



RESEARCH AND  
ENGINEERING

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20301

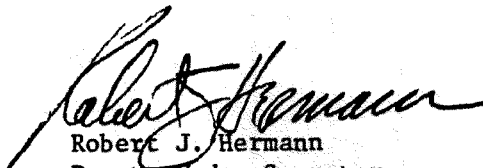
NOV 1 1977

MEMORANDUM FOR DISTRIBUTION (LIST ATTACHED)

SUBJECT: NAVSTAR DSARC IB Guidance

Page determined to be Unclassified  
Reviewed Chief, RDD, WHS  
IAW EO 13526, Section 3.5  
Date: APR 07 2014

Attached is proposed guidance resulting from subject DSARC. It will be included with the approval of the revised Decision Coordinating Paper following your coordination. My point of contact in this matter is Col. Emmett DeAvies, Office of the Director, Combat Support, Room 3E 1081, extension 57181. Request your coordination by 11 November 1977.

  
Robert J. Hermann  
Deputy Under Secretary  
(Communications, Command,  
Control & Intelligence)

Attachments

Office of the Secretary of Defense  
Chief, RDD, ESD, WHS  
Date: 07 APRIL 2014 Authority: EO 13526  
Declassify: X Deny in Full: \_\_\_\_\_  
Declassify in Part: \_\_\_\_\_  
Reason: \_\_\_\_\_  
MDR: 13 -M- 4708

13-M-4708

NAVSTAR GPS  
DCP 133

Page determined to be Unclassified  
Reviewed Chief, RDD, WHS  
IAW EO 13526, Section 3.5  
Date:

**APR 07 2014**

**APPROVAL:**

Alternative II, as described, is approved subject to the following additional guidance:

- (1) Program management constraints are as established in the DCP. Expectations of excesses will be reviewed as provided for in DOD Directive 5000.1, paragraph 4.P. In addition, if it appears that the schedule may cause the Milestone II decision point to occur beyond FY 1979, the Air Force should notify the Defense Acquisition Executive of the situation with a recommendation regarding the need for a review.
- (2) The Air Force, as Executive Agency, should establish objectives to accomplish a demonstration of the feasibility of NAVSTAR GPS to support tactical midcourse guidance. Activities should be paced to accomplish the objectives by Milestone II. The Air Force should provide a revised Program Memorandum by 30 November 1977 and a Test and Evaluation Master Plan (TEMP) for Tactical Midcourse Guidance Program by 1 May 1978. The TEMP should describe the critical technical issues to be resolved for Milestone II.
- (3) Planning and tests related to secondary payloads may continue. No actions should be taken which would commit the Phase II satellites to accommodate secondary payloads. A plan to accommodate such payloads, to include priorities and impact, should be submitted to the Acquisition Executive by 1 June 1978. Decisions regarding such payloads will be made at Milestone II.
- (4) The revised development and acquisition strategy regarding the delay of the low cost Z set prototyping, the pre-design of user equipment efforts and development of improved satellite payload components should enhance continuity into full-scale engineering development, assuming approval. The Air Force should work with the OSD Comptroller to convert procurement to RDT&E funding as a result of deleting the operational capability in Phase II.
- (5) In light of the GAO recommendation and the current visibility of the program, action will be taken to designate the program in the Selected Acquisition Reporting (SAR) structure.
- (6) DOD should take a more active role in establishing NAVSTAR as a NATO initiative. The policy set forth in the DCP supplements current activities in the NATO working groups to establish a plan for NATO involvement and representatives in the Joint Program Office. Additional high-level visibility will be necessary to establish an aggressive policy for U. S. pre-eminence.

(7) There is a recognized responsibility of DOD to establish a clear-cut phase-in, phase-out policy for systems, equipment, and development efforts associated with navigation and position location. It will be necessary to review requirements for NAVSTAR GPS and specific plans for phase-ins and phase-outs as a part of the Milestone II decision. The Office of the Joint Chiefs of Staff, in cooperation with the Office of Director of Defense Research and Engineering, should develop a plan which assumes the successful deployment of NAVSTAR GPS and the phase-out or phase-down of systems. The plan should be supplemented by a schedule of discontinuances of development activities and procurements. The plan should be submitted to the Acquisition Executive by 1 July 1978, subsequent to the submission of Service FY 1980 POMs and for use in making budget decisions.

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Date: APR 07 2014

DISTRIBUTION

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ADVISOR TO SECDEF FOR NATO AFFAIRS

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DEPUTY UNDER SECRETARY (S&SS)

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Date: APR 07 2014



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20301

COMPTROLLER  
(Program/Budget)

NOV 11 1977

MEMORANDUM FOR COL. DeAVIES, OAD(CS)

SUBJECT: NAVSTAR GPS

Paragraph 7 of the proposed guidance calls for a phase-out or phase-down plan for other navigation systems, equipment, and development based on a successful deployment of NAVSTAR. The requested date for the plan is July 1, 1978. We feel that the plan should be submitted by May 1, 1978, so that it can be reflected in the FY 1980 POM review. The CY 1984 IOC for NAVSTAR argues for specific consideration in the FY 1980 PDM.

The guidance should also include specific language which would insure that no engineering development effort is initiated prior to DSARC II approval.

Subject to the above changes, we will forward the subject guidance letter to Mr. Wacker for coordination.

David J. Hessler  
Director for Research and Development

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Reviewed Chief, RDD, WHS  
IAW EO 13526, Section 3.5  
Date:

APR 07 2014

*090*  
*Dep Under Sec (C31)*INTERNATIONAL  
SECURITY AFFAIRSASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20301

9 NOV 1977

In reply refer to:  
I-12967/77MEMORANDUM FOR THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH  
AND ENGINEERING (C31)

SUBJECT: NAVSTAR DSARC IB Guidance

I have reviewed your proposed NAVSTAR guidance and recommend the point (6) be revised as shown below:

(6) The Air Force as Executive Agency should pursue a more active program to encourage adoption of NAVSTAR by our NATO allies. This program should be implemented in conjunction with the efforts underway in NATO working groups to establish a plan for NATO involvement and representation in the Joint Program Office. The Program Manager should recommend appropriate high level DOD interventions which might be necessary to give NAVSTAR the required emphasis with our NATO allies.

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IAW EO 13526, Section 3.5  
Date: APR 07 2014

*Jm*JAMES V. SIENA  
Deputy Assistant Secretary  
European and NATO Affairs

## DISTRIBUTION

1-E

2-RC

4-ED (Chron) (Cmbk) (Stybk) (Drafter)

cc: Amb Komer

## PREPARED BY:

LTC J. McCarthy, OASD/ISA/ED/NATO SID,  
4B677, X79845, nab, 10 Nov 77



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301

MANPOWER,  
RESERVE AFFAIRS  
AND LOGISTICS

14 NOV 1977

MEMORANDUM FOR Col. E. DeAvies

SUBJECT: NAVSTAR DSARC IB Guidance dated 1 Nov 1977

The approach to logistics tradeoff studies was discussed at the NAVSTAR DSARC IB. Please incorporate the following as item 8 of the proposed guidance.

(8) The results of your tradeoff studies on equipment standardization, commonality and economic repair concept should be reviewed with OSD(MRA&L) at their completion. The studies should examine the major alternative of consolidated depot level repair of like equipments for all the Services.

Russell R. Shorey  
Director  
Acquisition and Support Planning

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Reviewed Chief, RDD, WHS  
IAW EO 13526, Section 3.5  
Date: APR 07 2014



DEFENSE MAPPING AGENCY  
BUILDING 56, U.S. NAVAL OBSERVATORY  
WASHINGTON, D.C. 20305

11 NOV 1977

MEMORANDUM FOR THE PRINCIPAL DEPUTY UNDER SECRETARY OF DEFENSE  
FOR RESEARCH AND ENGINEERING

SUBJECT: NAVSTAR DSARC IB Guidance

Reference: Your memorandum dated 1 November 1977, subject as above.

Defense Mapping Agency (DMA) basically concurs with Alternative II of the DCP 133 and the additional guidance provided. However, we would recommend the establishment of a single agency focal point for civilian applications. The focal point should evaluate and consolidate the interest of Department of Transportation (DOT), Department of Commerce (DOC), Maritime Administration, Department of the Interior (DOI), and National Aeronautics and Space Administration (NASA).

ABNER B. MARTIN  
Lieutenant General, USAF  
Director

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Reviewed Chief, RDD, WHS  
IAW EO 13526, Section 3.5  
Date: APR 07 2014







OFFICE OF THE SECRETARY OF DEFENSE  
WASHINGTON, D. C. 20301

November 11, 1977

MEMORANDUM FOR MR. HERMANN, DEPUTY UNDER SECRETARY (COMMUNICATIONS,  
COMMAND, CONTROL & INTELLIGENCE)

SUBJECT: NAVSTAR DSARC IB Guidance

Reference: Your letter, same subject, November 1, 1977

We concur with the draft additional guidance for DCP 133.

We believe, however, that item numbers (6) and (7) would be facilitated by providing guidance related to the civil use of NAVSTAR. In lieu of this guidance, the resource displays in the phase-out/phase-down plan must show continued operating costs of navigation systems used jointly with the civilian sector.

Milton A. Margolis  
Chairman  
OSD Cost Analysis Improvement Group

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Reviewed Chief, RDD, WHS  
IAW EO 13526, Section 3.5  
Date: APR 07 2014





RESEARCH AND  
ENGINEERING

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20301

NOV 11 1977

MEMORANDUM FOR PRINCIPAL DEPUTY ASSISTANT SECRETARY OF DEFENSE  
FOR COMMUNICATIONS COMMAND CONTROL AND  
INTELLIGENCE

SUBJECT: NAVSTAR IB Guidance

The Deputy Under Secretary of Defense for Research and Engineering  
(Test and Evaluation), DUSDR&E(T&E), has no comments on referenced  
proposed NAVSTAR IB guidance memorandum.

A handwritten signature in cursive script, reading "Charles E. Graves", is positioned above the typed name.

CHARLES E. GRAVES  
Brigadier General, USA  
Acting Deputy Under Secretary  
of Defense for Research and  
Engineering (Test and  
Evaluation)

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Reviewed Chief, RDD, WHS  
IAW EO 13526, Section 3.5  
Date: APR 07 2014



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


THE JOINT STAFF

J3M 2283 1977  
14 NOV 1977

MEMORANDUM FOR THE DEPUTY UNDER SECRETARY OF DEFENSE FOR  
RESEARCH AND ENGINEERING (COMMUNICATIONS,  
COMMAND, CONTROL, AND INTELLIGENCE)

Subject: NAVSTAR DSARC IB Guidance

1. Reference your memorandum, 1 November 1977, subject as above, which requested coordination on the guidance resulting from the subject DSARC.
2. The proposed guidance is concurred in subject to the comments contained in the Enclosure. The subparagraphs indicated are consistent with those contained in the attachment to your memorandum.

  
C. L. LeVAN  
Lieutenant General, USA  
Director for Operations

Attachment  
a/s

Page determined to be Unclassified  
Reviewed Chief, RDD, WHS  
IAW EO 13526, Section 3.5  
Date: APR 07 2014

·OJCS COMMENTS ON PROPOSED NAVSTAR DSARC IB GUIDANCE

1. Subparagraph (3). The decision timeframe for secondary payloads for the NAVSTAR GPS satellites is not congruent with current ongoing efforts to make the NAVSTAR GPS a national system. In response to a 5 November 1976 query from the Office of Telecommunications Policy, letters of 19 November 1976 and 26 April 1977 from the DDR&E inferred use of the coarse/acquisition signal of the NAVSTAR GPS by the civil sector. As noted in the DSARC IB review of 4 October 1977, it now may be necessary to deny both the precise and coarse/acquisition signals to the civil sector. To compensate for this action, a Spartan package--one of the three possible secondary payloads--is proposed to satisfy the navigation requirements of the civil sector. On 26 October 1977, ODDR&E circulated for review and comment a proposed "Federal Radio Navigation Systems Plan." This plan also proposes the NAVSTAR GPS as a national system. The Plan is aligned basically with the earlier responses of DDR&E, above, and calls for adoption of the Plan well in advance of Milestone II, at which time a decision on the secondary payload is planned. If the NAVSTAR GPS is to be a national system, and if the coarse/acquisition signal also is to be denied, then these decisions not only will drive the denial techniques to be incorporated but also the decision on inclusion of the Spartan package. It is not expected that a decision on the Spartan can be delayed until the February-March 1979 timeframe, the Milestone II review period.

2. Subparagraph (6). OJCS cannot concur in the policy set forth in Annex J of the second revision of the Decision Coordinating Paper (DCP) proposed by the US Air Force for adoption. The original policy was concurred in by the Joint Chiefs of Staff, in a memorandum to the Secretary of Defense, JCSM 43-76, 11 February 1976, "Positioning and Navigation Systems." Therefore, any proposed changes to this policy also must be considered by the Joint Chiefs

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Reviewed Chief, RDD, WHS  
IAW EO 13626, Section 3.6  
Date: APR 07 2014

Enclosure

of Staff: action is underway to effect this consideration. It should be noted that the OJCS has not formally received the second revision to the DCP for coordination. Therefore, the position stated in DJSM 1740-77, 11 October 1977, "NAVSTAR GPS Decision Coordinating Paper (DCP) No. 133," still applies. It is understood that a formal request for coordination will be forthcoming from the US Air Force in the near future.

3. Subparagraph (7). It is recommended that the requirements of this subparagraph be reviewed in relation to the current effort to institute the "Federal Radio Navigation Systems Plan" distributed by ODDR&E on 26 October 1977. The tasks and time-frames should be as consistent as possible.

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IAW EO 13526, Section 3.5  
Date: APR 07 2014

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WASHINGTON, D.C. 20301

3 NOV 1977

MEMORANDUM FOR DR. HERMANN

SUBJECT: NAVSTAR

*Bale*DECLASSIFIED IN FULL  
Authority: EO 13526  
Chief, Records & Declass Div, WHS  
Date:

APR 07 2014

(U) The "proposed guidance" to be included in the DCP does not cover action necessary to resolve the most critical issues in this program before DSARC II. The central question is whether or not the projected capabilities of the system justify the expenditure of \$4 to \$5B (CAIG estimate). Consider the following:

1. (U) The return on investment depends on the assumed number of users. There is no firmly established number because no user has made a firm commitment. Each user group so far has said in effect that he may want to use the system if a) someone else pays for the satellites, b) the user equipment cost is acceptable, and c) it meets his performance requirements as well as or better than alternatives. The cost per user for about 25,000 users (a very optimistic number) is \$175,000 to \$210,000, based on CAIG estimates presented to the DSARC. For 10,000 users (this could still be optimistic), the cost per user increases to the range of \$300,000 to \$435,000.
2. (U) The requirements for future navigation systems is a key issue. It centers about the question as to whether continuous, worldwide, three-dimensional, passive, 50 foot-error navigation means five individual goals or five needs, all required simultaneously. While not disputing the desirability of such features, I question the NAVSTAR approach of planning to simultaneously satisfy those requirements. Does a weapon system such as a strategic bomber or a ship really need to travel from a base to a weapon release point with a navigation accuracy of 50 feet all the way or can it use coarse positioning until within 1000 miles or 10 miles from the target?

~~CONFIDENTIAL~~  
~~EXEMPTED FROM AUTOMATIC DECLASSIFICATION~~  
~~AT THE DISCRETION OF THE SECRETARY OF DEFENSE~~

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

2

3. (U) Local grid systems may be adequate for all anticipated tactical missions. Further, such systems are now under development that satisfy the specific tactical needs (including communications, IFF, and weapons guidance of each of the Services. These grid systems adequately serve an area of a few tens of thousands of square miles with continuous, high accuracy, passive or active navigation. They do need to be related to each other, possible through a common mapping grid system, but this can be done on an infrequent basis with TRANSIT or TIMATION systems. Hence, it seems that the full NAVSTAR system may be extravagant and unnecessary.

4. (U) User platforms that must penetrate enemy territory can be jammed easily. To counter the jammer, those users might employ an inertial system backup but the accuracy would be degraded significantly and, of course, the cost goes up. Because of the accuracy degradation, terminal homing would be necessary against many targets. This renders midcourse missile guidance (e.g., Pershing, Cruise, Aircraft Stand-off missile) especially dubious compared to other options for guidance.

(U) I think these issues have to be dealt with no later than DSARC II, but the sooner the better. If we don't critically examine the cost effectiveness of this program, Congress will do it for us and with the present weak rationale, I predict it will be killed. The following actions are appropriate:

1. (U) The Services should be asked to review and resubmit their requirements, including performance, number of units, and supporting rationale.

2. (U) OSD should conduct an independent, critical review of these requirements.

3. (U) A cost effectiveness analysis should be done under OSD guidance to compare NAVSTAR with alternatives available in the same timeframe or earlier.

4. (U) A DSB panel might be appropriate for overall independent evaluation and recommendations.

*Bob*

Robert A. Moore  
Deputy Under Secretary  
(Tactical Warfare Programs)

cc: Dr. Perry  
Dr. Dinneen  
Mr. Greinke

~~CONFIDENTIAL~~

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Authority: EO 13526  
Chief, Records & Declass Div, WHS  
Date:

APR 07 2014



RESEARCH AND  
ENGINEERING

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20301

14 NOV 1977

MEMORANDUM FOR DIRECTOR, COMBAT SUPPORT

SUBJECT: NAVSTAR DSARC IB Guidance

The following comments are provided relevant to your memo dated 1 November 1977:

Paragraph (3): The second sentence should be expanded to read as follows: "No action should be taken at this time which would commit or preclude Phase II satellites from accommodating secondary payloads."

Paragraph (7): The plan should include, and be very specific, with respect to system survivability in a trans and post-attack environment. It should consider the space segment as well as the downlink, and include jamming, encryption, and blackout considerations. The plan should also address the survivability of a single system concept without supporting alternatives such as we have in strategic and tactical warning.

A handwritten signature in cursive script, reading "Ross N. Williams", is positioned above the typed name.

Ross N. Williams  
Acting Deputy Under Secretary  
of Defense for Research and  
Engineering  
(Strategic and Space Systems)

Page determined to be Unclassified  
Reviewed Chief, RDD, WHS  
IAW EO 13526, Section 3.5  
Date: APR 07 2014



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209-NAVSTAR



RESEARCH AND  
ENGINEERING

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20301

3 NOV 1977

MEMORANDUM FOR DR. HERMANN

SUBJECT: NAVSTAR

*Bole*

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Authority: EO 13526

Chief, Records & Declass Div, WHS

Date: APR 07 2014

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EXCLUDED FROM AUTOMATIC DECLASSIFICATION OF  
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AT THE TIME OF DECLASSIFICATION

~~CONFIDENTIAL~~

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2

3. (U) Local grid systems may be adequate for all anticipated tactical missions. Further, such systems are now under development that satisfy the specific tactical needs (including communications, IFF, and weapons guidance of each of the Services. These grid systems adequately serve an area of a few tens of thousands of square miles with continuous, high accuracy, passive or active navigation. They do need to be related to each other, possible through a common mapping grid system, but this can be done on an infrequent basis with TRANSIT or TIMATION systems. Hence, it seems that the full NAVSTAR system may be extravagant and unnecessary.

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3. (U) A cost effectiveness analysis should be done under OSD guidance to compare NAVSTAR with alternatives available in the same timeframe or earlier.

4. (U) A DSB panel might be appropriate for overall independent evaluation and recommendations.

*Bob*

Robert A. Moore  
Deputy Under Secretary  
(Tactical Warfare Programs)

cc: Dr. Perry  
Dr. Dinneen  
Mr. Greinke

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