

99TH CONGRESS
1ST SESSION

H. R. 3898

Entitled the: "Military Whistleblowers Protection Act".

IN THE HOUSE OF REPRESENTATIVES

DECEMBER 11, 1985

Mrs. BOXER (for herself, Mr. BRYANT, Mr. MILLER of California, Mr. SIKORSKI, Mr. FAZIO, Mrs. SCHROEDER, Mr. BOSCO, Mr. COELHO, Mr. LEVINE of California, and Mr. BATES) introduced the following bill; which was referred to the Committee on Armed Services

A BILL

Entitled the: "Military Whistleblowers Protection Act".

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 SECTION 1. SHORT TITLE.

4 This Act may be cited as the "Military Whistle Blowers
5 Protection Act".

6 SEC. 2. PROHIBITION OF REPRISALS FOR COMMUNICATIONS 7 WITH MEMBERS OF CONGRESS.

8 (a) REPRISALS PROHIBITED.—Section 1034 of title 10,
9 United States Code, is amended—

10 (1) by inserting "(a)" before "No person"; and

11 (2) by adding at the end thereof the following:

1 “(b)(1) Any civilian officer or employee, and any
2 member of the armed forces, who has authority to take,
3 direct others to take, recommend, or approve any personnel
4 action with respect to a member of the armed forces shall
5 not, with respect to such authority, take or threaten to take
6 any action against a member of an armed force as a reprisal
7 for making a complaint or disclosing information to a Member
8 of Congress which the member of the armed forces reason-
9 ably believes evidences—

10 “(A) a violation of any law, rule, or regulation; or

11 “(B) mismanagement, a waste of funds, an abuse
12 of authority, or a substantial and specific danger to
13 public health or safety.

14 “(2) In this subsection, ‘personnel action’, with respect
15 to a member of the armed forces, means—

16 “(A) a promotion;

17 “(B) a disciplinary or corrective action;

18 “(C) a detail, transfer, or reassignment;

19 “(D) a decision concerning pay, benefits, or
20 awards or concerning education or training if the edu-
21 cation or training may reasonably be expected to lead
22 to a promotion or other action described in this para-
23 graph; and

1 “(E) any other significant change in duties or re-
2 sponsibilities that is inconsistent with the member’s
3 grade or qualifications.

4 “(c) The Secretary concerned shall prescribe regulations
5 to carry out this section.”.

6 (b) DEADLINE FOR REGULATIONS.—Regulations re-
7 quired by subsection (c) of section 1034 of title 10, United
8 States Code, shall be prescribed not later than 90 days after
9 the date of the enactment of this Act.

10 **SEC. 3. REMEDIES FOR PROHIBITED REPRISALS.**

11 (a) BOARD FOR CORRECTION OF MILITARY RECORDS
12 AND JUDICIAL REVIEW.—(1) Chapter 79 of title 10, United
13 States Code, is amended by adding at the end thereof the
14 following new section:

15 **“§ 1555. Review of certain personnel actions**

16 “(a)(1) A member of an armed force who believes that
17 he or she has been the victim of a reprisal prohibited by sec-
18 tion 1034(b) of this title or by section 7(c) of the Inspector
19 General Act of 1978 and who applies for corrective action to
20 a board established under section 1552 of this title shall be
21 granted an immediate hearing with respect to the claim pre-
22 sented in the application.

23 “(2) The Secretary concerned shall designate a judge
24 advocate to assist such member in preparing an application
25 and presenting a claim described in paragraph (1).

1 “(b)(1) A claim described in subsection (a)(1) shall be
2 decided as expeditiously as possible. The board shall make a
3 final decision with respect to the claim presented within six
4 months after the submission of the application.

5 “(2) If the claim is not finally decided within six months,
6 the claimant (notwithstanding the failure to exhaust adminis-
7 trative remedies) may bring a civil action, de novo, against
8 the United States, seeking the relief applied for under section
9 1552 of this title. Upon filing of the complaint in the appro-
10 priate court, the Secretary shall have no further authority
11 over the claim.

12 “(c)(1) If the board considering a claim described in sub-
13 section (a)(1) determines that there is reason to believe that a
14 civilian officer or employee or a member of the armed forces
15 has taken an action prohibited by section 1034(b) of this title
16 or by section 7(c) of the Inspector General Act of 1978, the
17 Board shall, upon the conclusion of its proceedings in the
18 matter, refer the record of the matter to the Secretary con-
19 cerned and (except in the case of the Coast Guard) to the
20 Inspector General of the Department of Defense.

21 “(2) The Inspector General shall investigate any matter
22 referred under paragraph (1) and shall submit a report of the
23 investigation, including recommendations for proposed action,
24 to the Secretary concerned. After considering such recom-
25 mendations, the Secretary shall take appropriate corrective

1 and disciplinary action, including the convening of a court
2 martial if the record indicates that such action is warranted.

3 “(3) At the time the Inspector General submits a report
4 under paragraph (2) to the Secretary concerned, the Inspec-
5 tor General shall submit a copy of the report to the Commit-
6 tees on Armed Services and on Government Operations of
7 the House of Representatives and to the Committees on
8 Armed Services and on Governmental Affairs of the Senate.

9 “(d) Upon a final decision by a board under section 1552
10 of this title of a claim described in subsection (a)(1), the
11 claimant may seek judicial review of the action complained of
12 to the board under the chapter 7 of title 5, notwithstanding
13 the last sentence of section 1552(a) of this title. Any such
14 review shall be tried de novo.”.

15 (2) The table of sections at the beginning of such chap-
16 ter is amended by adding at the end thereof the following
17 new item:

“1555. Review of certain personnel actions.”.

18 (b) EFFECTIVE DATE.—Section 1555 of title 10,
19 United States Code, as added by subsection (a), shall apply
20 with respect to personnel actions taken after the first day of
21 the three-year period ending on the date of the enactment of
22 this Act.

○

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**Congress of the United States
House of Representatives
Washington, D.C. 20515**

May 7, 1986

COMMITTEES:
BUDGET
INCOME SECURITY TASK FORCE
STATE AND LOCAL GOVERNMENT TASK FORCE
BUDGET PROCESS TASK FORCE
INTERIOR AND INSULAR AFFAIRS
SUBCOMMITTEE ON ENERGY AND ENVIRONMENT
SUBCOMMITTEE ON GENERAL OVERSIGHT, NORTHWEST
POWER AND FOREST MANAGEMENT
SUBCOMMITTEE ON NATIONAL PARKS AND RECREATION
VETERANS' AFFAIRS
MILITARY REFORM CAUCUS
CO-CHAIRMAN

COSPONSOR H.R. 4682, SGT. YORK PREVENTION ACT

Dear Colleague:

There are few of us who are not painfully aware of the fact that the United States government wasted \$1.8 billion in taxpayer dollars over the last eight years building the "Sgt. York" gun, a weapon that simply did not perform as advertised.

I am writing to invite you to cosponsor H.R. 4682, a bill designed to ensure that the weapons systems the Pentagon wishes to procure in the future are thoroughly tested prior to full-rate production decisions by the Defense Department.

Would the Sgt. York fiasco have occurred if H.R. 4682 was enacted a few years ago? The answer is no.

ITEM: The "Sgt. York" gun entered high-rate production long before a side-by-side test of the gun vs. the systems it was to replace was conducted. In fact, over 200 guns were authorized at \$7 million each prior to such a test being conducted.

The result of the side-by-side test? It was clearly shown that the Sgt. York was no better, and in some cases, clearly inferior to the systems it was designed to replace.

H.R. 4682 would ensure that prior to approval of full-rate production for a major new weapon system, a side-by-side test is conducted to compare the proposed new weapon system with either the system it is designed to replace, or with the nearest in-production competitor of the proposed new system. Such a test would directly compare equal cost quantities of each weapon system.

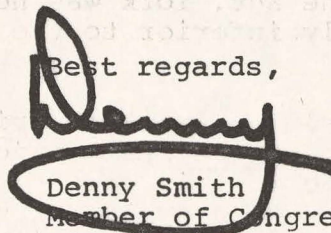
Other major provisions of H.R. 4682 include:

(over)

- *Ensures that major weapons systems procured during low-rate initial production may be used only for the purposes of operational test and evaluation until the completion of the side by side operational test made mandatory by enactment of this legislation.
- *Ensures that the test is conducted by members of the armed forces under genuine operational conditions by excluding participation of the system contractor in the design or execution of the test.
- *Ensures that the Secretary of Defense and Congress are advised, through the reports already required of the OT&E Director, of the adequacy and realism of the test so that they may confidently assess the combat suitability of the system.
- *Ensures that after receiving the OT&E Director's report, the Armed Services Committees have 30 days to examine and respond to a full-rate production decision by the Defense Department.
- *Ensures that the Secretary of Defense and the Congress receive as part of the report required of the OT&E Director, a detailed explanation of the points of disagreement between the DOT&E and the Secretary of the appropriate military department regarding the evaluation of a major new weapon system.
- *EFFECTIVE DATE: Would apply to major acquisition programs which, on the date of the enactment of the Act, have not yet proceeded beyond low-rate initial production. The provisions of this Act may be suspended by the President during a time of declared war.

Please call John in my office at X-55711 should you wish to cosponsor H.R. 4682 or should you need more information on the legislation.

Best regards,



Denny Smith
Member of Congress

OSD EXPLANATION OF RESTOWAGE OF WATER CANS FOR
BFV TESTS

The Bradley Fighting Vehicle stows its 25MM ammo rounds in boxes which are, in part, stowed around the inside wall of the crew compartment. In the Phase I test vehicle configuration, two five-gallon containers for water were stowed against the rear end of the side wall of the vehicle, inside the compartment. As a result of previous tests, the location of the water containers and ammo boxes were reconfigured for the Phase II testing. The location for the two five-gallon water containers was selected so as to replace ammo boxes, with the objective of relocating the ammo to a position further away from the aimpoint, the center of mass of the vehicle (i.e., the point at which an attacker would most likely aim, under the most common circumstances). This decision was an outgrowth of lessons learned in an earlier phase of testing, and was designed to reduce the vulnerability of the vehicle and its crew which, of course, is the whole point of the testing.

Col. Burton, who has cognizance over Bradley Vehicle live fire testing for OSD, informed his superior of the relocation shortly after the test began with the observation that it did not raise any significant issue or require any action by OSD.

99TH CONGRESS
2D SESSION

H. R. 4682

To amend title 10, United States Code, to strengthen the requirements relating to operational test and evaluation of major defense acquisition programs.

IN THE HOUSE OF REPRESENTATIVES

APRIL 23, 1986

Mr. DENNY SMITH introduced the following bill; which was referred to the Committee on Armed Services

A BILL

To amend title 10, United States Code, to strengthen the requirements relating to operational test and evaluation of major defense acquisition programs.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. REQUIREMENTS RELATING TO OPERATIONAL**
4 **TEST AND EVALUATION OF MAJOR DEFENSE**
5 **ACQUISITION PROGRAMS.**

6 **(a) OPERATIONAL TEST AND EVALUATION REQUIRE-**
7 **MENTS.—(1)(A) Chapter 139 of title 10, United States Code,**
8 **is amended by adding at the end the following new section:**

1 “§ 2364. Operational testing requirements: major defense
2 acquisition programs

3 “(a)(1) The Secretary of the military department con-
4 cerned shall conduct an independent operational test and
5 evaluation with respect to a major defense acquisition pro-
6 gram under which a major system is to be acquired.

7 “(2) An operational test and evaluation required by
8 paragraph (1) shall be conducted before the major defense
9 acquisition program may proceed into the production stage.

10 “(3) An operational test and evaluation is not independ-
11 ent for purposes of this subsection if any person employed by
12 the contractor for the system being tested is involved in any
13 stage of the operational test and evaluation.

14 “(b)(1) The operational test and evaluation required by
15 subsection (a) shall include a side-by-side test of the system
16 being acquired with equal-cost quantities of—

17 “(A) the system intended to be replaced (if the
18 system being acquired is intended to replace another
19 system); or

20 “(B) the nearest in-production competitor of the
21 system being acquired (if the system being acquired is
22 not intended to replace another system).

23 “(2) For purposes of the side-by-side test described in
24 paragraph (1)—

25 “(A) the cost of the system being acquired is the
26 projected program unit cost included in the most recent

1 Selected Acquisition Report with respect to that
2 system; and

3 “(B) the cost of the system intended to be re-
4 placed or the competitor system is the cost of acquiring
5 that system.

6 “(c) The Director of Operational Test and Evaluation
7 shall independently analyze the results of each operational
8 test and evaluation carried out under subsection (a). At the
9 conclusion of that operational test and evaluation, the Direc-
10 tor shall submit a report to the Secretary of Defense on that
11 analysis.

12 “(d) Each report under subsection (c) shall include an
13 analysis of whether the extent and realism of the test and
14 evaluation performed were adequate to assess confidently, in
15 comparison with the system intended to be replaced or the
16 competitor system, each of the following to the extent appro-
17 priate with respect to the particular item or component
18 tested:

19 “(1) The ability of the system to survive (with pri-
20 mary emphasis on crew casualties) when fired at in a
21 combat situation by weapons likely to be encountered
22 in such a situation.

23 “(2) The ability of military personnel of average
24 skill, operating under the stress of combat, to maintain
25 the system in an operational status.

1 “(3) The probability of system failure in a combat
2 situation under the maintenance conditions described in
3 paragraph (2).

4 “(4) The time required to transport the system in
5 a combat situation with no prior notice—

6 “(A) over strategic or intercontinental
7 distances;

8 “(B) over theater distances; and

9 “(C) over tactical or battlefield distances.

10 “(5) During transport of the system as described
11 in subparagraph (D), the effects on the time required
12 for that transport of—

13 “(A) terrain;

14 “(B) weather;

15 “(C) the need for supporting or escorting
16 vehicles;

17 “(D) fuel capacity; and

18 “(E) mechanical failures and necessary
19 repairs.

20 “(6) The maneuverability of the system in a
21 combat situation with respect to—

22 “(A) survival; and

23 “(B) firing advantage.

24 “(7) The effectiveness of the system against a
25 typical enemy combat unit in a combat situation.

1 “(e) Each report of the Director under subsection (c)
2 shall be submitted to the defense committees in precisely the
3 same form and with precisely the same content as the report
4 originally was submitted to the Secretary and shall be accom-
5 panied by such comments as the Secretary of Defense may
6 wish to make on such report.

7 “(f)(1) Operational testing of a major defense acquisition
8 program may not be conducted until the Director approves in
9 writing the adequacy of the plans (including the adequacy of
10 projected levels of funding) for operational test and evalua-
11 tion to be conducted in connection with that program.

12 “(2) The Secretary of Defense or the Secretary con-
13 cerned may enter into a contract for low-rate initial produc-
14 tion of a major defense acquisition program only for the pur-
15 pose of acquiring items to be used in operational test and
16 evaluation.

17 “(3) A final decision within the Department of Defense
18 to proceed with a major defense acquisition program beyond
19 low-rate initial production may not be made until the end of
20 the 30-day period beginning on the date that the defense
21 committees receive the report required under subsection (e).

22 “(g) The President may suspend the operation of any
23 provision of this section in time of a declared war.

24 “(h) In this section:

1 “(1) The term ‘defense committees’ has the mean-
2 ing given that term in section 2362(e)(3) of this title.

3 “(2) The term ‘major defense acquisition program’
4 means a program subject to the Selected Acquisition
5 Report requirements of section 139a of this title.

6 “(3) The term ‘major system’ has the meaning
7 given that term in section 2302(5) of this title.

8 “(4) The term ‘operational test and evaluation’
9 has the meaning given that term in section
10 136a(a)(2)(A) of this title.”.

11 (B) The table of sections at the beginning of such chap-
12 ter is amended by adding at the end the following new item:

“2364. Operational testing requirements: major defense acquisition programs.”.

13 (2) Section 136a of such title is amended—

14 (A) in subsection (a)(2)(A)—

15 (i) by inserting “by members of the armed
16 forces” after “field test,”;

17 (ii) by striking out “weapons” the first place
18 it appears and inserting in lieu thereof “a weapon
19 system”; and

20 (iii) by striking out “weapons” the second
21 place it appears and inserting in lieu thereof
22 “weapon system”;

23 (B) in subsection (b)—

24 (i) by adding “and” at the end of paragraph
25 (4);

1 (ii) by striking out paragraph (5); and

2 (iii) by redesignating paragraph (6) as para-
3 graph (5);

4 (C) by striking out subsection (c);

5 (D) by redesignating subsections (d) and (e) as
6 subsections (c) and (d), respectively;

7 (E) by striking out subsection (f);

8 (F) by redesignating subsection (g) as subsection
9 (e) and in that subsection striking out “such com-
10 ments” in the third sentence and inserting in lieu
11 thereof “a detailed explanation of the points of agree-
12 ment and disagreement between the Director and the
13 Secretary of the military department concerned with
14 respect to each evaluation conducted by the Secretary
15 during the preceding fiscal year and such other com-
16 ments”; and

17 (G) by redesignating subsection (h) as subsection
18 (f).

19 (b) EFFECTIVE DATE.—The amendments made by sub-
20 section (a) shall apply with respect to major defense acqui-
21 sition programs under which, on the date of the enactment of
22 this Act, the Secretary of Defense or the Secretary of the
23 military department concerned has not entered into a con-
24 tract to proceed beyond low-rate initial production.

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F A C T S H E E T

OBSERVATIONS ON AMRAAM CERTIFICATION ISSUES

BACKGROUND

The Advanced Medium Range Air-to-Air Missile (AMRAAM) is being developed jointly by the Air Force and Navy to meet their medium range air-to-air missile requirements for the 1989-2005 time frame. The missile is to be compatible with the services' latest fighter aircraft. As a follow-on to the Sparrow medium-range air-to-air missile, AMRAAM is intended to improve interceptor combat effectiveness.

AMRAAM is to operate both within and beyond visual range. Performance features that are to provide improvement over the Sparrow, include higher speed, greater range, increased maneuverability, all aspect lock-down shoot-down capability, better resistance to electronic countermeasures and an active terminal seeker. The active seeker and a track-while-scan radar aboard an aircraft provide the capability to simultaneously track multiple targets, launch multiple missiles and leave. The missile is also intended to be more reliable and maintainable than the Sparrow missile.

The AMRAAM development program includes the missile, launchers, aircraft interfaces, support equipment and aircraft modifications for AMRAAM testing. It does not include modifications to operational aircraft and eject and rail launchers that are to be developed by the JSPO and funded by the appropriate aircraft program offices.

The program is in full-scale development under a contract with Hughes Aircraft Company. Raytheon Company is being qualified as a second source producer for competition.

The AMRAAM Joint System Project Office (JSPO) procurement cost estimates have risen from about \$10.4 billion, in then year dollars, for 24,335 missiles in November 1982, to \$11.6 billion in December 1984. This increased unit cost estimates from \$428,000 to \$476,000 per missile.

In January 1985, the Secretary of Defense expressed concern about the AMRAAM program's progress and escalating costs and ordered a complete program review to determine if and how costs could be reduced. The Air Force subsequently restructured the full scale development phase and extended it from 54 to 79 months and delayed projected deployment to 1989.

To reduce program costs, a number of design and other changes were identified that could reduce production costs by an estimated \$2.0 billion for the combined Air Force and Navy buy. This reduced JSPO's AMRAAM estimate to \$9.6 billion for 24,335 missiles or \$393,000 per missile as of February 1986. This is also the basis for the \$5.2 billion estimate for 17,000 Air Force missiles.

Congressional concerns over the AMRAAM program led to the certification requirements contained in the Defense Authorization Act of 1986. The AMRAAM's status regarding each of the certification requirements is discussed below.

DESIGN COMPLETION

The Secretary of Defense in certifying that AMRAAM's design is complete, stated that the Critical Design Review (CDR) has been completed. The Secretary acknowledged that the missile is still in development and that at this stage of any program, design refinements are normal.

The AMRAAM Program Manager states that the AMRAAM design process is complete. This view is based on the degree of design documentation, hardware availability, and the completion of the CDR.

Hughes, the development contractor, and Raytheon, the second source contractor, stated that the design is complete. They acknowledge that as part of the full scale development phase, there will be design modifications resulting from development test and evaluations and from manufacturing considerations.

We note that there are several stages in the development process when the design is reviewed. The CDR is conducted prior to fabrication to insure that the detailed design drawings satisfy the performance and engineering requirements. It establishes the design baseline for detailed fabrication and production planning. Accordingly, the Program Manager believed the design was complete and ready to begin the next phase.

The Functional Configuration Audit, however, is conducted after missile fabrication to verify that development has been completed satisfactorily and that its configured items will achieve the specified performance and functional characteristics. Further, the Functional Configuration Audit is a prerequisite to government acceptance of the design and responsibility for further design changes.

An AMRAAM Critical Design Review was conducted about a year before certification--from November 1984 to February 1985. At the time of certification, a Functional Configuration Audit was not scheduled to be completed until November 1986, approximately 9 months after the required certification date. Accordingly, the Secretary of Defense relied on the results of the CDR to certify that the design was complete for purposes of proceeding into the next development phase. According to the JSPO, the CDR

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was a thorough review of the design involving over 20,000 hours of effort and it confirmed that the design drawings were complete.

The Functional Configuration Audit, which will occur after further development and flight testing, will validate that the design is complete. This audit would have been a more reliable indicator of design completion had such an audit been possible at the time of certification.

Our review of AMRAAM design status, as discussed below, found that the CDR contractor follow-up actions have not been fully completed and AMRAAM's design is still evolving with continuing design changes being made.

Incomplete CDR follow-up actions

Contractor follow-on actions to satisfy outstanding CDR issues took place from February to December 1985, but some significant actions were not completed by March 1, 1986. The CDR, resulted in 345 JSPO requested contractor actions to satisfy engineering requirements. Of these, 44 were considered major by JSPO officials. Our review of 15 of the 44 major requested actions showed that 10 have not been completed by the contractor.

Hughes proposed specification changes for 8 of these major requests for actions. These were accepted by the JSPO. However, as of March 1986 these changes had not been completed. The JSPO stated that they are not required to be completed until 45 days prior to the Functional Configuration Audit, scheduled for completion in November 1986. According to Hughes, the delays in finalizing the specifications are due to engineering revisions being made in the missile's control and guidance sections.

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Continuing design changes

The AMRAAM design is still being developed. For example, there are several pending engineering change proposals, two software tapes must be developed and integrated into the missile, a variety of component design problems exist, cost reduction design changes must be made and more testing has to be done to determine what modifications may be necessary. These are discussed below.

Pending engineering changes

Several design issues remain unresolved. For example, two Engineering Change Proposals will involve re-design efforts. One of the Engineering Change Proposals was approved in August 1985, because the launch roll rates could exceed limits for missiles launched from F-15 aircraft. The other change would relax the missile's control section tolerance requirements. Without these changes to the missile's specifications, missile guidance errors could result.

Software tapes

Three of five software tapes have been designed and integrated into the initial missiles. But, the full capabilities of the AMRAAM cannot be tested until all of the tapes are designed and integrated. Missile capabilities provided by the addition of the second tape include a data link from the aircraft to the missile, look-down shoot-down features, software for fuzing, built-in-test information and high-pulse-repetition frequencies, to obtain more and better target information. Tape three adds features such as multiple target tracking, initial electronic counter counter-measures and solutions to some targeting problems. The fourth and fifth

tapes, with more sophisticated electronic counter counter-measures, are scheduled to be integrated in July 1986 and the spring of 1987.

An additional Engineering Change Proposal, approved in January 1986, allows the initial production of missiles with the fourth tape instead of the originally planned fifth tape. This last tape would be added to later production units. The fourth tape, which contains limited electronic counter counter-measure capabilities, became an interim configuration, because the design of the fifth tape, the baseline configuration, would not be completed in time for the initial missile production. However, current schedules show that the design of the fifth tape should be completed by December 1986 and some missiles produced with the lesser fourth tape capabilities will be placed in storage for later upgrading to the fifth tape configuration.

Component design problems

At the end of February 1986, missile component design problems were being addressed by the contractor. These are noted in Appendix II. As a result of the Critical Design Review completed in February 1985, and six air launch tests, made between December 1984 and March 1986, design changes were required to correct problems in several key missile components. These include the seeker servo unit, which drives the missile's antenna, the radar frequency processor, the transmitter and thereceiver. The JSPO stated that the need for these changes was identified prior to the CDR.

Cost reduction design changes

Design changes to reduce costs must be made to meet the \$5.2 billion ceiling in 1984 dollars. Hughes and Raytheon have

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submitted design proposals to the JSPO to modify certain missile components and subcomponents to make the missile less costly to produce. Negotiations are underway between the JSPO and the contractors on some of the proposals.

The JSPO estimated that it will take 2 years to design and qualify the proposed cost reduction changes and about another year to fabricate and integrate the changes into the manufacturing process.

Testing design changes

Contractor and JSPO officials acknowledge that the results of testing may require some design changes to meet missile performance requirements. DOD Directive 5000.3 states that development tests and evaluations are made to assist the engineering design and development process and to verify attainment of technical performance specifications. Operational tests and evaluations are conducted for the users to determine, among other things, what modifications are needed to insure the missile's operational effectiveness.

While we recognize that a significant amount of laboratory and simulation testing has been done, only 4 of the scheduled 90 development and initial operational flight tests of the missile had been made as of March 31, 1986.

DEGRADATION OF PERFORMANCE SPECIFICATIONS

The Secretary certified that AMRAAM system performance had not degraded from the original development specification, as amended by a draft Decision Coordinating Paper, dated June 14, 1985. His certification was based on a review of flight testing, laboratory environmental qualification testing, simulation, and basic design information.



We reviewed engineering changes and deviations which may affect the missile's performance parameters as stated in the original development specifications and Decision Coordinating Paper. We found that the original development specification did not contain specific measurable performance requirements for the system. The June 1985 Decision Coordinating Paper, however, contained 14 performance requirements, each having a measurable goal and threshold level.

We found that only one of the performance parameters had been changed. Specifically, the F-Pole--a measure of average missile velocity--was reduced about 6 percent. The JSPO Program Manager advised us, that prior to enactment of the certification legislation, the F-Pole requirement could not be met without adversely affecting other parameters. As a result, a "pen and ink" change was made to the Decision Coordinating Paper to reduce the F-Pole parameter. JSPO officials believe that the certification requirement was based on the revised performance parameter because it was shown to several congressional staff members prior to enactment of the Defense Authorization Act of 1986. Because of the uncertainty surrounding whether the act referred to the original or revised F-Pole requirement, we were unable to determine whether the performance requirement had been degraded.

The more detailed and specific performance requirements contained in the contract were not required to be certified to by the Secretary. However, during our review, we noted engineering change proposals and contract deviations that have or could reduce the contractually specified system performance. The status of these are discussed below.

Engineering change proposals

Engineering change proposals, if approved, are permanent changes to the contract specifications. As of March 1986, the

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contractor had submitted 51 engineering change proposals. Some of these are still pending, and if approved, could reduce the contract specification requirements. For example, one engineering change proposal involves an increase in launch sequence time, which would increase the time between firings. Another change involves easing the control surface alignment tolerance requirements. Such a relaxation can cause missile instability upon launch and thus affect its guidance and control. The contractor has been tasked to study the effects of this change before it is approved. If easing the tolerance is unacceptable, redesign may be necessary to insure that the tolerances, as specified in the contract, are met.

One engineering change proposal which was approved in August 1984 revised the dimensional limits of the AMRAAM missile. This revision included increases to the weight, length, and diameter. These changes caused an increase in missile drag and resulted in reduced speed and range. According to the contractor, excessive cost and schedule constraints would have jeopardized the program if the contractual requirements were not changed.

Deviations

As compared to engineering change proposals, deviations are temporary variations from the contract specifications that do not permanently reduce performance requirements if corrected. However, if not corrected they will result in an engineering change proposal that will effect the contract specifications. Deviations are normal in early stages of the development program.

Although the missile components and subcomponents have been designed to meet certain contract specifications, Hughes has

reported 14 deviations in the test missiles. These deviations involved, for example, the radar, launch time, guard antenna and the physical environment. Both the JSPO and the contractor consider these deviations temporary and/or minor and acceptable. We noted that the number of deviations has diminished as additional work and testing has progressed.

Three deviations have resulted in the submission of engineering change proposals. If approved, these proposals will relax the contract specifications. In addition, there are two deviations which may require further change--one involves temperature and the other, the F-Pole. The remaining nine deviations have either been corrected or have no effect on performance.

TESTING COST REDUCTION
CHANGES BEFORE PRODUCTION

The Secretary stated that the flight test program has been revised to include the maximum practicable number of selected cost reduction design changes that are qualified and flight tested before production. Additionally, he said that the producibility enhancement program plan includes provision for appropriate testing of the design changes prior to being introduced into production.

An overall master plan developed by the JSPO has incorporated plans to test the Producibility Enhancement Program (PEP) projects before their integration into production lots. The cost reduction changes are scheduled to be tested prior to incorporation into production lots #2 through lots #4 from 1988 to 1990. The JSPO plans to use 10 production missiles from lot #1 to test the producibility enhancement projects. This involves reworking the missiles to incorporate the producibility

enhancement changes which are to be tested. The reworked missiles are to be delivered beginning in May 1988 and flight tested while production is occurring.

Although a test plan has been developed, there are indications that delays may occur. Any slippages in contract award, development, or testing would potentially delay integration of cost reduction projects into production missiles and reduce the intended benefits.

In February 1985, the JSPO awarded contracts to Hughes and Raytheon to propose producibility enhancement projects which would reduce AMRAAM production costs. The contractors submitted about 40 cost reduction proposals to the JSPO. By the end of November 1985, the JSPO had evaluated and selected 24 of these projects for negotiation. The first group of producibility enhancement projects were targeted for award by January 1986. The second group, an additional 11 projects, were scheduled for award in the February/March 1986 timeframe.

However, initial contracts for cost reduction changes had not been awarded as scheduled. As of March 31, 1986, no contracts had been awarded for any of the producibility enhancement projects. Raytheon officials stressed that the producibility enhancement changes should be developed and tested in time to be incorporated into production lots #2 and #3. Otherwise, the estimated savings resulting from these cost reduction changes will be diminished. Hughes also faces a similar timeline.

A 1-year delay in integrating all the cost reduction changes would affect 3,000 missiles which the JSPO plans to produce in lot #4 during 1990. The first three lots, totaling about 3,100 missiles, were not intended to have all of these changes. In total, about 25 percent of the missiles may not

have all of these changes. The August 1985 Secretary's Program Review shows that the cost reductions were planned to be fully incorporated by lot #3, so that they would be included in 95 percent of the missiles bought.

FULL-SCALE DEVELOPMENT
CEILING OF \$556.6 MILLION

The Secretary certified that a fixed-price type contract for not more than \$556.6 million had been entered into with Hughes for research, development test and evaluation of the AMRAAM system.

We noted that as of March 1, 1986, the contract with Hughes did not exceed the ceiling imposed by the Defense Authorization Act of 1986. We found, that prior to the November 8, 1985 enactment of the Defense Authorization Act of 1986, the JSP0's recordable obligations with Hughes exceeded the act's \$556.6 million ceiling by about \$200,000. In December 1985, the JSP0 modified the contract deleting certain requirements. This resulted in a downward adjustment of these obligations to comply with the March 1, 1986, certification ceiling. Appendix III shows the cumulative obligations at May 31, 1985, when the contract ceiling was reached, the contract modifications made through February 1986, and the reasons for these changes.

The AMRAAM Program Manager informed us that obligations above the ceiling are needed to minimize risk. The JSP0 had planned to open a third test site for AMRAAM at Eglin Air Force Base, but believes the test program can be implemented using two test sites. Also, the JSP0 planned to procure a third captive flight test vehicle. The Program Manager stated that these actions would necessitate support from Hughes in order to take advantage of near-term developments. He believes that, if additional funding is not authorized, flexibility in testing

would be inhibited and flight testing could stretch out by approximately 6 months. He emphasized that such additional funding is not needed for missile design purposes.

As of March 1986, AMRAAM's total estimated development cost to the government was \$1.2 billion. In addition, Hughes anticipates that it will absorb \$225 million in developing the AMRAAM, making the total estimated development cost \$1.4 billion in then year dollars. As previously noted, modifications to aircraft and launchers are not included in this estimate.

PRODUCTION CEILING OF \$5.2 BILLION

The Secretary certified that the cost to produce 17,000 AMRAAM missiles would not exceed \$5.2 billion in fiscal year 1984 dollars. He noted that the estimate was derived from a combined Navy and Air Force program totaling 24,000 missiles.

The JSPO, in its presentation to the Secretary prior to certification, stated that the combined Air Force and Navy estimate was \$7.0 billion in 1984 dollars for 24,335 missiles and that the Air Force portion for 17,000 missiles was \$5.2 billion in 1984 dollars. Both Hughes and Raytheon confirmed the estimate by stating separately that they could produce 24,335 missiles within the \$7.0 billion estimate in fiscal year 1984 dollars, provided that the schedule and funding for the program are maintained as planned. The estimate is based on a number of assumptions and forecasts. But, the JSPO believes the program can be executed within budgeted levels because it is (1) based on a fully documented estimate, (2) conservative compared to a Secretary of Defense commissioned study, and (3) met the test of reasonableness.

We agree that the JSPO had fully documented its estimate and had a well developed cost estimating methodology. However,

it does not appear
~~we do not agree~~ that the \$5.2 billion estimate, when used as a ceiling over the next 10 years, is conservative and reasonable because of the underlying assumptions, forecasts and judgments used in developing it. These concerns are discussed below. We also discuss additional AMRAAM program costs not included in the \$5.2 billion estimate. In our view, the accumulation of these factors reduce the confidence in the estimate being achieved.

Uncertainties of cost estimate

The JSPO's estimated production cost of \$5.2 billion in fiscal year 1984 dollars was derived from an Independent Cost Analysis, dated December 1984, which projected Air Force costs to produce 17,123 missiles at \$5.5 billion. The JSPO has since reduced the estimate by a net of \$311 million to the \$5.2 billion certified to by the Secretary. This reduction factored in about \$175 million in inflation and other cost increases.

The reductions were made by (1) increasing estimated savings from producibility enhancement projects and competition, (2) reducing warranty factors, (3) dererring field depot support, and (4) deleting the funding for a classified project.

The basis and uncertainties surrounding these estimated cost reductions are addressed below.

Producibility enhancement program savings uncertain

By revising and updating estimated savings from the producibility enhancement projects, the JSPO reduced the Independent Cost Analysis estimate of AMRAAM production costs by \$212 million in 1984 dollars.

More recent estimates indicate even larger savings from the PEP projects. The JSP0's July 1985 estimate of PEP cost reduction changes for both Air Force and Navy missiles was \$1.3 billion. This estimate was made when PEP was still in the study phase. In February 1986, the JSP0 revised its savings estimate based on approved PEP projects to \$1.6 billion. This indicates an increase of about 23 percent more savings than was used in the \$5.5 billion Independent Cost Analysis estimate. The most recent estimate assumes 100 percent savings from PEP projects, whereas the previous estimate included only 75 percent of the savings because of a risk factor used to estimate costs.

Neither estimate takes into account the sharing of PEP savings with the contractors. According to the PEP plan, contractors will be provided an incentive share of savings in accordance with the value engineering clause of the contract. Computations will be made using Federal Acquisition Regulation sharing arrangements in which 25 percent of the highest 3 of the first 5 year savings are paid to the contractor. Thus, the sharing arrangement, would reduce the PEP savings estimate and increase the production estimate.

Hughes and Raytheon's savings estimates for each PEP project exceed the JSP0's estimate. However, Hughes officials noted that the inability to obtain data rights from subcontractors for two projects may prevent the projects from being implemented and achieving the savings. Hughes also noted that their savings estimate was based on six of their projects being developed together and that, if separated, the extent of savings could not be determined. We noted that the JSP0 divided this set of projects between Hughes and Raytheon.

Raytheon officials believed savings could be achieved only if funds are committed in sufficient time to qualify outside vendors and incorporate the PEP projects into the third

production lot. According to the Independent Cost Analysis, a 1-year delay in introducing PEP projects and reducing the number of projects by one-third could increase total production costs by 4 percent. As noted earlier, none of the PEP contracts had been awarded as of March 31, 1986.

Savings from competition uncertain

To reduce production costs, Raytheon, was brought into the program for production competition. The JSPO estimates show that the up-front costs of competing AMRAAM production will not be fully recovered until after 10,000 missiles are produced. Accordingly, if the planned 24,000 missiles are produced, there should be savings from competition.

The Independent Cost Analysis concluded that if the contractors do not compete aggressively, Air Force production costs could grow by 9 percent. Aggressive competition could reduce costs by 6 percent. In addition, such competition is necessary at the subcontractor level to realize savings. We noted however, that a number of major and critical missile components are being bought noncompetitively from subcontractors. The prime contractors informed us, however, that they are developing alternate competitive sources for these items. Also, the JSPO plans to insure that by lot #3, there are no single source subcontractors.

The share of missiles produced by competing contractors can affect the amount of savings. At this time, the JSPO has intentionally not defined the production share ratio which will be awarded to the winning contractor in order to encourage aggressive competition between the two sources.

Competition is to begin with production lot #3. For lots #1 and #2, noncompetitive contracts are to be awarded to produce about 1,100 missiles. This process will allow the contractors to gain the production experience and attain a capability for increasing their production rates. The two lots represent 4.5 percent of the estimated total planned production quantity and 17.9 percent of the estimated total production cost.

Savings from deferring field
depot support uncertain

Another JSPO change to the Independent Cost Analysis production cost estimate involved deferring the cost of field depot facilities until the end of production. According to the JSPO, major maintenance and repair for deployed missiles would be performed at the contractors' plants instead of at the military's field repair and maintenance depots. This potential logistics change reduced the JSPO's estimated production cost for the Air Force by a net of \$66.1 million in 1984 dollars. It deleted field depot equipment and related inventory and added costs for contractor equipment and refurbishments.

This concept is under consideration by the Air Force and Navy logistics activities. Additional factors which must be considered include the effects of the change on operation, transportation and maintenance costs, and on military readiness. If this concept is not approved, \$66.1 million must be either added to the JSPO's \$5.2 billion estimate or absorbed into that estimate.

Savings from changing
warranty factors uncertain

Another element of uncertainty relates to warranty costs. The Independent Cost Analysis estimate applied a 5 percent

warranty factor annually to the missile's hardware cost. This was based on information which indicated that warranty costs ranged from 3 to 15 percent of hardware costs, but averaged 3 to 5 percent.

By reducing warranty factors, the JSPO eliminated \$94.3 million in 1984 dollars from the Independent Cost Analysis' estimated AMRAAM warranty production costs for Air Force missiles. Based on a cost reduction study, the JSPO applied a 5 percent factor to the first three production lots, then gradually reduced the percentage until it reached zero by the ninth lot. In the JSPO's judgment, warranty costs would decline as the system matured. Because AMRAAM is to be designed with high reliability and procured through competition, the JSPO believes the contractor would have incentives to reduce warranty costs, and eventually absorb them.

Assumptions used in the cost estimate

The JSPO's estimated production cost of \$5.2 billion in fiscal year 1984 dollars for 17,123 missiles is based on a number of assumptions. The accuracy of these assumptions is essential to the \$5.2 billion estimate. Historically, similar assumptions, for other major acquisitions, have changed over time. The potential for such changes reduces confidence in the estimate being achieved.

Some of the assumptions include:

--Air Force and Navy funding will range from \$750 million to \$1 billion annually, in then year dollars, over a 9 year period beginning in fiscal year 1988. (The Balanced Budget and Emergency Deficit Control Act of 1985 may reduce future program funding even though the Air Force considers it a high priority.)

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- The Navy will buy 7,212 missiles beginning in fiscal year 1989, for a total production of 24,335 missiles. (The program and cost estimates have always assumed production of about 24,000 missiles. If only 17,000 missiles were to be produced, the cost in 1984 fiscal year dollars would be in excess of the \$5.2 billion ceiling by about \$500 million.)
- A full production rate of 3,000 missiles annually will be maintained for 7 years beginning in fiscal year 1990. (Recent Sparrow procurement history shows that annual and total planned purchases often vary from actual purchases. However, the estimate does not include the potential for foreign military sales which could increase total production and reduce unit costs.)
- Most cost reduction design modifications are planned to be fully developed and integrated into production lots #3 and #4 in fiscal years 1989 and 1990, respectively. (According to the Independent Cost Analysis, a 1-year delay in introducing producibility enhancement changes and reducing the number of changes by one-third could increase costs by 4 percent.)
- No model or major design changes will be made to the missile over the next 10 years. (The Department of Defense has already endorsed future producibility and performance improvements that emphasize technology for an advanced seeker and an advanced processor.)
- No significant schedule slippages will occur. (There is concurrency between the full scale development phase and initial production. Delays in completing development or needed design or production changes may result in production stretch out and increased costs.)

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--Unit procurement funding will drop from about \$2.8 million per missile in 1987, which includes nonrecurring start-up costs, to about \$341,000 per missile in 1990 and to \$259,000 per missile in 1996 in then year dollars. The flyaway costs, which exclude the nonrecurring costs for those years would be \$2.0 million, \$298,000 and \$253,000, respectively. (This is based on an accumulation of assumptions including funding, production quantity, an improving production rate, and other related assumptions.)

Additional program costs

Similar to other programs, the AMRAAM production cost estimate represents only the cost of the Air Force's missile procurement. Total program costs include other related costs, such as modification costs to install equipment in the aircraft or aircraft design changes to modify the radar which is to act as a data link for sending updated information to the AMRAAM while in flight. These costs are separately budgeted as modifications to the four types of aircraft that will carry AMRAAM missiles and could total more than \$1 billion.

In our February, 1981, report to the Congress (C-MASAD-81-6 "Progress and Problems of the Advanced Medium Range Air-To-Air Missile Program") we reported that Air Force estimates showed that modifications to a portion of the F-15 and F-16 fleets could cost about \$900 million. A Navy estimate, at that time showed that F-14 aircraft modification work for AMRAAM could cost about \$43 million, but the related procurement costs for the modifications had not been estimated. Similar data for the F-18 aircraft was not estimated. Current data is not available to update these estimates.

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Also, military construction and operation and maintenance costs, estimated in 1979 to be about \$430 million over a 15 year period, are not included in the estimate. These costs are budgeted in their respective appropriations.

Similarly, as is standard practice, research and development funds are excluded from the production cost estimate. The Air Force and Navy, as mentioned earlier, expect to spend about \$1.4 billion in then year dollars to develop the AMRAAM missile.

MISSILE PERFORMANCE

The Secretary certified that the missiles procured will perform in accordance with the development specification as amended. He also stated that flight testing, laboratory environmental qualification testing, simulation and basic design information were reviewed.

To validate missile performance, numerous tests such as captive carry, simulation, integration, reliability, environmental, electromagnetic and live air launched flights are underway. However, as of March 1, 1986, the certification date, not enough testing had been completed to provide sufficient assurance of meeting desired performance criteria.

In response to our assessment, the JSPO stated that testing is not the only way to project performance and that testing completed to date shows that the objectives have been met and indicates the missile will meet its performance objectives. Our review of AMRAAM's testing status and results are discussed below.

Testing status and results

As of March 31, 1986, 27 missiles have been produced and delivered to field test facilities such as the Pacific Missile Test Center, Point Mugu, California; Holloman Air Force Base, New Mexico; Raytheon Company's Bedford, Massachusetts, plant; and General Dynamics' Fort Worth, Texas, plant. Nine of these missiles were returned to Hughes to correct some malfunction. Hughes analyzed the problems and modified or replaced the components or subcomponents as needed. In some cases it was found that the missile test equipment had difficulties and had to be modified. Some of the missile malfunctions are described in Appendix IV.

AMRAAM's performance specification requires a high kill probability under a variety of combat, weather, and electronic counter-measure conditions. This combat performance value--the probability of kill--differs from physical performance measurements such as weight or speed, in that for the most part it is determined analytically. Some data is obtained from warhead shots. The probability of kill performance criterion is determined from a series of factors that must be considered together. Examples of these are prelaunch reliability, in-flight reliability, guidance accuracy, fuze accuracy, warhead destruction capability and target characteristics. To attain a high confidence that these factors will achieve the desired probability of kill levels, a large number of environmental tests, ground simulations, captive flights and flight tests must be made against various types of targets.

Such a volume and variety of testing was not scheduled to be completed by the March 1, 1986, certification date, to provide sufficient assurance of meeting the desired performance criteria. This is not unusual for this phase of a program. The current plan shows that by mid-1988, 90 flights will have been

completed using four types of aircraft as part of the development and the operational test and evaluations. By then, these tests may provide a basis to judge whether the missile will achieve its required kill capability.

In December 1985, the Director for Operational Test and Evaluation of the Department of Defense stated that he believed there was a low probability of adequate test results being available for an operational forecast before the March certification. In his view, limited useful test information would be available. He said testing progress was hampered by limited missile availability, software development, and test assets. He noted that the key test asset, the AMRAAM Captive Equipment pod which fits the F-16 aircraft, had not been successfully flown and that three missile test flights were delayed. He pointed out that unplanned test problems which required repeated tests precluded completing all scheduled events. This, with the normal test problems, he said, would compound schedule slippages.

In February 1986, another Defense Department official involved in test and evaluation questioned whether the missile would be expected to meet all of its performance requirements. He said that limited full scale development testing was completed at that time.

Live missile firings

In the development phase, the JSPO is scheduled to complete 90 live firings at targets using instrumented or fully operational missiles and 8 live firings using separation/control test vehicles. The latter missiles, which are not fired at targets, contain all elements of a fully operational missile except for a seeker and warhead. They are to demonstrate (1)

safe separation at launch, (2) airframe flight performance, 3) maneuvering response characteristics, and 4) missile stabilization control.

It is too early to fully assess the results of the flight test program since 4 of the 90 scheduled development flight test missiles have been launched as of the end of March 1986. Also, 2 of the 8 separation/control vehicles have been flight tested. All 6 flight tests have been considered successful. But to accomplish these successes, 7 flight tests were cancelled or aborted due to missile malfunction. Results of these live firings are shown in Appendix IV.

In addition to live flight testing, AMRAAM required performance is demonstrated by a number of types of tests. These include software tape testing, simulations, captive equipment tests, environmental, stress, reliability, and integration tests. The status of these tests are discussed in Appendix V.

ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE

UNIT DESIGN STATUS

As of February 26, 1986

UNIT	DESIGN PROBLEM(S)	STATUS	TO BE CORRECTED BY LAUNCH MISSILE #
RADOME	NONE		
ANTENNA	MAIN ANTENNA PRODUCIBILITY	RE-ITERATING RECTANGULAR SLOT LAYOUT	TO BE DETERMINE
	GUARD ANTENNA COVERAGE	ENGINEERING RELEASED	# 30
	BIT ANTENNA GAIN/PHASE STABILIZATION	ENGINEERING RELEASED	# 43
RADAR FREQUENCY PROCESSOR	HIGH POWER RECEIVER PROJECT	PARTS IN HAND. TESTING HAS BEGUN	# 30
	IMAGE REJECTION	RF PROCESSOR BEING REWORKED	AS SOON AS POSSIBLE
	SAT DETECTOR	REQUIREMENTS RELEASED	# 71
	FULL TEMPERATURE	REQUIREMENTS RELEASED	# 71
CABLE FILTERS	NONE	—	—
TRANSMITTER/ ELECTRICAL CONVERSION UNIT	TRANSMITTER HIGH VOLTAGE REGULATOR REDESIGN	FIX IN XMTR 0005, DEVELOPING TEST PLAN TO VERIFY OVER ENVIRONMENT ETC.	# 30
	HIGH POWER		
	HIGH PULSE REPETITION FREQUENCY		
	REDESIGN INDUCTORS IN A5	NEW PARTS 3/86. SCREEN OLD PARTS	AS SOON AS POSSIBLE
	-5 REGULATOR	IN WORK	TO BE DETERMINED
	ELECTRONIC CONVERSION UNIT START-UP	UNDER INVESTIGATION	TO BE DETERMINED
	START-UP HYBRID REDESIGN AND LOSS OF PHASE	ENGINEERING RELEASED	TO BE DETERMINED

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UNIT	DESIGN PROBLEM(S)	STATUS	TO BE CORRECTED BY LAUNCH MISSILE #
FILTER	2 CHANNEL DDS	CLOSED.	# 6
RECEIVER/ RANGE CORRELATOR	40 BIRDS (M)	BEING WORKED AS A HIGH PRIORITY TASK. MEDIUM PULSE REPETITION FREQUENCY (MPRF) MODS BY 3/31/86. HIGH PULSE REPETITION FREQUENCY (HPRF) MODS BY 6/14/86	MPRF: # 4 HPRF: # 30
	FILTER 32 BIRD (M&H)		
	FILTER 28/36 BIRD (H)		
	VCXO HARMONIC BIRDS (H)		
	MODE SWITCHING TRANSIENTS	BEING WORKED WITH BIRD STUDY	# 71
	CCD SAT DETECTOR	BREADBOARD DUE SHORTLY. 1st FF UNIT DUE 5/86	# 71
	SPECIAL DETECTOR		
FREQUENCY REFERENCE UNIT	WIDEBAND NOISE FLOOR	ENGINEERING RELEASED.	# 66
	LO/TD POWER OVER FREQUENCY AND TEMPERATURE	IMPROVED WITH VCO REDESIGN FINAL FIX IN LOT 1.	# 66
	SPURS	MACOM HAVING PROBLEMS. REDESIGNED VCO.	# 66
INPUT/OUTPUT	SPECIAL DETECTOR	ENGINEERING RELEASED	# 71
TARGET DETECTION DEVICE	TARGET DETECTION DEVICE TURN-ON	CLOSED	# 6
INERTIAL REFERENCE UNIT	FULL TEMPERATURE OPERATION	ENGINEERING RELEASED	# 20
ANTENNA SERVO	SERVO OSCILLATION/HIGH TEMPERATURE DRIFT	ENGINEERING RELEASE IN PROGRESS	# 8
	DIGITAL I/F LOW TEMPERATURE OPERATION	SCREEN EXISTING PARTS. PROBLEM IN A/D CONVERTER. AUGMENT ACCEPTANCE TEST.	TO BE DETERMINED
SKIN/WINGS	REDUCE WEIGHT	ENGINEERING RELEASED	# 20
SAFE, ARM AND FIRE	TACTICAL	CLOSED	# 6

Source - Provided by the Hughes Aircraft Company for AMRAAM Quarterly Program Status Review with JSPO.

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MODIFICATIONS TO THE AMRAAM FULL SCALE DEVELOPMENT CONTRACTFROM MAY 31, 1985, THROUGH FEBRUARY 28, 1986

<u>Date/and modification number</u>	<u>Purpose of modification</u>	<u>Recordable obligation amount</u>	<u>Total</u>
5/31/85	-	-	\$556,580,480
7/31/85 (P00071)	Preliminary design study of advanced metal material composites for potential improvements to the baseline AMRAAM launcher design to determine weight savings and production cost impact	\$125,859	556,706,339
7/19/85 (P00072)	Mini-qualification test on the Safe-Arm Firing Device	81,000	556,787,339
11/08/85 (P00073)	Adjustment to prior recordable obligation (P00072)	-8,370	556,778,969
12/20/85 (P00076)	Eliminated three contractor "inspection and repair as necessary" reliability test vehicles	-411,612	556,367,357

RESULTS OF LIVE FIRING PROGRAM THROUGH MARCH 31, 1986

DATE AND
TEST
MISSILE #

OBJECTIVESRESULT

12/7/84
S/CTV-1

Demonstrate: Separation from the F-16.
Autopilot performance from upper altitude to lower altitude at end of flight.
Validate: Ability to use available energy.
Explore: Cross-coupled stability during maneuver.
Gather: Data for post-flight validation of the aero data base and 6 DOF simulations.

TEST OBJECTIVE ACHIEVED
No target aircraft involved. Anomalies included channel disturbance Pitch/Yaw/Roll cross coupling. Corrected by modifying Tape 2 autopilot software which activates control section before missile is launched.

1/17/85
AAVI-1

Demonstrate: Active mode launch capability from the F-16. Safe missile separation from F-16. Medium Pulse Repetition Frequency seeker acquisition and tracking.
Verify: Launch-to-eject cycle estimates.
Evaluate: Closed loop guidance operation. Missile end-game performance.

ABORTED
Telemetry problem.

1/25/85
AAVI-1

Same as above.

ABORTED
Data Processor problem; terminal seeker battery squib miswired. Problem corrected and has not reoccurred.

2/22/85
AAVI-1

Same as above

ABORTED
Launch sequencer timing problem. Problem corrected and has not reoccurred.

<u>DATE AND TEST MISSILE #</u>	<u>OBJECTIVES</u>	<u>RESULT</u>
4/3/85 AAVI-1	Same as above	<u>ABORTED</u> Flight termination system battery did not function. Wire from positive terminal broken. Problem corrected and has not reoccurred.
5/14/85 AAVI-1	Same as above	<u>TEST OBJECTIVES ACHIEVED</u> Passed within lethal radius of target. Anomalies: Sudden changes in terminal steering. Power irregularities after fly by. Processing of data stopped after fly by.
8/7/85 AAVI-2	Demonstrate: Inertial launch and safe missile separation from F-15. Medium Pulse Repetition Frequency Seeker acquisition and tracking. Evaluate: Missile end-game performance; look down-shoot down	<u>TEST OBJECTIVES ACHIEVED</u> Passed within lethal distance of target. Anomalies: Large angle noise during terminal encounter; and sudden changes in terminal steering. Corrections have been identified.
9/17/85 AAVI-3	Demonstrate: F-16 capability to transmit data link. Missile capability to receive and utilize data link Evaluate: Tape 2 autopilot performance. Missile end-game performance in a high closing velocity.	<u>TEST OBJECTIVES ACHIEVED</u> Direct hit on target. Anomalies: None.
12/10/85 AAVI-5	Demonstrate: Long range shoot up. Multiple mode demonstration. Mid-course heading change.	<u>CANCELLED</u> Power problem with transmitting tube's coil. Returned to Hughes for repair.

DATE AND TEST <u>MISSILE #</u>	<u>OBJECTIVES</u>	<u>RESULT</u>
1/25/86 AAVI-6	Demonstrate: Maneuvering target. Maneuvering launcher.	<u>CANCELLED</u> Other higher range priorities.
1/27/86 AAVI-6	Same as above	<u>CANCELLED</u> Higher range priorities on range.
1/29/86 AAVI-6	Same as above	<u>ABORTED</u> Diode in transmitter failed causing overcurrent. Returned to Hughes for repair.
3/5/86 AAVI-6	Same as above	<u>ABORTED</u> Decrease in pressure resulting from a marginal seal in guidance section caused by an out-of-round terminal seeker bulkhead.
3/25/86 AAVI-6	Same as above	<u>TEST OBJECTIVE ACHIEVED</u> Missile made direct hit on target. Anomaly: Guidance section had pressure reduction.
3/7/86 S/CTV-2	Check missile autopilot and control actuator in high G, high dynamic pressure environment. Collect data to generate zero lift drag data base. Investigate low energy (subsonic) maneuverability. Gather data to verify simulations.	<u>TEST OBJECTIVES ACHIEVED</u> Anomalies: None.

STATUS OF TESTINGSoftware testing

As of the end of February 1986, the first 3 of 5 software tapes had been designed, coded and integrated into the missile. The full capabilities of the AMRAAM cannot be tested until all the tapes have been integrated into the missile. Certain coding revisions have been made to these tapes based on tests. AMRAAM Captive Equipment testing and missile flight testing has been completed for the first two tapes. For the third tape, these tests were in process. The design of the fourth tape was 95 percent complete and about 80 percent coded at the end of February. The fifth tape is in the design process.

Simulations

Pre- and post-flight laboratory equipment simulations have been made for each live firing. Simulations are used to identify potential operational limitations and examine missile performance in various scenarios. A JSPO official told us that it may be difficult to keep up with the simulation analyses when live firings become frequent.

AMRAAM captive equipment tests

Captive equipment tests are made prior to live firings. These tests employ the software tape programs. Functions verified in the first tape by the captive equipment tests include aircraft interface, navigation and guidance, acquisition and tracking and launch profiles. Functional testing for the second tape verified the missile data link operation, acquisition and tracking, and launch profiles. For the third tape, functional testing verified system checkout, radar

processing, acquisition and tracking, and electronic counter counter-measures.

At the end of February 1986, several missile capabilities were not tested when the 3 tapes were verified during the captive equipment testing. These include the ability to intercept certain clustered targets, electromagnetic interference/electromagnetic compatibility, and overall data link performance. Appendix VI shows the capabilities tested and not tested.

Environmental Testing

An objective of environmental testing is to gather data on shock, vibration, acoustics, temperature effects and missile loads during captive flights. For this purpose, the Instrument Measurement Vehicle/Captive Loads Vehicle, an AMRAAM Missile containing measurement devices was used on the F-15 and F-16 aircraft. A September 1985 Air Force report on this environmental testing recommended (1) a review be made of the aft actuator dovetail assembly and (2) an investigation of the effects of vibrations, which exceed the specification limits, on flight test vehicles used in captive carry tests before launch.

Initialization/alignment vehicles, in five configurations, were used to measure the F-16 wing twist. In this test it was found that wing flutter was objectionable to the pilot. At the end of February 1986, the long-term effects of this flutter on F-16 fatigue life and on AMRAAM's operability with the F-16 were being evaluated by General Dynamics.

Environmental stress screening

During environmental stress screening open traces of copper and bismuth were found on the ceramic cards. At the end of February 1986, Hughes stated that improved screening may be necessary and that more thorough testing may be needed, especially during the powered temperature "up" cycle. These ceramic cards are components of the Input/Output and Receiver/Range Correlator sections of the missile's Electronic Unit. These sections are high risk components and are the last two to have engineering responsibility transitioned from Hughes' Canoga Park research and development facility to their Tucson production plant.

Test Analyze and Fix (TAAF)

Four early development missiles were dedicated to evaluate reliability and provide identification of problems so that fixes could be incorporated in the initial missile production lots. Under these tests the various units are subjected to environments which simulate the critical environment parameters of captive flight.

At the Pacific Missile Test Center at Point Mugu, California, three Test Analyze and Fix missiles were tested for reliability and environmental effects. The power up sequence for one missile was incorrect resulting in failures of its electronic units' board and harness. The sequence error was caused by test set equipment problems and not by the missile. A second missile experienced a telemetry system failure. A third missile had a control section failure, caused by the accidental opening of the test chamber resulting in condensation damage to some of the missile's subcomponents. The three missiles which were returned to Hughes for repair, have been reinstated in the test program. A fourth missile had

been delivered to the Test Center, but at the end of March 1986, it had not been introduced into this test program.

Captive carry reliability program

This program involves flight tests implemented in order to provide reliability data from operationally oriented missions and evaluation of the aircraft and missiles built in test capability. At the end of February 1986, one captive carry reliability missile was delivered to Nellis Air Force Base, Nevada for reliability testing. This missile was being integrated with the test aircraft at the base. Five additional reliability missiles are to be delivered to Nellis by June 1986.

Testing began at Nellis in January 1985 using an F-16 aircraft and AIM-9 Sidewinder missiles. The tests involved flights using a modular launcher. A major portion of a second phase of testing involves the evaluation of the F-16's missile built in test system capability. Software changes to the central interface unit and fire-control computers are to be made for F-16 aircraft/AMRAAM interface. Another testing stage is to begin in January 1987, and extend through April 1989. In this stage the F-15/AMRAAM interface is to be evaluated.

Safe, arm and fire qualification test

At the end of February 1986, Hughes was proceeding with qualification testing on the missile's fuse system. If it fails in the flight termination system/range safety tests, then the contractor believes it has no obligation to redesign the fuse in order to meet the requirements. However, the JSPO position is that it considers Hughes responsible for insuring that the fuse system passes the flight and range safety tests and will enforce the requirement on the contractor.

AMRAAM CAPTIVE EQUIPMENT TESTING
AS OF FEBRUARY 26, 1986

DESCRIPTION	FLIGHT PASSES		
	TAPE 1	TAPE 2	TAPE 3
System Checkout/Benign Target	30	26	16
Clutter	41	14	5
Clustered Targets	N O T T E S T E D		
Multiple Targets			3
ECM and Chaff			13
Maneuvering Targets		25	
EMI/EMC (Electromagnetic Interference and Electromagnetic Compatibility)	N O T T E S T E D		
Data Link Performance/Multipath	N O T T E S T E D		
Target Calibration and Signature		10	
Electromagnetic Detection	N O T T E S T E D		
Launch Profile Verification	205	216	91
Initialization/Alignments	N O T T E S T E D		
Software Performance		1	
Seeker Multipath	N O T T E S T E D		
Weapon System Compatibility	N O T T E S T E D		
AFOTEC Captive Performance	N O T T E S T E D		
Contractor Development	17	86	53
Aircraft Radar Evaluation	—	11	—
Total Passes	293	389	181

Source: Hughes Aircraft Company for AMRAAM Quarterly Program
Status Review with JSPO.

Integration tests

Problems have occurred in getting the integration tests underway. These tests are designed to launch an AMRAAM missile from the various types of aircraft that are to use it. One missile was sent to McDonnell Douglas and another to General Dynamics for aircraft integration tests. Both missiles experienced built-in test failures. One had a telemetry unit failure and the other had a filter rectifier problem. These missiles were returned to the contractor for analysis and rework.

At the end of March 1986, these missiles were returned to Holloman Air Force Base and the Pacific Missile Test Center at Point Mugu, California. The missile at Holloman is undergoing integration testing. The missile at Point Mugu was accidentally ejected from an F-18 aircraft during testing and is lost a sea. This missile is to be replaced in June 1986, with a missile which was scheduled to be used in the captive carry reliability test program.

[DISCUSSION DRAFT]
MARCH 14, 1986

99TH CONGRESS
2D SESSION

H. R. _____

IN THE HOUSE OF REPRESENTATIVES

Mr. BENNETT introduced the following bill; which was referred to
the Committee on _____

A BILL

To amend title 10, United States Code, to require live-fire
testing for certain major weapon systems and munitions before
production of such weapons system or munitions is begun. *program*

1 *Be it enacted by the Senate and House of Representatives*
2 *of the United States of America in Congress assembled,*

1 SECTION 1. TESTING OF CERTAIN MAJOR WEAPON SYSTEMS AND
2 MUNITIONS.

3 (a) LIVE-FIRE TESTING.--(1) Chapter 139 of title 10,
4 United States Code, is amended by adding at the end thereof
5 the following new section:

6 ``§2363. Covered systems and major munitions programs: live-
7 fire testing

8 `` (a) The Secretary of Defense shall provide that--

9 `` (1) a contract for production of a covered system
10 may not be entered into until live-fire testing of the
11 system is completed in accordance with this section; and

12 `` (2) a contract for production of a major munitions
13 program may not be entered into until live-fire testing
14 of the program is completed in accordance with this
15 section.

16 `` (b) (1) There shall be within the Department of Defense
17 a Director of Live-Fire Testing. The Director shall be
18 appointed from civilian life by the Secretary of Defense and
19 shall be under the Under Secretary of Defense for Research
20 and Engineering.

21 `` (2) The Director shall--

22 `` (A) before full-scale engineering development
23 begins with respect to a covered system or major
24 munitions program--

25 `` (i) review the adequacy of the plan, schedule,

1 and proposed funding of the Secretary of the military
2 department concerned for live-fire testing of that
3 system or program; and

4 (ii) report to the Under Secretary on the
5 adequacy or inadequacy of the plan for such live-fire
6 testing plan and (if the Director determines that the
7 plan is inadequate) on what would constitute an
8 adequate test plan; and

9 (B) while such live-fire testing is carried
10 out, continue to review the adequacy and progress of
11 such testing.

12 (3)(A) The Director shall carry out programs to improve
13 the conduct of live-fire tests and shall develop instruments
14 and facilities for such tests.

15 (B) The Secretary of Defense shall provide to the
16 Director specific funds for the functions of the Director
17 under subparagraph (A). (3)(A)!

18 (4) The Director--

19 (A) may observe any live-fire test conducted by a
20 the Secretary of a military department; and

21 (B) shall have access to all live-fire test data
22 and reports produced by the Secretary of a military
23 department.

24 (5) The Secretary shall provide to the Director an
25 adequate staff to enable the Director to carry out the duties

1 of the Director under this section.

2 “(c)(1) The Secretary of the military department
3 concerned shall carry out live-fire testing of each covered
4 system ~~and~~ major munitions program for which the Secretary
5 has responsibility for development and production. Such
6 testing--

7 “(A) shall be planned and funded by that Secretary;
8 and 4 “(B) shall be carried out early enough during
9 the developmental phase of the system ^{TEST PROGRAM} or munitions
10 program to allow any design deficiencies demonstrated by
11 the live-fire testing to be corrected and integrated into
12 the system or munition design before production is begun.

5MP 13 “(2) Before full-scale engineering development of the
14 system or munitions program is begun, the Secretary concerned
15 shall submit to the Director the plan, schedule, and proposed
16 funding for live-fire testing of the system or program to be
17 carried out by the Secretary.

18 “(3) After such testing is completed, the Secretary
19 concerned shall submit to the Director a report (in both
20 classified and unclassified forms) on the test conducted by
21 the Secretary. Such report shall include--

22 “(A) a complete description of the firing parameters
23 used in the test;

24 “(B) an analysis of the effect on the target of each
25 test shot, with primary emphasis on effect on potential

1 casualties; *OR IN THE CASE OF A MUNITION, IT'S LETHALITY*

2 `` (C) a comparison (including a description and
3 justification of the [merit] and criteria used in
4 carrying out the comparison) of the results of such live-
5 fire test with results of--

6 `` (i) any live-fire test of the system ^{PLATFORM} or
7 munition that would be replaced by the system or
8 munition tested; or

9 `` (ii) if there is no system ^{PLATFORM} or munition that
10 would be replaced by the system ^{PLATFORM} or munition tested or
11 if such system ^{PLATFORM} or munition was not subjected to live-
12 fire tests, any live-fire test of the system or
13 munition that is the nearest competition to the
14 system ^{PLATFORM} or munition tested;

15 `` (D) a description of the potential shortcomings of
16 the system ^{PLATFORM} or munition that were revealed by the testing
17 and (if any were revealed) the plan of the Secretary
18 concerned to incorporate into the design of the ^{SYSTEM, PLATFORM} platform
19 or munition changes that ~~are considered cost effective~~ ?
20 ~~and~~ that are necessary to overcome such shortcomings; and

21 ? -- [Compare to subsection (c)(1)(B).]

22 ^{f)} `` (D) a test plan for further live-fire testing to
23 verify that the planned design changes are effective in
24 overcoming such shortcomings.

24 `` (4) If in any a case the Director determines that the

1 plan of the Secretary of a military department for a live-
2 fire test is inadequate to determine vulnerability of users
3 ~~of the target~~ ^{OF LETHALITY}, the Director may independently plan and carry
4 out a live-fire test of the system, ^{PLATFORM} ~~munitions~~, or ~~platform~~
5 involved. Such testing may be conducted at the same time as,
6 or after, a similar test by the Secretary concerned. Funds
7 for such testing shall be provided from the program budget
8 for the program concerned.

9 “(d) In the case of a live-fire test of a covered system
10 for which ~~actual~~ ^{substitute} foreign rounds are not available or of a
11 major munitions program for which ~~actual~~ ^{substitute} foreign targets are
12 not available, the Director--

13 “(1) shall establish plans for obtaining or
14 producing surrogate foreign rounds or surrogate foreign ~~TARGETS~~
15 or United States targets, as appropriate;

16 “(2) shall test the realism of such surrogates; and

17 “(3) when required, shall obtain such surrogate
18 rounds or targets.

19 “(e) Before production of a covered system or major
20 munitions program begins, the Director shall submit to the
21 Undersecretary a report on each live-fire test conducted with
22 respect to that system or program. Each such report shall
23 include an analysis of the adequacies and inadequacies of the
24 test and any differences in interpretation of the Director
25 and Secretary concerned of the firing results, and any

1 differences and conclusions. Each such report shall be
2 independent of, and uncoordinated with, the report of the
3 Secretary concerned and shall be submitted in both classified
4 and unclassified forms.

5 ^{Congress}
6 “(f) The ~~defense committees~~ shall have access to all
7 live-fire test data and all live-fire test reports held by or
8 produced by the Secretary of a military department or by the
9 Director.

10 “(g) In this section:

11 “(1) ‘Covered system’ means a weapon system program,
12 vehicle program, or weapon platform program that is a
13 major system within the meaning of that term in section
14 2302(5) of this title.

15 “(2) ‘Major munitions program’ means a munitions
16 program for which more than 1,000,000 rounds are planned
17 to be acquired.

18 “(3) ‘Live-fire testing’ means--

19 “(A) in the case of a weapon system, platform, or
20 vehicle under a covered system, testing for vulnerability
21 and survivability in combat by shooting foreign munitions
22 (including all threat munitions that would likely be
23 encountered by the system in combat) at the system,
24 platform, or vehicle configured for combat, with the *primary*
25 emphasis ~~on~~ testing vulnerability with respect to
potential user casualties; and

Under the firing
condition that would
normally be encountered
in combat

1 “(B) in the case of a major munitions program,
2 testing for lethality by shooting the munitions at
3 foreign targets configured for combat, including^{all} the
4 principal targets that the munitions are intended to be
5 used against in combat, ^{UNDER} ~~IN COMBAT CONDITIONS~~ ^{SIMULATED COMBAT CONDITIONS}

6 “(4) ‘Configured for combat’, with respect to a
7 weapon system, platform, or vehicle, means loaded or
8 equipped with all dangerous materials (including all
9 flammables and explosives) that would normally be on
10 board in combat.

11 “(5) ‘Defense committees’ means the Committees on
12 Armed Services and on Appropriations of the Senate and
13 House of Representatives.”.

14 (2) The table of sections at the beginning of such
15 chapter is amended by adding at the end thereof the following
16 new item:

 “2363. Covered systems and major munitions programs: live-
 fire testing.”.

17 (b) Section 2363 of title 10, United States Code, as
18 added by subsection (a) shall apply with respect to systems
19 and munitions programs that have not begun full-scale
20 engineering development by the end of the ____-day period
21 beginning on the date of the enactment of this Act.

BARBARA BOXER
6TH DISTRICT, CALIFORNIA

COMMITTEE ON THE BUDGET

COMMITTEE ON
GOVERNMENT OPERATIONS

SELECT COMMITTEE ON CHILDREN,
YOUTH, AND FAMILIES

WHIP AT LARGE



Congress of the United States
House of Representatives
Washington, D.C. 20515

March 27, 1986

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SONOMA
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Dear Tom:

Thanks so much for helping me out today. I am enclosing a copy of our bill and a brief summary.

I met today with a huge assortment of DoD representatives including reps. of the Services's IG organizations and one of the Board members from the Army's Board of Correction of Military Records, and one of the OSD counsels. Of course, it was all bad news for me.

The bill isn't needed, they say, because the mechanisms for whistleblowers already exist. That is, a whistleblower can ask the IG to look into cases of retaliation, go to the superior of his superior, apply to any number of boards and panels and then the Board of Corrections. No one wants to penalize whistleblowers, they say. This bill is going to encourage servicepersonnel with grievances of any sort to write to their member of Congress and ask for protection and then get an immediate hearing. There's no way to weed out cases. But WORST OF ALL....

...is the provision calling for judicial review de novo. This means if a person is acting to protect themselves from justified disciplinary action, or whatever, it will require time and resources by both the courts and the military to determine that. Also, there may be matters of fact involved, military fact, which should not be brought up in an open courtroom, that's why there has always been a separate system of military justice. And, let's face it, they say, the military is not supposed to be like civilian life. There are unpleasant things about it. But you can't go to court if you don't like where you're getting transferred or you don't like your assignment, etc.

Also, they asked, what if the case involves personnel in key positions abroad, or in other parts of the country, who would have to be pulled away from their duties?

I know this bill has large gaps and loopholes. I know we've taken on a real headache by drafting this for military personnel. I would appreciate any comments and suggestions. Thanks again for all your help. I'll call you next week.

Cordially,

Donna Martin

MILITARY WHISTLEBLOWER PROTECTION ACT

OVERVIEW

This legislation makes clear that anyone who retaliates against military personnel for reporting evidence of waste, fraud, abuse or mismanagement to Congress, or to the Inspector General, shall be subject to punishment.

Any military official, including a member of the Reserves, who believes he or she has been retaliated against for making such disclosures to Congress or to the Inspector General shall have the right to an immediate hearing before the appropriate service's Board of Correction of Military Records.

The Board for each service is composed of civilians who have the authority to correct errors and injustices in the records of service personnel. Under current law, the Boards may review discharges and dismissals, and provide for service personnel to receive back pay. The Boards "have an abiding moral sanction to determine, insofar as possible, the true nature of an alleged injustice and to take steps to grant thorough and fitting relief." (10 U.S.C. 1552, Note 46).

MAJOR POINTS OF THE LEGISLATION

1. The military whistleblower will be represented in proceedings before the Board by a judge advocate.
2. The Board shall have six months to render a decision.
3. If, after six months, a decision has not been made, the military whistleblower shall be deemed to have exhausted his or her administrative remedies and shall have the right to have his or her case heard in Federal Court.
4. The military whistleblower also has the right to have his or her case heard de novo in Federal Court after a decision has been made by Board.
5. If the Board finds in favor of the whistleblower, a report of its findings shall be forwarded to the Service Secretary and to the Department of Defense Inspector General.
6. The Inspector General will conduct an investigation and recommend to the Service Secretary appropriate corrective or disciplinary action against those who have taken reprisals against the individual, including the range of sanctions available in court martial proceedings.
7. The Inspector General will submit the report of the investigation to the House Government Operations Committee and the Senate Governmental Affairs Committee.

AIR FORCE SERGEANT THOMAS JONSSON

about This legislation was prompted by the case of Air Force Sergeant Thomas Jonsson. In September 1984, while serving as an airman at Travis Air Force Base in California, Jonsson became concerned by the exorbitant prices being charged for parts for the C-5A cargo plane. For instance, he discovered the now famous \$7600 coffee brewer and the \$670 naugahyde armrest. Jonsson went to a public interest group, the Project on Military Procurement, and then to Congress with his evidence of overpricing. He was especially frustrated because his own research demonstrated that the armrest could be produced on the base for no more than \$25 each, but his suggestion was rejected by his Air Force superiors.

Jonsson returned to Travis with letters and expressions of support from members of Congress, including Representative Boxer, warning that he was not to be retaliated against for bringing his charges of overpricing to Congress. He was finally given a financial bonus for his suggestion to reduce the price of the armrest. A year went by. In August, 1985, Airman Jonsson discovered that the computer documents on the armrest still indicated it was to be purchased off base for \$654. He looked up the prices on the other C-5A parts he had exposed the year before and found that most of the prices were the same, if not higher.

In September 1985, the Project on Military Procurement held a press conference, in which Representative Boxer participated, based on Jonsson's information. Shortly afterward, Jonsson experienced what he felt was retaliation for updating Members of Congress on the continued high costs of C-5A components. Although Jonsson received a routine promotion to Sergeant, his superiors reduced his job responsibilities and assigned someone to accompany him most of the time. Jonsson was told that he was being kept under constant surveillance because he had been poorly supervised from 1984 until the present. In addition, he was told that he would be required to get special permission to go on leave in the future.

Largely because of the involvement of the Project on Military Procurement and of Congress, Sergeant Jonsson has had his job responsibilities restored and he is no longer under constant surveillance. The Secretary of the Air Force has agreed to assign the Inspector General to look into the matter.

The Military Whistleblower Protection Act is necessary to encourage those like Thom Jonsson, who find find their reports of waste or inefficiency rejected or ignored by their superiors, to report that information to the Inspector General or to Congress. Such individuals must be given some assurance that their allegations of reprisal will be addressed administratively and, if necessary, by the courts.

8. The legislation is drafted to cover any personnel actions that may have taken place up to three years before the enactment date of the legislation.

THE NEED FOR THE BILL

1. Whistleblowers and Congress

Current law says that no one will restrict a member of the armed forces from communicating with a member of Congress. However, it does not cover situations in which an individual is retaliated against once he or she communicates with Congress.

This legislation specifically prohibits anyone from retaliating against a whistleblower for such Congressional communication and further affords the whistleblower a specific remedy for reversing any adverse personnel action.

Current law does not spell out that appropriate disciplinary or corrective action must be taken against those who harass a military whistleblower. This legislation requires the service secretary to take that action if it is warranted.

2. Whistleblowers and the Inspector General

Current law does prohibit anyone from taking a reprisal against an individual who reports waste, abuse or mismanagement to the Inspector General. It does not, however, provide for a specific remedy for those who are punished for their disclosures, nor for determining possible sanctions against those who do the punishing. The same remedies afforded the military whistleblower who goes to Congress, are extended to the whistleblower who makes disclosures to the Inspector General.

Robert M. Mavroules

HLC

March 21, 1986

99TH CONGRESS
2D SESSION

H. R. _____

IN THE HOUSE OF REPRESENTATIVES

(Mr. Dickinson)
Mr. MAVROULES introduced the following bill; which was referred
to the Committee on _____

A BILL

To amend title 10, United States Code, to establish in the
Department of Defense the position of Under Secretary of
Defense for Acquisition.

- 1 *Be it enacted by the Senate and House of Representatives*
- 2 *of the United States of America in Congress assembled,*

1 SECTION 1. ESTABLISHMENT OF POSITION OF UNDER SECRETARY OF
2 DEFENSE FOR ACQUISITION.

3 (a) IN GENERAL.--Chapter 4 of title 10, United States
4 Code, is amended by inserting after section 134 the following
5 new section:

6 ``§134a. Under Secretary of Defense for Acquisition:

7 appointment; powers and duties; precedence

8 `` (a) There is an Under Secretary of Defense for
9 Acquisition, appointed from civilian life by the President,
10 by and with the advice and consent of the Senate. The Under
11 Secretary shall be appointed from among persons who have
12 extensive experience in the defense industry, including a
13 strong managerial background in the private sector.

14 `` (b) Subject to the authority, direction, and control of
15 the Secretary of Defense, the Under Secretary of Defense for
16 Acquisition--

17 `` (1) is responsible for setting overall policy for,
18 and supervises, all acquisition activities of the
19 Department of Defense; and

20 `` (2) shall perform such duties and exercise such
21 powers as the Secretary of Defense may prescribe.

22 `` (c) The Under Secretary--

23 `` (1) is the senior procurement executive for the
24 Department of Defense for the purposes of section 16(3)
25 of the Office of Federal Procurement Policy Act (41

1 U.S.C. 414(3));

2 `` (2) is the Defense Acquisition Executive for
3 purposes of regulations and procedures of the Department
4 providing for a Defense Acquisition Executive; and

5 `` (3) to the extent directed by the Secretary,
6 supervises all other officers in the Office of the
7 Secretary of Defense who have procurement or acquisition
8 responsibilities (notwithstanding any law providing that
9 any such officer is responsible only to, and reports
10 directly to, the Secretary or the Deputy Secretary).

11 `` (d) The Under Secretary takes precedence in the
12 Department of Defense after the Secretary of Defense, the
13 Deputy Secretary of Defense, and the Secretaries of the
14 military departments.``.

15 (b) EXECUTIVE SCHEDULE II PAY GRADE FOR UNDER
16 SECRETARY.--Section 5313 of title 5, United States Code, is
17 amended by adding at the end thereof the following:

18 `` Under Secretary of Defense for Acquisition.``.

19 (c) CONVERSION OF UNDER SECRETARY FOR RESEARCH AND
20 ENGINEERING TO ASSISTANT SECRETARY LEVEL.--

21 (1) IN GENERAL.--The position of Under Secretary of
22 Defense for Research and Engineering is hereby
23 redesignated as Director of Defense Research and
24 Engineering. The Director of Defense Research and
25 Engineering is an Assistant Secretary of Defense.

1 (2) CONFORMING AMENDMENT.--Section 136(b) of title
2 10, United States Code (relating to Assistant Secretaries
3 of Defense), is amended by adding at the end the
4 following new paragraph:

5 ``(7) One of the Assistant Secretaries shall be the
6 Director of Defense Research and Engineering. The Director
7 shall perform such duties relating to research and
8 engineering as the Secretary of Defense may prescribe.''.
9

10 (3) ELIMINATION OF POSITION OF USD(R&E).--Section 135
11 of such title is amended as follows:

12 (A) Subsection (a) is amended by striking out the
13 first two sentences and inserting in lieu thereof the
14 following: ``There is an Under Secretary of Defense
15 for Policy, appointed from civilian life by the
16 President, by and with the advice and consent of the
17 Senate.''.
18

19 (B) Subsection (b) is amended by striking out the
20 second sentence.

21 (C) Subsection (c) is amended--

22 (i) by striking out ``and the Secretaries of
23 the military departments'' and inserting in lieu
24 thereof ``the Secretaries of the military
25 departments, and the Under Secretary of Defense
26 for Acquisition''; and

 (ii) by striking out the second sentence.

1 (D) The heading of such section is amended to
2 read as follows:

3 ``§135. Under Secretary of Defense for Policy: appointment;
4 powers and duties; precedence``.

5 (4) TECHNICAL AMENDMENT.--Section 5324 of title 5,
6 United States Code, is amended by striking out ``Under
7 Secretaries of Defense (2)`` and inserting in lieu
8 thereof ``Under Secretary of Defense for Policy``.

9 (5) SAVINGS PROVISION FOR INCUMBENT.--The
10 redesignation of the position of Under Secretary of
11 Defense for Research and Engineering as Director of
12 Defense Research and Engineering and the amendments made
13 by paragraphs (2), (3), and (4)--

14 (A) shall not affect the appointment in that
15 position of the person holding that position on the
16 date of the enactment of this Act; and

17 (B) shall not affect the rate of pay or other
18 benefits to which that person is entitled on the date
19 of the enactment of this Act as an Under Secretary of
20 Defense.

21 (d) GENERAL CONFORMING AMENDMENTS.--

22 (1) Section 136a(d) of title 10, United States Code
23 (relating to the Director of Operational Test and
24 Evaluation), is amended--

25 (A) by striking out ``reports`` and all that

1 follows in the first sentence and inserting in lieu
2 thereof ``reports to the Secretary of Defense through
3 the Under Secretary of Defense for Acquisition and
4 reports directly to the Under Secretary without
5 intervening review or approval.''; and

6 (B) by striking out ``Under Secretary of Defense
7 for Research and Engineering'' in the second sentence
8 and insert in lieu thereof ``Director of Defense
9 Research and Engineering''.

10 (2) Section 171(a) of such title (relating to the
11 Armed Forces Policy Council) is amended--

12 (A) by redesignating clauses (3) through (10) as
13 clauses (4) through (11), respectively;

14 (B) by inserting after clause (2) the following
15 new clause (3):

16 `` (3) the Under Secretary of Defense for
17 Acquisition;''; and

18 (C) by striking out ``Under Secretaries of
19 Defense'' in clause (7) (as so redesignated) and
20 inserting in lieu thereof ``Under Secretary of
21 Defense for Policy''.

22 (e) CLERICAL AMENDMENT.--The table of sections at the
23 beginning of chapter 4 of such title is amended by striking
24 out the item relating to section 135 and inserting in lieu
25 thereof the following new item:

- ``134a. Under Secretary of Defense for Acquisition:
appointment; powers and duties; precedence.
- ``135. Under Secretary of Defense for Policy: appointment;
powers and duties; precedence. .

[DISCUSSION DRAFT]
MARCH 5, 1986

99TH CONGRESS
1ST SESSION

H. R. _____

IN THE HOUSE OF REPRESENTATIVES

Mr. KASICH introduced the following bill; which was referred to
the Committee on _____

A BILL

To amend title 10, United States Code, to improve program
stability of major defense acquisition programs by
establishing new congressional authorization procedures and
improving cost schedule and performance control.

- 1 *Be it enacted by the Senate and House of Representatives*
- 2 *of the United States of America in Congress assembled,*

1 SECTION 1. ENHANCED PROGRAM STABILITY FOR MAJOR DEFENSE
2 ACQUISITION PROGRAMS.

3 (a) PROGRAM STABILITY.--

4 (1) Chapter 4 of title 10, United States Code, is
5 amended by inserting after section 139c the following new
6 section:

7 ``§139d. Major defense acquisition programs: enhanced program
8 stability

9 `` (a)(1) When a major defense acquisition program is
10 approved by Congress to proceed into the full-scale
11 engineering development stage, or into the production stage,
12 Congress shall authorize and appropriate funds for that stage
13 in a single amount sufficient to carry out that stage.

14 `` (2) A stage described in paragraph (1) may not begin
15 until Congress authorizes and appropriates funds for that
16 stage in an amount sufficient to carry out that stage.

17 `` (b)(1) The Secretary of Defense shall include in a
18 request to Congress for funding for a stage described in
19 subsection (a)(1) the following:

20 `` (A) In the case of the full-scale engineering
21 development stage--

22 `` (i) a baseline description of the total
23 program; and

24 `` (ii) the total program cost (including the cost
25 of all elements included in the baseline

1 description), which may not exceed the amount of the
2 independent estimate for that program submitted to
3 the Secretary under section 139c of this title.

4 `` (B) In the case of the production stage, a revision
5 of the most recent baseline description and of the most
6 recent total program cost.

7 `` (2) The Secretary shall include in the baseline
8 description of a program all elements related to the
9 development, production, and use of the system to be
10 developed under the program, including--

11 `` (A) system performance;

12 `` (B) number of end items;

13 `` (C) scheduling;

14 `` (D) testing;

15 `` (E) training; and

16 `` (F) logistics and operational and support needs.

17 `` (c)(1) If, in carrying out a stage described in
18 subsection (a)(1) for which Congress has approved funding,
19 the Secretary concerned determines that there is a
20 significant adverse system change--

21 `` (A) the Secretary concerned shall notify Congress
22 in writing of that determination and of the significant
23 adverse system change before the end of the 10-day period
24 beginning on the date that the determination is made; and

25 `` (B) except as provided in paragraph (2), funds

1 appropriated for that program may not be obligated on or
2 after the date of that determination.

3 `` (2) The prohibition in paragraph (1) on the obligation
4 of funds for a major defense acquisition program shall cease
5 to apply at the end of the 45-day period beginning on the
6 date on which the Secretary concerned submits the report
7 required under paragraph (1)(A).

8 `` (3) In this subsection, 'significant adverse system
9 change', with respect to a program, means--

10 `` (A) a reduction in the capability of the system
11 being acquired under the program that results in a lower
12 capability for the system than is specified in the
13 current baseline description; or

14 `` (B) an increase of more than 5 percent in the
15 current total program cost above the total program cost
16 associated with that baseline description.

17 `` (d)(1) After Congress authorizes and appropriates funds
18 for a stage described in subsection (a)(1), the Secretary of
19 Defense or the Secretary concerned may (except as provided in
20 subsection (c)) change the current baseline description with
21 respect to the program and the total program cost associated
22 with that baseline description.

23 `` (2) The Secretary of Defense or the Secretary concerned
24 shall notify the Committees on Armed Services of the Senate
25 and House of Representatives of a change under paragraph (1)

1 not later than 10 days after the date on which the change is
2 made.

3 `` (3) Except for a change required by mandatory safety
4 concerns, authority under paragraph (1) may only be
5 delegated--

6 `` (A) in the case of the Secretary of Defense, to the
7 Deputy Secretary of Defense; and

8 `` (B) in the case of a Secretary of a military
9 department, to the Under Secretary of that military
10 department.

11 `` (e) In this section, `major defense acquisition
12 program' has the meaning given that term in section
13 139a(a)(1) of this title.``.

14 (2) The table of sections at the beginning of such
15 chapter is amended by inserting after the item relating
16 to section 139c the following new item:

``139d. Major defense acquisition programs: enhanced cost
control.``.

17 (b) APPLICABILITY.--Section 139d of title 10, United
18 States Code, as added by subsection (a), shall apply to major
19 defense acquisition programs for which the full-scale
20 engineering development stage is begun after September 30,
21 1987.

99th CONGRESS

2d SESSION

H.R.

(Original signature of Member)

HLC

To require the Secretary of Defense to conduct a test program to streamline the efficiency of the management structure of major defense acquisition programs.

IN THE HOUSE OF REPRESENTATIVES

, 19

Mr. MAVROULES introduced the following bill; which was referred to the Committee on

A BILL

1 Be it enacted by the Senate and House of Representatives of the United
2 States of America in Congress assembled,

1 SECTION 1. EXPERIMENTAL STREAMLINING OF MANAGEMENT OF MAJOR
2 DEFENSE ACQUISITION PROGRAMS.

3 (a) IN GENERAL.--(1) The Secretary of Defense shall
4 conduct, through the Secretaries of the military departments,
5 a test program with respect to increasing the efficiency of
6 the management structure of major defense acquisition
7 programs by reducing the number of officials through whom a
8 program manager reports to the senior procurement executive
9 of the military department concerned.

10 (2) The Secretary shall require that the Secretary of
11 each military department designate two major defense
12 acquisition programs of that department to participate in the
13 test program described in paragraph (1).

14 (3) A program may be designated under paragraph (2) only
15 if the program has not proceeded into full-scale engineering
16 development as of September 30, 1986.

17 (b) GUIDELINES.--The Secretary of Defense shall issue
18 guidelines governing the management of the major defense
19 acquisition programs designated by the Secretaries of the
20 military departments under subsection (a)(2). Such guidelines
21 shall include the following requirements:

22 (1) The Secretary concerned shall designate a program
23 executive officer for each program.

24 (2) The program manager for each program shall report
25 directly, without intervening review or approval, to the

1 program executive officer for that program. The program
2 manager shall consider recommendations received from the
3 competition advocate for the department with respect to
4 decisions concerning that program.

5 (3) The program executive officer for a program shall
6 report directly, without intervening review or approval,
7 to the senior procurement executive of the military
8 department concerned designated pursuant to section 16(3)
9 of the Office of Federal Procurement Policy Act (41
10 U.S.C. 414(3)).

11 (4) The competition advocate for the department may
12 appeal to the program executive officer a decision of the
13 program manager with respect to that program.

14 (c) DEFINITION.--In this section, ``major defense
15 acquisition program'' has the meaning given that term in
16 section 139a(a)(1) of title 10, United States Code.

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Congress of the United States
House of Representatives
Washington, D.C. 20515

May 6, 1986

COMMITTEES:
BUDGET
INCOME SECURITY TASK FORCE
STATE AND LOCAL GOVERNMENT TASK FORCE
BUDGET PROCESS TASK FORCE
INTERIOR AND INSULAR AFFAIRS
SUBCOMMITTEE ON ENERGY AND ENVIRONMENT
SUBCOMMITTEE ON GENERAL OVERSIGHT, NATIONAL
POWER AND FOREST MANAGEMENT
SUBCOMMITTEE ON NATIONAL PARKS AND RECREATION
VETERANS' AFFAIRS
MILITARY REFORM CAUCUS
CO-CHAIRMAN

The Honorable Les Aspin
Chairman
House Armed Services Committee
2120 Rayburn House Office Building
Washington, D.C. 20515

Dear Les:

I know that you have assigned some members of your staff to investigate the conduct with which the Army has performed live-fire tests on the Bradley Fighting Vehicle. I think it was an appropriate move on your part and I'm glad the Committee is taking a serious look at the subject.

As you know, the most recent of controversies to arise concerning the tests deals with a restowage of water cans directly in front of the shot line for Shot 1 of Phase II. Last week, I was given an OSD explanation of this restowage (attached) that I thought your investigating team would find of interest. Today, my office received a detailed memorandum on the same subject that contradicts the OSD explanation (attached) and I am forwarding that memo on to you in the hope that it will prove useful also.

My best to the Committee in its upcoming deliberations.

Best personal regards,

Denny Smith
Member of Congress

cc: The Honorable Bill Dickinson
Enclosures

Outline On Amendment To Adjust

DOD Forecasting of Inflation

1. Eliminate the use of a special multiplier for budgeting inflation in major weapon systems accounts.
2. Use a GNP deflator (a non-defense deflator) for forecasting inflation in future budgets (as of Fiscal 87).
3. Require that the economic assumptions for estimating inflation be clearly outlined and described in the DOD budget submission.
4. Task the General Accounting Office to ~~Recommend~~ an accounting process for an annual reconciliation between the inflation forecast and the on, and actual rates (as based on the economic assumptions submitted with the budget.)

develop