

GAO

Fact Sheet for the Chairman,
Committee on Armed Services,
House of Representatives

August 1990

B-2 BOMBER

Contract Structure and Selected Provisions



National Security and
International Affairs Division

B-224698

August 17, 1990

The Honorable Les Aspin
Chairman, Committee on Armed Services
House of Representatives

Dear Mr. Chairman:

As requested, we have developed information on the contract structure and selected provisions affecting contractor and government risks under the B-2 low-rate initial production contract. Currently, five B-2s are included under this fixed-price incentive contract with Northrop Corporation's B-2 Division, and the Air Force is in the process of negotiating with Northrop to add five additional aircraft to the contract. Six aircraft are also being acquired under a development contract.

Results in Brief

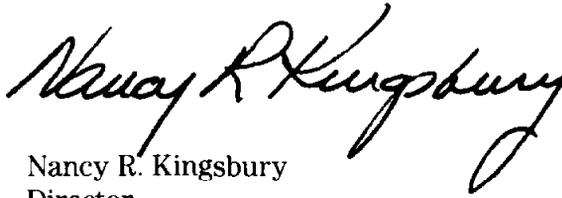
Northrop, the prime contractor, is responsible for ensuring that the B-2 meets system specifications and for managing major subcontracts. Current legislation requires that contracts include warranty provisions that provide coverage for design and manufacturing requirements and protect against defects in material and workmanship. Although not required by law, the low-rate initial production contract also provides a performance warranty. However, the government's ability to enforce the performance warranty may be affected by the test program. As of June 1990, under the present delivery schedule, testing is scheduled for completion 10 to 18 months after the warranties for the initial five production aircraft expire.

The low-rate initial production contract establishes a cost-sharing arrangement that also applies to warranty costs. Unless Northrop has a substantial cost overrun, the Air Force would pay 80 percent and Northrop 20 percent of allowable warranty costs. Northrop's liability under the warranty provision is limited to \$100 million for the five aircraft. The Air Force pays for all costs to identify, develop, and test corrective actions for deficiencies under its full-scale development contract, which is a cost-reimbursable contract.

According to Air Force officials, the B-2 warranty was obtained at no additional cost to the government. Regarding the warranty being considered for the next five aircraft, the Air Force has asked Northrop to propose a warranty in which Northrop would assume much greater responsibility for the cost of corrective actions.

Please contact me at (202) 275-4268 if you or your staff have any questions concerning this fact sheet. Major contributors to this fact sheet are listed in appendix II.

Sincerely yours,

A handwritten signature in black ink that reads "Nancy R. Kingsbury". The signature is written in a cursive style with a large, looping initial "N".

Nancy R. Kingsbury
Director
Air Force Issues

table I.1 is primarily the result of the change in the B-2 schedule. Additional cost increases due to a subcontractor strike, a decision to shift aircraft buys to later years, and the purchase of other B-2 related items are yet to be negotiated. Consequently, the program office estimates the low-rate initial production contract costs will increase substantially.

Total System Performance Responsibility and Subcontractor Management

Under the contract, Northrop has total system performance responsibility. Northrop is responsible for integrating the B-2, its subsystems, components (hardware and software), and government-furnished property. It must also undertake any actions necessary to ensure that the total system will meet all requirements. Northrop is also responsible for selecting subcontractors and effectively managing the subcontracts required to perform the work. Northrop is required to monitor the major subcontractors' performance and provide reasonable assurance to the Air Force that contract requirements will be met.

Warranty Coverage

10 U.S.C. 2403 requires contractors to guarantee that weapon systems conform to design and manufacturing requirements and are free from defects in materials and workmanship. Also, if the weapon system program is in mature full-scale production—that is, production of more than 10 percent of the total number planned or the initial production quantity, whichever is less—a performance warranty is necessary. The B-2 low-rate initial production contract covers these three areas. However, the performance warranty was not necessary because only 5 of the 127 planned production aircraft were included in the contract. According to Air Force officials, the warranty obtained was at no additional cost to the government.

The Air Force plans to add five additional aircraft to the contract by October 1990 and has requested that Northrop propose a cost estimate for these aircraft, which were authorized by the Congress in fiscal years 1989 and 1990. It has also asked Northrop to propose costs for a new, more stringent warranty provision for the aircraft. The Secretary of Defense advised the Congress on May 20, 1990, that the Air Force intends to comply with the increased warranty requirements in the National Defense Authorization Act for fiscal years 1990 and 1991.

Current Warranty

The current warranty provides that Northrop must be notified about defects or performance problems within 6 months after the Air Force accepts an aircraft. When a problem is identified, the costs to design,

not been tested by the time the warranty period expires. Program officials believe sufficient testing will be completed early enough to ensure compliance with most specifications and requirements. If not, the officials agree the government would have to pay the total cost to fix a defect.

Table I.3: Comparison of Warranty Periods to Flight Test Program

Aircraft no.	Delivery date	Warranty expiration date (6 months after delivery)	Months remaining between warranty expiration and completion of testing
1	Apr 1992	Oct 1992	18
2	June 1992	Dec 1992	16
3	Aug 1992	Feb 1993	14
4	Oct. 1992	Apr. 1993	12
5	Dec. 1992	June 1993	10

Future Warranty

The National Defense Authorization Act for fiscal years 1990 and 1991 directed the Secretary of Defense to report on the implementation of current warranty provisions in the B-2 program. In addition, it required that the Secretary report on warranties planned for future contracts.

The Secretary of Defense reported to the Congress on May 20, 1990, that the Air Force has asked Northrop to propose the cost for warranty coverage on the next five aircraft. The proposal should be for a warranty with a cost liability limit equal to Northrop's profit. This would then become Northrop's financial liability for correcting defects. Further, any costs incurred by Northrop to correct defects would not be covered by the cost-sharing arrangement of the contract and would not be shared by the Air Force, as they would be under the current warranty.

The Air Force cannot exclude or limit this coverage unless (1) it is determined that a waiver is necessary in the interest of national defense or (2) an analysis shows the costs outweigh the benefits of the warranty. In either case, the Secretary must notify the Congress of any exclusions or limitations in the warranty coverage.

Also, under the existing contract clauses, the warranty allows the Air Force 6 months to discover defects after accepting an aircraft. Under the planned warranty, Northrop will be asked to accept 1 year as the length of time the Air Force has to discover defects.

Business Base Adjustment

A contract price adjustment is allowed if Northrop's B-2 Division business base changes due to government actions to delay, reduce, or terminate the B-2 contract. This provision allows Northrop an equitable adjustment if the B-2 Division's business base changes by at least 5 percent because of government actions. The provision was included because Northrop based its price for the contract on producing 132 aircraft. The proposed reduction to 75 aircraft would therefore affect the pricing of this contract. This provision will be in effect in future contracts through delivery of the 72nd aircraft. To date, this provision has not been used to increase or decrease contract prices.

Other Termination Provisions

The Federal Acquisition Regulation requires standard contract termination provisions. The regulation allows the Air Force to terminate the contract if Northrop fails to meet contract requirements or for the government's convenience. Under these provisions, the government must notify Northrop of the termination action and details. Costs are usually determined through negotiations between the government and the contractor. The contractor has 1 year after the notice of termination to submit a proposal for costs incurred.

Termination Costs and Government Liability

The government's liability under these provisions depends on specific termination scenarios. Before the recent proposal to reduce the number of aircraft to 75, the B-2 program office estimated total liability for stopping the program at various times. The total government liability at the time of scheduled production decisions in fiscal years 1991, 1992, and 1993 was estimated by the program office to be \$24 billion, \$29 billion, and \$36 billion, respectively.

These estimates represent cumulative costs incurred at those decision points plus additional costs necessary to close out the contract. In addition to any aircraft delivered, the Air Force would take possession of any aircraft sections and parts that were in the manufacturing process. The estimates were based on actual expenditure rates in the B-2 program for fiscal years 1987 and 1988 plus other estimating factors. We did not attempt to verify the estimates.

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Termination Provisions in the Contract

The contract includes provisions intended to protect Northrop's investments and limit the government's liability if the program is terminated or delayed for a significant period of time. On April 26, 1990, the Secretary of Defense reduced the number of aircraft in the B-2 program from 132 to 75. This action could require further negotiations under some of these provisions.

Protection of Contractor Capital Investments and Leases

Two provisions protect Northrop's investment in capital and leased equipment if the government terminates the contract. In fiscal year 1990, the maximum government obligation under these provisions is \$215 million. This amount decreases to \$194 million and \$167 million in fiscal years 1991 and 1992, respectively. B-2 program officials stated that if the contract is terminated, these ceiling amounts would probably be reached by the current value of applicable equipment and leases.

The purpose of these provisions was to give Northrop an incentive to invest up front in enough plant and equipment to produce the entire B-2 program. Coverage under these provisions exists through December 31, 1992, or delivery of the 74th production aircraft, whichever occurs first. The government will purchase the equipment items or leases covered if (1) the government does not buy through delivery of at least the 74th production aircraft, as evidenced by the second consecutive annual appropriation act that excludes procurement of B-2 production aircraft, or (2) if the contract is terminated for the government's convenience before delivery of the 74th production aircraft. The Air Force has indicated that buying 75 B-2s, 70 of which are production aircraft, could cause further negotiations under these provisions.

Reimbursement for Idle Facilities or Capacity

Northrop is to be reimbursed for 3 years for the cost of idle facilities if the B-2 program is curtailed. The payment to be made under this provision is based on a formula that includes the cost of floor space, cost to occupy the space, equipment depreciation, and equipment utilization factors. Coverage decreases 25 percent each of the 3 years after curtailment, from 100 percent in the first year to 50 percent in the third year.

Equipment and Tooling Disposition Costs

Under this provision, the negotiated price of the contract excludes the costs to remove, store, and transport government-owned equipment and tooling in case the contract is terminated, delayed, or reduced. This is a standard provision in production contracts. The Air Force has limited the liability under this provision to \$430 million.

**Appendix I
Low-Rate Initial Production Contract
Structure and Provisions**

develop, and test a corrective action are paid by the Air Force under the development contract, which is a cost-reimbursable contract. The costs to retrofit the approved corrective action into production aircraft are chargeable to the low-rate initial production contract. However, these warranty costs are limited to \$100 million for the five aircraft.

Unless Northrop substantially overruns target cost, the government would be responsible for 80 percent of the allowable warranty costs. The actual sharing of these costs, however, depends on Northrop's cost performance on the contract. Contract cost sharing and profit provisions establish that once target cost is exceeded, Northrop's profit is reduced as costs increase until Northrop is totally responsible for all additional costs. For example, if Northrop produces at target cost before the \$100 million warranty costs are incurred, the government's share would be \$80 million, and Northrop's profits would be reduced by \$20 million. Table I.2 shows that this ratio continues until program costs reach the point at which Northrop would assume all costs, including the \$100 million warranty cost.

Table I.2: Distribution of Warranty Costs

Dollars in millions				
Contractor's performance	Contract cost	Profit before warranty	Contractor's share	Profit after warranty
At target cost	\$2,216	\$251	\$20	\$231
At 10-percent overrun	2,438	207	20	187
At 20-percent overrun	2,659	162	20	142
At ceiling	2,992	0	100	-100

Under the contract, Northrop's share of warranty costs would remain at \$20 million unless costs began to approach the ceiling price. Under the current cost-sharing arrangements, this would not occur until target cost was exceeded by about \$650 million, or about a 30-percent overrun of target cost.

The 6-month period of coverage on warranty provisions may limit the government's ability to enforce the performance warranty. Under current plans, the Air Force will not complete performance testing until April 1994, which is after the five low-rate initial production aircraft are to be accepted. As shown in table I.3, flight testing of the development aircraft will not be completed until between 10 and 18 months after the warranties for these aircraft have expired. This could limit the Air Force's ability to enforce the performance requirements that have

Low-Rate Initial Production Contract Structure and Provisions

The low-rate initial production contract, awarded in November 1987, is a fixed-price incentive contract that sets initial cost and profit targets and has a firm ceiling price. Firm targets for cost and profit will be set after the third development aircraft is delivered in 1991. The contract also establishes a cost-sharing arrangement to motivate Northrop to control contract costs. If Northrop's actual cost is below target cost, profits are increased proportionately, but if the actual cost exceeds target cost, profits are reduced proportionately. The contract values negotiated initially, increases agreed upon in June 1990, and the current values are shown in table I.1.

Table I.1: B-2 Contract Values

Dollars in billions			
	Initial	Increase	Current
Target cost	\$2.020	\$0.196	\$2.216
Target profit	0.251	0	0.251
Target price	\$2.271	\$0.196	\$2.467
Ceiling price	2.727	0.265	2.992

The Air Force and Northrop negotiated initial target cost based on preliminary cost data from the development program. The target price is the target cost plus a profit factor. The Air Force and Northrop also agreed that the ceiling price would be 135 percent of the target cost. Under the cost-sharing arrangement, the Air Force pays 80 percent of all costs that exceed the target cost, and Northrop pays 20 percent until the total contract cost approaches the ceiling price of \$2.992 billion. Northrop is solely responsible for costs beyond the ceiling price. Also, the Air Force and Northrop will share any underruns below target cost by the same 80:20 ratio.

The final target cost and profit amounts will be negotiated after the third development aircraft is delivered because more cost information should be available at that time. Also, the third aircraft will contain equipment not on the first two and will more closely resemble the planned aircraft design.

In 1987, at the time the low-rate initial production contract was being negotiated, a 6-month schedule extension was being considered. As a result, a provision was included for a one-time increase in contract targets. The provision stated that Northrop would be responsible for the cost of 3 months of the delay and the government would be responsible for the balance. The \$196 million increase in the target cost shown in

The low-rate initial production contract includes provisions to renegotiate the contract if a prescribed number of aircraft are not purchased. It also includes termination provisions to protect Northrop's investments and limit the government's liability if the program is terminated or delayed. The recent reduction in the total number of B-2 aircraft from 132 to 75 could require further negotiations under these provisions. The Air Force estimates that the low-rate initial production contract costs will increase substantially due to the reduction in the number of aircraft as well as schedule and other changes. Appendix I provides more details about this contract.

Scope and Methodology

To obtain the information for this fact sheet, we reviewed the low-rate initial production contract structure and provisions for warranties and contract termination or program delay. In addition, we discussed contract provisions with contracting officials from the B-2 program office and the Product Performance Agreement Center at Wright-Patterson Air Force Base, Ohio, and Northrop Corporation's B-2 Division, Pico Rivera, California.

As requested, we did not obtain agency comments on this fact sheet. However, we provided B-2 program officials with a draft of this fact sheet and incorporated their comments where appropriate.

We are sending copies of this fact sheet to the Chairman, Senate Committee on Armed Services; the Chairmen, Subcommittees on Defense, House and Senate Committees on Appropriations; appropriate congressional committees; the Secretaries of the Defense and the Air Force; and the Director, Office of Management and Budget.

