -- the non-military rationale for accepting it should be considered compelling. That rationale includes the following judgements:

-- Our acceptance of the prohibition may publicly isolate the Soviets who have substantial inventories of non-flame incendiaries designed for air-delivery (and have apparently been using them against concentrations of civilians in Afghanistan). The Soviets privately informed our delegation at the last session of the CCW that this is a military option which they wish to retain; at the same time, they have been able to appear virtuous and conciliatory by reason of their stated willingness to accept far-reaching prohibitions on the use of napalm.

-- The U.S. is presently at a substantial disadvantage at the Conference because of the limitations in its current incendiaries position. The U.S. is virtually isolated in refusing to consider any restrictions (even cosmetic ones) of the use of incendiaries outside populated areas, and it has become very difficult to defend this position in the absence of any further movement on our part concerning the use of incendiary weapons within concentrations of civilians.

-- It is unlikely that the Conference could accept any agreement which goes only so far on incendiaries as our present position; it is much more likely that the Conference would proceed to a third session (with the specific aim of putting maximum pressure on us to yield on incendiaries), which could easily result in the reopening of issues (such as fuel air explosives and small-caliber projectiles) which we have thus far kept under control.

-- If the CCW ends unsuccessfully and failure is attributed to our position on incendiaries, we would be significantly criticized, particularly in view of the common association of napalm with our actions in Vietnam and of non-flame incendiaries with our WW II attacks on German and Japanese cities.

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-- On the other hand, we believe the U.S. position would improve dramatically if we were able to take this further step on incendiary weapons. This would be favored by such allies as the U.K. and FRG and would go far toward ensuring allied solidarity at the Conference. The Swedes (a key delegation, and the primary proponent in the past of weapons restrictions) have indicated, in a recent demarche to ASD(Public Affairs) Ross, that they could accept this degree of U.S. movement as the basis for agreement at the Conference. They also believe that other neutral and non-aligned delegations could do likewise.

Of course, the question of political implications must be put in perspective. This Conference is far from the most important forum for either US-Soviet or US-Allied/Third World relations. For us, the most negative outcome probably would be a Conference which failed to conclude its business only because of the U.S. stand on this one issue. While that outcome is not devastating, it would be much preferable to avoid it. At least, if the U.S. is to conclude that we cannot compromise further on circumstances for use of incendiaries, we ought to go in with a very sound case on the question of military necessity. I do not think such a case has been developed.

RECOMMENDATION: I recommend that you authorize us to inform State that (1) DOD poses no objection to new stance of "ib prohibition, and (2) DOD does require that, at the CCW, combine effects munitions (CEMs) be accorded full protection [illegible] restrictions and prohibitions.

R. N. Komer

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DISAPPROVED _____

OTHER _____

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See Coordination Tab
Under Secretary of Defense
(Research and Engineering)

See Coordination Tab
General Counsel, DOD

See Coordination Tab
Assistant Secretary of Defense
(Program Analysis and Evaluation)

Enclosures: as stated
1 Ambassador Aldrich letter
2 DOD response to Aldrich letter
3 JCS non-concurrence

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THE UNDER SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

POLICY

1 OCT 1980

In reply refer to:
I-09739/80

Honorable George H. Aldrich
Ambassador and Deputy Special
Representative of the President
for Law of the Sea Conference
Department of State
Washington, D.C. 20520

Dear George:

~~(C)~~ In response to your request, the Department of Defense has reviewed the military need for the use of air-delivered incendiary munitions, other than flame weapons, against military objectives located within concentrations of civilians as those terms have been defined, thus far, at the UN Conference on Conventional Weapons (CCW). There are some targets for which such munitions might be the weapon of choice and any restriction on their use could, therefore, entail some reduction of operational flexibility. The Secretary believes, however, that the military impact of any such reduction would be minimal and would to a very large degree be offset by the use of alternative munitions which will be more widely available. Given that judgement, the Secretary believes that political and foreign policy considerations should be considered compelling. Accordingly, the Department of Defense poses no objection to U.S. acceptance of the proposed prohibition.

~~(C)~~ There is, however, a continuing military requirement for air-delivered munitions with some kind of incendiary capability. Targets against which weapons of this nature would be the weapon of choice include major military and industrial targets located within or near populated areas. All available indications suggest that air-delivered weapons which combine incendiary effects with blast, penetration and fragmentation effects (combined effects munitions-CEMS) will be an increasingly important element of future U.S. military capabilities. Prohibitions or restrictions on use of this class of weapons, beyond those currently imposed by international law, would be unacceptable from a military standpoint. Therefore, our willingness to accept the proposed restriction on use of air-delivered pure incendiaries is contingent upon adequate protection of CEMs.

~~(C)~~ It appears to us that it will be necessary to reinforce the understanding (developed with the years) that CEMs are not included in the UN CCW definition of incendiaries and to develop a solid record

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to that effect. In that regard, we believe paragraph 3b of the proposed prohibition, which is the exclusionary clause applicable to CEMs, should be expanded to guarantee the exclusion of the types of CEMs we anticipate in the future U.S. inventory. An unequivocal determination of the "principal" or "primary" effect of a munition designed to produce a combination of effects is not always possible to establish. In many cases, for example, the "principal" or "secondary" character of a munition's incendiary effect is more dependent upon the composition of the target struck than upon the munition's design or its volume of incendiary generating component. Thus, to protect CEMs the exclusionary clause should be generalized to encompass combinations of effects and to eliminate the current "principal" and "secondary" distinctions.

Walter P. Slocombe

Deputy Under Secretary of Defense
(Policy Planning)

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SUBJECT US Position re Sandmine Recording

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AGENCY	INDIVIDUAL'S NAME	OFFICE	ROOM NBR	PHONE NBR
STATE	Mr Mike Matheson	PM/L	6929	632 7115
NCDA	Mrs Marie Mazzeo	GC	5534	632 0657

REMARKS:

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