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REPORT TO THE CONGRESS



Status Of Selected Major Weapon Systems

Department of Defense

*BY THE COMPTROLLER GENERAL
OF THE UNITED STATES*

PSAD-75-83

MAY 30, 1975

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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To the President of the Senate and the
Speaker of the House of Representatives

This is our fifth semiannual report to the Congress on the status of selected major weapon systems being acquired by the Department of Defense. All cost, schedule, and performance data in this report was extracted from the selected acquisition report released by the Department. We have not audited or verified the data.

We made our review pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

We are sending copies of this report to the Director, Office of Management and Budget; the Secretary of Defense; and the Secretaries of the Army, Navy, and Air Force.

A handwritten signature in cursive script, appearing to read "James A. Stacks".

Comptroller General
of the United States

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ABBREVIATION

SAR selected acquisition report

STATUS OF SELECTED MAJOR WEAPON SYSTEMS

R In 1969 the Congress asked us to report periodically on the progress and status of various system acquisitions. We issued reports annually from 1970 through 1972. Since then we have issued reports semiannually. This report includes information the Department of Defense reported on changes to the estimated costs of 50 major weapon systems on the selected acquisition report (SAR) during the 6 months ended December 31, 1974. There was a net increase of \$13,242.5 million in estimated costs for these systems.

In addition, the report includes information on 22 systems that were 12 months or more behind the planned schedule for delivery of the first increment and performance data on 17 systems which, in our opinion, major improvements and/or reductions in planned performance had occurred. We have not audited or verified the cost, schedule, and performance information in SAR.

Appendix I provides details on the cost changes that occurred between June 30 and December 31, 1974. Appendix II shows the cost data appearing on the December 31, 1974, SAR. Appendix III shows the planning and development estimates for program quantities and unit costs and changes for the 6 months ended December 31, 1974. Appendix IV lists systems which had reported schedule slippages of 12 months or more in the planned delivery dates and systems which, in our opinion, major improvements or reductions in planned performance had occurred as of December 31, 1974.

CURRENT ESTIMATE CHANGES FROM
JUNE 30 TO DECEMBER 31, 1974

An analysis of cost changes on 50 weapon systems on SAR during the 6 months ended December 31, 1974, is shown in the table below. There was a net increase in total cost of \$13,242.5 million. The Office of the Secretary of Defense established categories of the cause of cost variances for use on SAR, and weapons program managers quantify the impact of the causes on each program. Quantity changes accounted for a net increase of \$2,838.4 million, and other changes, such as engineering, schedule, economic, and revisions in estimates in the 50 programs, amounted to a net increase of \$10,404.1 million.

<u>Type of change</u>	<u>Army</u>	<u>Navy</u>	<u>Air Force</u>	<u>Change during period</u>
	(millions)			
Total quantity increase--net	\$ <u>-643.4</u>	\$ <u>2,914.4</u>	\$ <u>567.4</u>	\$ <u>2,838.4</u>
Other changes:				
Engineering	13.0	260.9	288.0	561.9
Support	-6.7	602.5	187.2	783.0
Schedule	270.8	2,176.6	965.9	3,413.3
Economic	2,898.7	481.9	1,278.6	4,659.2
Estimating	66.2	-86.7	716.6	696.1
Sundry	<u>24.6</u>	<u>141.2</u>	<u>124.8</u>	<u>290.6</u>
Total	<u>3,266.6</u>	<u>3,576.4</u>	<u>3,561.1</u>	<u>10,404.1</u>
Total	\$ <u>2,623.2</u>	^a \$ <u>6,490.8</u>	\$ <u>4,128.5</u>	\$ <u>13,242.5</u>
Number of systems (total 50)	15	24	11	50

^aTotal includes increase of \$19.8 million related to the Air Force portion of the Sparrow F and Sidewinder missile programs.

COST DATA COMPARISON FROM
JUNE 30 TO DECEMBER 31, 1974

<u>Number of systems</u> <u>(note b)</u>	<u>Planning</u> <u>estimate</u>	<u>Development</u> <u>estimate</u>	<u>Cost change (note a)</u>		<u>Current</u> <u>estimate</u>
			<u>Quantity</u> <u>increase or</u> <u>decrease (-)</u>	<u>Other</u>	
			<u>(millions)</u>		
Army (13)	\$14,985.8	\$ 16,040.2	\$ -493.8	\$ 6,285.7	\$ 21,832.1
Navy (24) (note c)	44,437.6	52,569.4	-118.5	15,092.0	67,542.9
Air Force (10)	<u>28,861.3</u>	<u>36,466.9</u>	<u>-2,744.9</u>	<u>18,316.3</u>	<u>52,038.3</u>
Total at 6-30-74 (47)	<u>\$88,284.7</u>	<u>\$105,076.5</u>	<u>\$-3,357.2</u>	<u>\$39,694.0</u>	<u>\$141,413.3</u>
Army (13)	\$14,985.8	\$ 16,040.2	\$-1,137.2	\$ 9,302.4	\$ 24,205.4
Navy (24) (note c)	44,437.6	52,529.8	2,889.8	18,614.1	74,033.7
Air Force (10)	<u>28,861.3</u>	<u>36,466.9</u>	<u>-2,177.5</u>	<u>21,877.4</u>	<u>56,166.8</u>
Total at 12-31-74 (47)	<u>\$88,284.7</u>	<u>\$105,036.9</u>	<u>\$ -424.9</u>	<u>\$49,793.9</u>	<u>\$154,405.9</u>
Difference for 47 systems	<u>-</u>	<u>\$ -39.6</u>	<u>\$ 2,932.3</u>	<u>\$10,099.9</u>	<u>\$ 12,992.6</u>
Add changes in current estimate for:					
Systems added to SAR (1)	-	-	-	251.9	251.9
Systems deleted from SAR (2)	<u>-</u>	<u>-</u>	<u>-</u>	<u>-2.0</u>	<u>-2.0</u>
Changes in current estimated for 50 systems	<u>-</u>	<u>\$ -39.6</u>	<u>\$ 2,932.3</u>	<u>\$10,349.8</u>	<u>\$ 13,242.5</u>

^aThese cost changes represent total change for each system from the time a development estimate is established--generally the time a development contract is awarded for a system--through the current estimate, or the date of SAR--in this case December 31, 1974.

^bThe total number of systems on SAR at June 30, 1974, was 49 and at December 31, 1974, was 48. Two systems--the Army SAFEGUARD and Air Force SRAM--were deleted from SAR as of September 30, 1974. One Army system--AN/TTC-39--was added to SAR as of September 30, 1974.

^cThe estimates for the Navy systems include costs of the Air Force portion of the SPARROW F and SIDEWINDER AIM-9L missile programs. For example, the Navy's estimate at June 30, 1974, included Air Force costs of \$510.4 million for the SPARROW F and \$241.2 million for the SIDEWINDER. The estimate at December 31, 1974, included Air Force costs of \$530.7 million for the SPARROW F and \$240.7 million for the SIDEWINDER.

Following is a summary by military service of cost changes during the 6 months ended December 31, 1974, for 50 major weapon systems as reported on SAR.

ARMY NET INCREASE OF \$2,623.2 MILLION:

IMPROVED HAWK MISSILE:

Increase of \$130.5 million:

Result of (1) \$101.2 million increase due to procuring additional missiles, (2) \$25.9 million increase for research and development and mobility studies, and (3) \$3.4 million increase due to applying higher inflation provisions.

LANCE MISSILE:

Decrease of \$94.3 million:

Result of (1) \$71.5 million decrease based on decision not to procure a nonnuclear LANCE and deletion of procurement in fiscal years 1976 and 1977, (2) \$21.9 million decrease based on latest Department of the Army inflation indexes, and (3) \$0.9 million decrease due to refining estimates based on actual costs.

TOW MISSILE:

Increase of \$62.8 million:

Net result of (1) \$34.4 million increase in quantity of missiles and launchers, (2) \$30.9 increase to develop additional armor protection for TOW crews and continued development of night sight, (3) \$7.3 million increase due to applying higher inflation provisions, (4) \$2 million decrease due to refining estimates for night sight development, and (5) \$7.8 million decrease in initial spares and adjustment of requirements for mounting kits, battery chargers, and training sets.

DRAGON MISSILE:

Increase of \$29 million:

Net result of (1) \$13.9 million increase due to applying higher inflation provisions, (2) \$8.4 million net quantity increase due to a decrease in missiles (\$18.6 million)

DRAGON MISSILE (continued):

and night sight program (\$11.3 million) and an increase for tracker equipment (\$38.3 million), (3) \$9.4 million increase for development effort of launch simulator and night sight, and (4) \$2.7 million decrease for ground support equipment, training equipment, and night sight spares.

SAFEGUARD BALLISTIC MISSILE DEFENSE SYSTEM:

Decrease of \$2 million:

Result of termination impacts and returns based on known settlements. The SAFEGUARD program was dropped from SAR as of September 30, 1974.

SAM-D SURFACE-TO-AIR MISSILE SYSTEM:

Decrease of \$624.5 million:

Net result of (1) \$393.8 million decrease in inflation associated with the reduction in the Continental United States (CONUS) fire sections and application of revised inflation provisions, (2) \$508.6 million decrease due to reduction in CONUS fire sections, (3) \$282.1 million increase due to stretching out the program an additional year, (4) \$0.6 million increase due to salary increases, and (5) \$4.8 million decrease due to correcting overstatement of engineering change in the June 30, 1974 SAR.

SCOUT VEHICLE:

Decrease of \$222.5 million:

Result of canceling the procurement program and reducing the development program.

TACFIRE (TACTICAL FIRE DIRECTION SYSTEM):

Increase of \$2.5 million:

Result of applying higher inflation provisions.

UTTAS HELICOPTER:

Increase of \$539.7 million:

Net result of (1) \$563.9 million increase due to applying higher inflation provisions, (2) \$5.8

UTTAS HELICOPTER (continued):

million increase for contract overrun, (3) \$11 million increase due to refining estimates, (4) \$5.8 million increase as a result of congressional reduction in fiscal year 1975 and addition of management reserve, and (5) \$46.8 million decrease due to spread of the procurement profile for low rate initial production.

HLH HELICOPTER:

Decrease of \$35.4 million:

Result of deleting second prototype and some reliability and maintainability tasks and restructuring the remaining advanced technology component/prototype efforts.

MICV VEHICLE:

Increase of \$64.8 million:

Net result of (1) \$36.1 million increase due to applying higher inflation provisions, (2) \$18 million increase due to refining estimates, (3) \$6.5 million increase for contract cost overrun, (4) \$3.8 million increase for added testing and support costs, (5) \$0.7 million increase due to program slippage, (6) \$0.1 million increase for added design effort, and (7) \$0.4 million decrease due to not completing the two canceled prototypes.

STINGER MISSILE:

Increase of \$25.5 million:

Result of applying higher inflation provisions.

AAH HELICOPTER:

Increase of \$579.7 million:

Result of (1) \$547.8 million increase due to applying higher inflation provisions, (2) \$6 million increase for contract cost overrun, and (3) \$25.9 million increase due to extending contracts by 6 months because contractors could not meet original cost and schedule targets.

XML TANK:

Increase of \$1,915.5 million:

Result of (1) \$1,912.4 million increase due to applying higher inflation provisions, (2) \$2.9 million increase for a production study and tests of the LEOPARD II tank, and (3) \$0.2 million increase due to refining estimates.

AN/TTC-39:

Increase of \$251.9 million:

Result of applying higher inflation provisions. The AN/TTC-39 was added to SAR for the first time as of September 30, 1974.

NAVY NET INCREASE OF \$6,490.8 MILLION:

MARK-48 TORPEDO:

Increase of \$290.5 million:

Net result of (1) \$249.3 million increase due to stretching out the program, (2) \$28.4 million increase due to applying higher inflation provisions, (3) \$12.9 million increase in quantity of torpedoes, and (4) \$0.1 million net decrease due to refining estimates.

F-14A AIRCRAFT:

Increase of \$1,296.8 million:

Net result of (1) \$946.5 million increase due to quantity changes in fiscal years 1976 and 1977 and quantity additions in fiscal years 1978 through 1980, (2) \$355.6 million increase due to extending program from fiscal year 1977 to fiscal year 1980, and (3) \$5.3 million decrease due to refining estimates.

SSN-688 SUBMARINE:

Increase of \$653.2 million:

Net result of (1) \$656.7 million increase due to adding two submarines to program, (2) \$0.1 million increase due to refining estimates, and (3) \$3.6 million decrease due to reducing military construction requirements.

AEGIS ADVANCED SURFACE MISSILE SYSTEM:

Increase of \$27.5 million:

Result of (1) \$6.1 million due to applying higher inflation provisions and (2) \$21.4 million due to congressional reduction in fiscal year 1975 funds and additional test firings.

DLGN-38 CLASS SHIP:

Increase of \$1.3 million:

Result of adjusting program estimate for inflation.

SPARROW F MISSILE:

Decrease of \$0.8 million: (Navy \$21.1 million decrease,
Air Force \$20.3 million increase)

Net result of (1) \$14.9 million increase due to DSARC III decision to reduce fiscal year 1976 quantities and increase fiscal years 1980 and 1981 quantities, (2) \$4 million increase for adding 15 RDT&E missiles to program, (3) \$9.1 million increase due to refining estimates, (4) \$1.2 million increase due to supporting improved seeker and active fuze development, and (5) \$30 million decrease due to transferring improved seeker funds to advanced missile systems engineering program.

POSEIDON MISSILE:

Increase of \$63 million:

Result of (1) \$28 million increase due to refining estimates based on recent cost experience and (2) \$35 million increase due to adding fiscal year 1980 support costs to program.

CONDOR MISSILE:

Increase of \$7.7 million:

Net result of (1) \$6.4 million increase due to applying higher inflation provisions, (2) \$19.5 million increase due to adding 45 missiles to program, (3) \$6.5 million increase due to testing of pilot missiles in preparation of DSARC III and increasing production gap because of no procurement in fiscal year 1975, (4) \$24.5 million decrease due to congressional action eliminating active radar seeker program, and (5) \$0.2 million decrease in fiscal year 1974 costs.

CVAN-68 CLASS AIRCRAFT CARRIER:

Increase of \$69.4 million:

Result of (1) \$23.2 million increase for inflation, (2) \$6.7 million increase due to characteristic changes necessary to meet new operational requirements, (3) \$35.6 million increase due to contract cost overrun due primarily to production man-hour overrun and increases in overhead and other variables, and (4) \$3.9 million increase due to costs incurred for previously unbudgeted outfitting requirements and revised planning for CVAN-68 postdelivery corrections to be accomplished at a shipyard other than the building yard.

A-7E AIRCRAFT:

Increase of \$180.9 million:

Net result of (1) \$111.9 million increase due to adding 20 aircraft to the program, (2) \$25.6 million increase due to incorporating the inflight engine condition monitor system and a larger capacity computer into the navigation weapons delivery system, (3) \$50.1 million increase due to stretching out the program an additional year, and (4) \$6.7 million decrease due to refining estimates based on final pricing of contract modifications.

PHOENIX MISSILE:

Increase of \$20.4 million:

Result of (1) \$15 million due to refining estimates based on prior year's cost experience and (2) \$5.4 million due to overrun of target costs on fiscal year 1972 procurement.

S-3A AIRCRAFT:

Increase of \$33.4 million:

Net result of (1) \$48.6 million increase due to applying higher inflation provisions, (2) \$8.8 million increase due to incorporating provisions for Harpoon missile in last production buy, (3) \$6.2 million net decrease due to reducing initial spares by \$19.2 million and adding \$12.8 million for tactical programing capability to be provided by the Fleet Airborne

S-3A AIRCRAFT (continued):

Software Test Site and \$0.2 million due to weapon system trainer facility at Cecil Field, Florida, and (4) \$17.8 million decrease due to refining estimates.

E-2C AIRCRAFT:

Increase of \$306.2 million:

Net result of (1) \$241.2 million increase due to adding 13 aircraft to program, (2) \$72.7 million increase due to support costs for the 13 aircraft, and (3) \$7.7 million decrease due to refining estimates.

LHA SHIP:

Increase of \$110.5 million:

Net result of (1) \$100 million increase due to contract overrun, (2) \$8.2 million increase due to adjusting support costs, (3) \$2.7 million increase due to adjustment for inflation, and (4) \$0.4 million decrease for refining estimates.

VAST (VERSATILE AVIONICS SHOP TEST SYSTEM):

Decrease of \$1.3 million:

Net result of (1) \$6.4 million decrease due to correcting error in prior inflation computations, (2) \$15.5 million decrease due to quantity reduction of 4 systems, (3) \$0.2 million decrease in engineering costs due to quantity reduction, (4) \$0.4 million increase due to rephasing program, (5) \$0.9 million increase due to cost growth in compatibility engineering change proposals, (6) \$19.7 million increase in support costs due to rephasing the program, refurbishing, and relocating 22 VAST stations, modification of computer subsystems, expand frequency range, and continue technical support of VAST stations at contractor plants, and (7) \$0.2 million decrease due to refining estimates.

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P-3C AIRCRAFT:

Increase of \$449.3 million:

Net result of (1) \$375.4 million increase due to adding 27 aircraft to the program, (2) \$77.7 million increase due to support costs for the 27 aircraft, and (3) \$3.8 million decrease due to refining estimates.

DD-963 SHIP:

Increase of \$34.2 million:

Net result of (1) \$35 million increase due to future characteristics changes for Harpoon on last seven ships, cable and foundation for LAMPS MARK I helicopter for all ships, and adding classic outboard system to three ships, (2) \$2.4 million increase due to adjustment for inflation, (3) \$1.2 million increase in contract estimate for the Mark 86 gun fire control system for the last seven ships of program, and (4) \$4.4 million decrease due to adjusting support costs.

HARPOON MISSILE:

Increase of \$354.9 million:

Result of (1) \$104.9 million increase due to applying higher inflation provisions, (2) \$23 million increase due to altering the sustainer section target seeker, wing and fins, other subassemblies, and additional testing, (3) \$33 million increase due to uncertainty in contractor procurement support, and (4) \$194 million increase due to uncertainty in outyear costs of prime contractor subcontracts and manufacturing of complex subassemblies.

PHM SHIP:

Increase of \$150.2 million:

Net result of (1) \$349.7 million increase due to reestimating and rescheduling of overall program, (2) \$0.7 million increase due to replacing cost for damaged 76 millimeter gun, (3) \$40 million increase for production startup costs, (4) \$4.8 million increase due to extending material leadtime from 28 to 40 months and increased outfit and post

PHM SHIP (continued):

delivery costs, and (5) \$245 million decrease due to deleting five ships from program and stopping work on PHM-2 to complete PHM-1 within available funds.

TRIDENT UNDERSEA STRATEGIC MISSILE SYSTEM:

Increase of \$707 million:

Net result of (1) \$261.6 million increase due to applying higher inflation provisions, (2) \$697 million increase due to stretching out the program because of a change in shipbuilding rate, (3) \$37.7 million increase due to support costs for equipment testing, community impact assistance, and conventional ammunition-handling facilities, and (4) \$289.3 million decrease due to refining estimates.

PF SHIP:

Increase of \$1,556.9 million:

Result of (1) \$761.8 million increase due to adding 6 ships to program, (2) \$217.1 million increase due to providing for procurement and installation of the Phalanx close in weapon system on 46 ships, (3) \$43.2 million increase due to refining estimates for Government-furnished equipment (ordnance), and (4) \$534.8 million increase due to accommodating the extended 49 follow-on ships production plan necessitated by reduction of ships from 7 to 3 in fiscal year 1975 and the considerably longer leadtime being experienced in acquiring material and equipment.

SIDEWINDER AIM-9L MISSILE:

Increase of \$23.2 million: (Navy \$23.7 million increase, Air Force \$0.5 million decrease)

Net result of (1) \$21.5 million increase due to adding 800 missiles to program, (2) \$0.5 million increase due to redesigning effort, (3) \$5.4 million increase due to spares, data costs, and production and fleet-support costs, (4) \$0.2 million increase due to test and evaluation effort, (5) \$2.7 million decrease due to stretching out deliveries, (6) \$1 million decrease resulting from planned Air Force buy of AIM-9H in fiscal year 1976, and (7) \$0.7 million decrease primarily due to refining estimates.

PHALANX ANTI-SHIP-MISSILE DEFENSE SYSTEM:

Increase of \$133.5 million:

Net result of (1) \$69.2 million increase due to operational suitability models and additions for fiscal year 1977 not previously considered, additional support costs due to stretching out the program from 4 to 6 years, increased material costs for production tooling and test equipment, and delay in procuring spares, (2) \$82.9 million increase due to slipping first production lots from fiscal year 1976 to 1977 and transferring units from fiscal years 1976-79 to fiscal years 1980 and 1981, (3) \$1.5 million decrease due to refining estimates, and (4) \$17.1 million decrease due to congressional reduction of fiscal year 1975 request which eliminated three units from the research and development program.

CH-53E HELICOPTER:

Increase of \$22.9 million:

Net result of (1) \$15.8 million increase due to applying higher inflation provisions, (2) \$9.4 million increase due to refining estimates, and (3) \$2.3 million net decrease due to a \$12.2 million decrease in support costs and \$9.9 million increase for initial spares.

AIR FORCE NET INCREASE OF \$4,128.5 MILLION:

AWACS (AIRBORNE WARNING AND CONTROL SYSTEM):

Increase of \$1,121.8 million:

Net result of (1) \$650.8 million increase due to stretching out the production program, (2) \$29.9 million increase due to directed engineering changes based on OSD program review, (3) \$53 million increase due to refining engineering change proposal allowance consistent with plans for enhanced configuration, (4) \$104.3 million increase due to reestimating as a result of DSARC IIB program enhancements, (5) \$7 million increase to add maritime capability, (6) \$108.3 million increase due to reevaluation of requirements, (7) \$74.1 million increase due to revising and refining estimates for Government and peculiar support equipment and initial spares, (8) \$68.6 million increase due to added enhancement for electronic countermeasures hardness, (9) \$34 million increase due to reestimating

AWACS (continued):

and rephasing program enhancements, (10) \$15 million increase due to restructuring test program because of later availability of first production aircraft, (11) \$2.2 million increase for additional European demonstration support and subcontractor overtime, (12) \$20.3 million decrease due to refining estimates for support requirements and overhead adjustments, and (13) \$5.1 million decrease due to transferring costs to another program element.

F-5E AIRCRAFT:

Increase of \$8.5 million:

Net result of (1) \$6 million increase due to added stability and control test requirement and system tests, (2) \$4.3 million increase to convert 71 aircraft from the Military Assistance Service Funded program to the USAF program, and (3) \$1.8 million decrease due to transferring direct user funding of test centers to F-5F program, reducing funding requirements for lifetime fatigue tests, and refining estimates.

MAVERICK MISSILE:

Increase of \$184.5 million:

Net result of (1) \$181.1 million due to increase in quantity, (2) \$13.9 million increase due to training, support equipment and data associated with quantity increase, (3) \$5.8 million decrease due to congressional reduction, (4) \$4.5 million decrease in initial spares, and (5) \$0.2 million decrease to closeout the research and development program and fiscal year 1971 standby costs.

F-111 AIRCRAFT:

Increase of \$82.2 million:

Net result of (1) \$205.5 million increase due to adding fiscal year 1975 buy of 12 aircraft to program, (2) \$122.9 million decrease due to impounding fiscal year 1975 funds and 12 aircraft pending congressional action on Presidential recision request, and (3) \$0.4 million decrease due to spares adjustment and refining estimates of nearly completed contracts.

B-1 AIRCRAFT:

Increase of \$1,939 million:

Result of (1) \$1,007 million increase due to applying higher inflation provisions, (2) \$270.7 million increase due to revising estimate based on engineering estimates versus parametric cost estimating methodology, (3) \$375 million increase due to increasing leadtime requirements and procurement schedule impact from delayed start, (4) \$54.9 million increase due to revising estimates for major contractors, program development tasks, and other Government costs, (5) \$159.4 million increase due to effort related to engine component improvement program, (6) \$65 million increase due to delaying start of aircraft number 4, and (7) \$7 million increase for integrated test facility provision.

F-15 AIRCRAFT:

Increase of \$2.1 million:

Net result of (1) \$63.1 million increase due to reestimating initial spares and (2) \$61 million decrease resulting from increased production rate to sustain a nine aircraft per month delivery schedule through fiscal year 1979.

A-10 AIRCRAFT:

Increase of \$440.4 million:

Net result of (1) \$282.6 million increase due to applying higher inflation provisions, (2) \$18.1 million increase due to adjusting peculiar support equipment and initial spares, (3) \$63.7 million increase due to additional avionics, (4) \$85.4 million increase due to adding simulators to program, (5) \$8.8 million decrease due to rescheduling the procurement program, and (6) \$0.6 million decrease to reflect actual cost of A-10/A-7D flyoff.

MINUTEMAN III MISSILE:

Increase of \$317.8 million:

Net result of (1) \$262.6 million increase to procure 50 missiles in fiscal year 1976, (2) \$346.7 million increase due to producing Mark 12A reentry vehicle and related initial spares, (3) \$30.8 million increase due to upgrading silo, missile performance measurement system, various studies, and inflight hardness, (4) \$25

MINUTEMAN III MISSILE (continued):

million increase due to realigning costs from MINUTEMAN II and upgrading MINUTEMAN III Force Modernization, (5) \$4.4 million increase due to travel, overtime, reentry work deferred from fiscal year 1974, and rephased improved guidance effort, (6) \$24.5 million decrease due to realigning costs between MINUTEMAN II and III and transferring costs to other program elements, (7) \$312 million decrease due to transferring costs to ABRES program element, (8) \$7.1 million decrease due to congressional deletion of two boosters, and (9) \$8.1 million decrease due to prior-year adjustments and repricings.

A-7D AIRCRAFT:

Increase of \$69.9 million:

Net result of (1) \$104.9 million increase due to buying 24 aircraft, related peculiar support equipment and initial spares for fiscal year 1975, (2) \$34.4 million decrease due to impounding fiscal year 1975 funds and 24 aircraft pending congressional action on Presidential rescission request, and (3) \$0.6 million decrease due to adjusting prior years initial spares.

AABNCP (ADVANCED AIRBORNE COMMAND POST):

Decrease of \$37.7 million:

Result of (1) \$23.3 million decrease due to procuring aircraft 5, 6, and 7 in fiscal year 1977 instead of 1978, (2) \$11 million reduction in provision for economic change due to earlier procurement of aircraft under firm fixed-price contract option, (3) \$2.8 million decrease due to congressional reduction in fiscal year 1975 military construction funds, and (4) \$0.6 million decrease due to prior-year adjustment.

PROGRAM COST DATA APPEARING ON DECEMBER 31, 1974, SAR

<u>System</u>	<u>Planning estimate</u>	<u>Development estimate</u>	<u>Cost change</u>		<u>Current estimate</u>
			<u>Quantity increase or decrease (-)</u>	<u>Other</u>	
<u>(millions)</u>					
Army (13):					
IMPROVED HAWK	\$ 335.5	\$ 588.2	\$ -3.9	\$ 398.6	\$ 982.9
LANCE	586.7	652.9	74.3	124.2	851.4
TOW	410.4	727.3	-73.1	387.9	1,042.1
DRAGON	382.2	404.2	13.3	291.9	709.4
SAM-D	4,916.8	5,240.5	-989.3	1,513.3	5,764.5
SCOUT (note a)	244.6	244.6	-168.4	-36.4	39.8
TACFIRE	123.6	160.5	32.3	101.0	293.8
UTTAS (note a)	2,307.3	2,307.3	-22.0	1,657.2	3,942.5
HLH (note a)	189.9	189.9	-	29.0	218.9
MICV	209.4	245.4	-.4	164.7	409.7
STINGER (note a)	473.8	473.8	-	188.0	661.8
AAH (note a)	1,800.2	1,800.2	-	1,297.7	3,097.9
XML Tank (note a)	<u>3,005.4</u>	<u>3,005.4</u>	<u>-</u>	<u>3,185.3</u>	<u>6,190.7</u>
	14,985.8	16,040.2	-1,137.2	9,302.4	24,205.4
New system added (1):					
AN/TTC-39 (note a)	<u>801.1</u>	<u>801.1</u>	<u>-</u>	<u>251.9</u>	<u>1,053.0</u>
Total	<u>\$15,786.9</u>	<u>\$16,841.3</u>	<u>\$-1,137.2</u>	<u>\$ 9,554.3</u>	<u>\$25,258.4</u>
System deleted as of September 30, 1974 (1):					
SAFEGUARD	\$ 4,185.0	\$ 4,185.0	\$-1,198.0	\$ 2,373.0	\$ 5,360.0

PROGRAM COST DATA APPEARING ON DECEMBER 31, 1974, SAR

<u>System</u>	<u>Planning estimate</u>	<u>Development estimate</u>	<u>Cost change</u>		<u>Current estimate</u>
			<u>Quantity increase or decrease (-)</u>	<u>Other</u>	
(millions)					
Navy (24):					
MARK-48 (note b)	\$ 720.5	\$ 1,753.8	\$ -457.1	\$ 551.0	\$ 1,847.7
F-14A (notes a, c)	6,166.0	6,166.0	-59.2	1,497.0	7,603.8
SSN-688	1,658.0	5,747.5	1,433.7	1,334.6	8,515.8
AEGIS	388.0	427.6	-	149.2	576.8
DLGN-38 (note d)	769.2	820.4	515.3	257.4	1,593.1
SPARROW F (note e)	151.5	707.7	-120.4	722.1	1,309.4
POSEIDON (note a)	4,568.7	4,568.7	-206.1	491.1	4,853.7
CONDOR	356.3	441.0	-197.0	176.2	420.2
CVAN-68 CLASS	1,919.5	2,036.2	-	591.0	2,627.2
A-7E (note a)	1,465.6	1,465.6	426.7	879.1	2,771.4
PHOENIX	370.8	536.4	44.3	594.0	1,174.7
S-3A	1,763.8	2,891.1	-118.2	549.2	3,322.1
E-2C (note a)	586.2	586.2	341.5	363.3	1,291.0
LHA (note a)	1,380.3	1,380.3	-436.9	347.0	1,290.4
VAST	241.1	312.0	-173.0	308.6	447.6
P-3C (note a)	1,294.2	1,294.2	1,349.0	530.1	3,173.3
DD-963	1,784.4	2,581.2	-	1,051.6	3,632.8
HARPOON (note f)	1,071.4	1,031.8	-	502.0	1,533.8
PHM (note a)	726.2	726.2	-245.0	776.5	1,257.7
TRIDENT (note a)	12,431.1	12,431.1	-	3,722.3	16,153.4
PF (note a)	3,244.5	3,244.5	761.8	2,825.2	6,831.5
SIDEWINDER AIM-9L (notes a, e)	233.4	233.4	47.5	115.9	396.8
PHALANX (note a)	568.5	568.5	-17.1	285.1	836.5
CH-53E (note a)	578.4	578.4	-	-5.4	573.0
Total	\$44,437.6	\$52,529.8	\$ 2,889.8	\$18,614.1	\$74,033.7

PROGRAM COST DATA APPEARING ON DECEMBER 31, 1974, SAR

<u>System</u>	<u>Planning estimate</u>	<u>Development estimate</u>	<u>Cost change</u>		<u>Current estimate</u>
			<u>Quantity increase or decrease (-)</u>	<u>Other</u>	
(millions)					
Air Force (10):					
AWACS	\$ 2,656.7	\$ 2,661.6	\$ -172.3	\$ 1,287.9	\$ 3,777.2
F-5E (note g)	698.6	315.5	102.3	13.2	431.0
MAVERICK	257.9	383.4	238.4	135.9	757.7
F-111	4,686.6	5,505.5	-2,515.4	4,209.9	7,200.0
B-1	8,954.5	11,218.8	-27.9	9,380.7	20,571.6
F-15	6,039.1	7,355.2	-	3,588.2	10,943.4
A-10 (note h)	1,025.5	2,489.7	-	684.2	3,173.9
MINUTEMAN III	2,695.5	4,673.8	317.9	2,287.2	7,278.9
A-7D (note a)	1,379.1	1,379.1	-120.5	293.6	1,552.2
AABNCP	467.8	484.3	-	-3.4	480.9
Total	<u>\$28,861.3</u>	<u>\$36,466.9</u>	<u>\$-2,177.5</u>	<u>\$21,877.4</u>	<u>\$56,166.8</u>
System deleted as of September 30, 1974 (1): SRAM	\$ 167.1	\$ 236.6	\$ 96.8	\$ 821.8	\$ 1,155.2

- ^aFor those programs with only a development or a planning estimate available, we have made both estimates the same to prevent distortion between the totals of the column.
- ^bThe planning estimate of \$720.5 million represents the program before the MARK-48 Mod 1 was accepted as the Navy's torpedo program.
- ^cBeginning June 30, 1973, the F-14 SAR became the F-14A SAR because present Navy plans did not call for procuring the F-14B version of the aircraft.
- ^dBefore issuing the present contract, the Navy's long-range program included 23 ships of this class for a planning estimate of \$3,980 million in fiscal year 1970 dollars. The present program is for five ships.
- ^eEstimates include Air Force costs for research, development, and procurement.
- ^fThe December 31, 1974, SAR for the HARPOON included a development estimate for the first time.
- ^gThe \$383.1 million decrease in development estimate compared to the planning estimate was the result of eliminating military assistance program cost estimates from SAR.
- ^hThe A-10 was formerly known as the A-X aircraft. The planning estimate of \$1,025.5 million represents the total program cost estimate as cited in the development concept paper. This planning estimate is stated in constant 1970 dollars, based on a 600-aircraft program, and considers a turboprop configuration.

QUANTITY AND PROGRAM UNIT COST CHANGES

Cost growth in major weapon systems results from such things as unanticipated development difficulties, faulty planning, poor management, poor estimating, or underestimating. However, not all cost growth can reasonably be prevented. For instance, unusual periods of inflation may result in cost growth. Changes in technology may make it possible to incorporate modifications that result in an overall increase in system's effectiveness. Such cost growth cannot always be anticipated, particularly when a weapon system is in development and production over long periods.

Cost growth has been a major reason for reducing the number of units of a weapon system to be acquired by the services. Continued cost growth and the need to stay within budgetary limitations will undoubtedly result in major reductions in the number of units to be acquired for many of the new systems under development.

The schedules on the following pages show the planning and development estimates for quantities and program unit costs planned for the weapon system programs. The schedules also show the current estimate for quantities and program unit costs at December 31, 1974, and the quantity changes and unit cost changes during the 6 months ended December 31, 1974.

BEST DOCUMENT AVAILABLE

QUANTITY CHANGES AND PROGRAM UNIT COST CHANGES

DURING THE 6 MONTHS ENDED DECEMBER 31, 1974

System	Planning and development estimates		Current estimate December 31, 1974	
	Quantity	Program unit cost (millions)	Quantity	Program unit cost (millions)
Army (14):				
IMPROVED HAWK	(a)	\$ (a)	(a)	\$ (a)
LANCE	(a)	(a)	(a)	(a)
TOW	233,081	.00312	(a)	(a)
DRAGON	247,360	.001634	86,095	.008240
SAM-D	(a)	(a)	(a)	(a)
SCOUT	1,155	.212	8	(c)
TACFIRE	149	(b) 1.007	(a)	(a)
UTIAS	1,123	2.1	1,117	3.5
HLH (PROTOTYPE)	(c)	(c)	(c)	(c)
MICV	1,205	.204	1,203	.341
STINGER	(a)	(a)	(a)	(a)
AAH	481	3.7	481	6.4
XMI TANK	3,323	.904	3,323	1.863
AN/TTC-39	308	(i) 2.601	308	(i) 3.419
Navy (24):				
MARK-48	4,194	.418	(a)	(a)
F-14A	469	12.63	390	18.55
SSN-688	32	179.609	38	224.1
AEGIS	(d)	(d)	(d)	(d)
DIGN-38	3	254.87	5	318.62
SPARROW F	(h) 15,685	.045	(h) 12,219	.107
POSEIDON	31	(e) 147.377	31	(e) 156.571
CONDOR	3,348	.132	583	.721
CVAN-68 CLASS	3	(f) 678.7	3	(f) 875.7
A-7E	595	2.463	666	4.161
PHOENIX	2,384	.225	2,532	.464
S-3A	199	14.5	187	17.8
E-2C	30	19.5	49	26.3
LHA	9	153.367	5	258.08
VAST	207	1.507	85	5.266
P-3C	104	12.44	241	13.16
DD-963	30	86.040	30	121.093
HARPOON	2,922	.353	2,922	.525
PHM	30	24.21	24	52.41
TRIDENT	10	(g) 1,243.11	10	(g) 1,615.34
PF	50	64.890	56	121.991
SIDEWINDER (AIM-9L)(h)	9,288	.025	(h) 11,133	.036
PHALANX	370	1.536	364	2.298
CH-53E	74	7.8	74	7.7
Air Force (10):				
AWACS	42	63.4	34	111.1
F-5E	87	3.63	154	2.8
MAVERICK	17,205	.022	30,236	.025
F-111	1,388	3.97	478	15.06
B-1	246	45.6	244	84.3
F-15	749	9.82	749	14.61
A-10	743	3.35	743	4.27
MINUTEMAN III	760	6.15	798	9.12
A-7D	517	2.67	435	3.57
AABNCP	7	69.2	7	68.7

Change during period	
Quantity change increase or decrease (-)	Unit cost change increase or decrease (-) (millions)
(a)	\$.86
(a)	(a)
(a)	(a)
-1,105	.000437
(a)	(a)
-1,147	(c)
(a)	(a)
0	.5
(c)	(c)
-2	.055
(a)	(a)
0	1.2
0	.576
0	0
(a)	(a)
56	.78
2	5.694
(d)	(d)
0	.26
15	0
0	2.032
45	-.046
0	23.1
20	.151
0	.008
0	.2
13	-1.1
0	22.10
-4	.222
27	.43
0	1.140
0	.122
-6	15.49
0	70.70
6	16.499
800	0
-3	.382
0	.3
0	33.0
0	.06
8,050	-.001
0	.17
0	7.9
0	0
0	.59
48	-.16
0	.16
0	-5.4

^aClassified.
^bPer set.
^cNone listed.
^dNo procurement costs or quantities provided.
^ePer system.
^fEstimated program cost divided by three ships.
^gEstimated program cost divided by 10 hulls.
^hIncludes Air Force quantities.
ⁱEstimated program cost divided by total number of switches.

PERFORMANCE AND SCHEDULE CHANGES

The justification for selecting a particular major weapon system to fulfill a need includes analyzing many existing and alternative capabilities and establishing a priority of need. It is important that clear performance goals for a system be defined early in the development process.

Overly ambitious performance requirements, combined with low initial cost predictions and optimistic risk estimates, lead almost inevitably to schedule slippages, performance degradations, and cost increases. Attempts to keep total program costs from rising lead to reductions in planned quantities which, in turn, increase unit cost. The following schedule lists weapon systems which have reported schedule slippages of 12 months or more in the planned delivery dates and systems in which, in our opinion, major improvements and/or reductions in planned performance characteristics were anticipated as of December 31, 1974.

Because specific data on the performance of a weapon system and its date for delivery or initial operational capability are generally classified, this unclassified report does not provide that detail. In individual weapon system staff studies issued to the Congress early each calendar year, we have reported details of performance and schedule changes. Also, the Department of Defense tracks performance and schedule changes and reports them quarterly on SARs.

MAJOR WEAPON SYSTEMS WITH SCHEDULE SLIPPAGES OF
12 MONTHS OR MORE AND PERFORMANCE CHARACTERISTIC
CHANGES AS OF DECEMBER 31, 1974

System	Schedule slippage		Performance characteristic changes			
	Previously reported	Additional slippage reported during 6 months	Previously reported Improvement	Previously reported Reduction	During 6 months Improvement	During 6 months Reduction
<u>ARMY:</u>						
MTCV				X		
IMPROVED HAWK (note a)	X			X	X	X
LANCE (note a)	X		X	X		
TOW	X					
DRAGON (note a)	X		X	X	X	
SAM-D	X			X		
SCOUT				X		
TACFIRE	X				X	
STINGER		b _x				
<u>NAVY:</u>						
SSN-688	X	5 months				
AEGIS	X					
DIGN-38	X					
SPARROW F	X					
CONDOR	X	22 months			X	
PHALANX	X			X		
CVAN-68 CLASS	X					
P-3C				X		
LHA	X	6 months				
VAST	X				X	
SIDEWINDER AIM-9L	X			X		
DD-963				X		
PF				X		
CH-53E					X	
<u>AIR FORCE:</u>						
AWACS	X	7 months				
MAVERICK	X					
AABNCP (note c)	X				X	
B-1	X	8 months		X		
A-7D	X					

^aOn these systems some aspects of performance have improved and some have been reduced. We did not attempt to assess the overall effect on performance capability.

^bAs of December 31, 1974, the STINGER had cumulative schedule slippages exceeding 12 months.

^cAs of December 31, 1974, the AABNCP schedule slippage improved (decreased) 3 months, since June 30, 1974.

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