FOREIGN MILITARY SALES (FMS) WARRANTIES: AN ASSESSMENT

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Introduction

The world of procurement has been turned upside down with the recent 1984/85 laws prescribing our new day-to-day regulations.[1] One of the most debated aspects of the new laws involves mandatory warranty provisions. Our own acquisition personnel, as well as foreign customers, are asking some important questions. How much will a warranty cost? What will I get for my money? What kind of administration is required? Do I really need it? And, last but not least, what is a warranty?

Warranty Defined

The U.S. Government (USG) Federal Acquisition Regulation defines a warranty as "a promise or affirmation given by a contractor to the Government regarding the nature, usefulness, or condition of the supplies or performance of services furnished under the contract." In effect, a warranty or guarantee (both are used interchangeably) is a legal contractual bet or gamble. The USG is betting that the items supplied by the contractor will fail, whereas the contractor wages that the warranty will not be evoked. Picture the typical negotiations. During the purchasing of the end item, the contractor is telling the USG how great his item is and why he should be demanding such a high price. The USG, of course, is negotiating the opposite. Then, when the warranty is negotiated, the contractor and USG change roles. The contractor, in order to raise the price of the warranty, is telling the USG how bad his item is and how much work it will need. Meanwhile the US is taking the approach that the item is now superior and should not need an expensive warranty.

Need/Risk

The question of the need for a warranty brings up some interesting points. Before these 84/85 laws, the Department of Defense (DOD) did not often use special warranties. We did make use of commercial warranties which were made available to the general public at no additional cost to the USG. Rather than spend great amounts of monies on warranties for state-of-the-art design and equipment, we depended on quality control, inspection, and assurance programs.

Government inspection/assurance is designed to insure that the contractor delivers a good end item which is exactly what was ordered. The extent of inspection varies with the dollar value of the contract and with the type of

product. Basic government contract policy concerning quality is that contractors are responsible for controlling quality and offering only those items which conform to contract requirements. The government's role is to determine how much inspection is necessary to insure the effectiveness of a contractor's quality procedures. The inspection clause provides for specific measures to be taken by the USG in the event a contractor fails to correct a defective item before USG acceptance. These measures are basically to request repair, replacement, a price reduction, or to declare a default. After acceptance, the USG is self insured in the absence of a warranty.

Acceptance is the act of an authorized agent of the government by which the government agrees that the supplies or services submitted by a contractor conform to all requirements of the contract. This acceptance includes quality, quantity, and condition of the supplies. Our government acceptance has always been conclusive except for latent defects, fraud, or such gross mistakes as to amount to fraud.[2] Since the USG takes great efforts in its intensive management of weapon systems, the chances of a sloppy inspection and imprudent acceptance of the end item are highly unlikely. Thus, the need and costs of expensive warranties have never been considered price/cost effective. The cost of covering government-owned property in the hands of contractors at 1% per year of the estimated value would easily cost $1 billion per year. Actual losses are only in the low million dollar range per year. Thus, in the past it has proven cheaper to pay for actual (after acceptance) defects than to buy warranties.

Warranties do have a place, however, when a major supplier or sole source has consistent quality problems. The Air Force, for example, has tried to force a sole source engine contractor to offer a warranty. "The contractor maintained that the warranty would place a high risk on their company and set the cost of the warranty unrealistically high."[3] Because of inadequate funds, the Air Force reluctantly agreed to a reduced warranty. The Air Force found it so hard to get the sole source contractor to assume the risk of a warranty that one report stated the following:

> In addition, in the evaluation of the need for a warranty, one of many factors to consider is whether or not there is a sole source environment. This may preclude the use of a warranty. In a sole source environment, . . . warranty provisions are difficult to negotiate. The contractor is less willing to take risks and to cover every contingency. With the warranty priced high, the Air Force must either delete the requirement or accept reduced coverage.[4]

Two comments that can be made about this report are: first, the contractor should not be asked to assume risk for "every contingency"; and, second, sole source contractors and others having difficulty in providing quality products may very well try to avoid later responsibilities and risks after their product is being used in the field. It is exactly these contractors who need to be coerced into offering warranties.

The question of risk also needs to be addressed here. The more risk the USG places on a contractor, the more it should be paid. Contractors look at risk from the viewpoint of possible failure. The more proven information they have, the less risk involved. The less information they have, the greater the risk, and thus their demand for higher prices. The longer an

item is marketed, learning takes place, the item is improved, and risk is reduced. The first television picture tubes produced had a warranty for one week. Today, the general warranty period for television tubes is three years. Obviously, television manufacturers have come a long way and most of the risks are known. But this is not the case in DOD weapon system design and manufacturing. Here, few of the risks are known or defined, as DOD does not want old technology in its systems, but rather the latest, state-of-the-art technology. Now, as a result of our latest acquisition laws, we are going to insist on warranties and will have to pay contractors to warrant their work, since, "the use of warranties in [the] procurement of weapon systems is mandatory pursuant to 10 U.S.C. 2403 unless a waiver is authorized".[5] Nonetheless, DOD still tries to insure that a warranty is cost effective from a life cycle cost perspective.

Three Types of Warranties DOD Requires

The DOD Appropriations Act of 1984 requires DOD to obtain a warranty provision in all fixed-price, production prime contracts. This warranty requirement has three distinct guaranties: (1) that the weapon system and each component thereof are designed and manufactured so as to conform to government-specified performance requirements; (2) at the time of delivery to the government, the weapon system and each component thereof are free from such defects in material and workmanship as would cause the system or component to fail to conform to the government's specified performance requirement; and, (3) that a performance requirement may call for operation of the system for a specified time period without designated failures.

The 1985 DOD Appropriations Act further defined requirements. Two warranties, "design and manufacturing," and "free from defects in materials and workmanship," are required in all weapon system production contracts exceeding $100,000 or which involve total future procurement costs in excess of $10 million. In addition, if the weapon system is a mature system, the "performance" warranty must be added. Mature systems are those involving the follow-on production of a weapon system after manufacture of the lesser of the initial production quantity or 1/10 of the eventual total production quantity. A weapon system is defined as a system or major subsystem used directly by the armed forces to carry out combat missions. This term does not include related support equipment or supplies, such as ground handling equipment and ammunition.

DOD Federal Acquisition Regulation Supplement (DFARS) Required Terms

The DFARS also requires that in the event a weapon system fails to meet the terms of its warranty, the contracting officer may require the contractor to take prompt corrective actions at no additional cost to the USG. The contracting officer also has the option of requiring the contractor to reimburse the USG for reasonable costs incurred to fix the item.[6]

Essential performance requirements will come from the using agency or customer. In DOD, the heads of the military departments have this obligation. Time is the most important aspect of the warranty requirement. Will it be defined as so many days after each delivery, so many days after last

delivery, or so many days after initial use? Will the warranty run out while the item is in storage or non-use? Should the warranty time be defined as so many hours use, so many hours before failure, or so many recorded miles? Most warranties require two or three communications after an item fails within prescribed time requirements before those warranted items can be returned to the contractor. Thus, there should be time constraints for shipping, repair, and return provided for in the warranties. The delivery of support equipment and spares that are commercially warranted should be managed with the delivery of the prime equipment to insure that the government receives maximum benefits from commercial warranties. All of the above require careful and timely action and monitoring.

Costs

The acquisition regulations and public laws require warranties to be cost effective. Their benefits through the life cycle system must equal (or hopefully surpass) their costs. "It is Department of Defense policy to only obtain warranties that are cost effective. . . . In order to determine whether use of a warranty would be cost effective, an analysis must be performed to compare the benefits to be derived from the warranty with its acquisition and administrative costs."[7]

Acquisition Cost

In an obscure but significant clause of the 1985 DOD Appropriations bill, the House Armed Services Committee proposed giving the Pratt and Whitney engine manufacturers a generous exception from offering a warranty. The committee wanted to exempt the F-100 engine (used in the F-15 and F-16 aircraft) from the requirement because Pratt and Whitney was charging too much for its warranty. Warranty cost was expected to be 33% of the cost of the engine. General Electric, which also produces the F-100, charges 5% of the engine cost for similar warranties. Each engine from both General Electric and Pratt and Whitney was estimated to cost $3 million.

At 5%, the cost of the General Electric warranty would have been $150,000 per engine versus $1 million for the Pratt and Whitney warranty. These warranties were to guarantee parts and labor on the engine for three years or 1,000 engine flying hours, whichever came first. In addition, the overall performance was to be guaranteed for eight years. All repair costs up to that point would be paid by the manufacturer.

The acquisition cost of a performance warranty will be the result of the negotiations between the government contracting/negotiation officer and the contractor. They will never be cheap. They can easily be between 20 and 40 percent of the total contract price. This requires more front-end money and needs to be a major source selection factor. The administrative costs are not so obvious.

Administrative Costs

Administrative costs for warranties must include the following:

(1) Labeling the end item as covered under warranty. Decals or labels must be placed on all items which contain installation and removal dates, notice of warranty, and handling instructions. Further, seals must be placed on the item in order to detect unauthorized entry. Depots may require two locations and two National Stock Numbers (NSNs)--one for warranted items and another for non-warranted items.

(2) Updating all necessary maintenance manuals and log books with information that the item is covered by warranty and how to implement the warranty.

(3) Training personnel in maintenance and supply in how to deal with warranted items. (Note: The item may be more suitable (designed) for contractor maintenance, and government self-sufficiency may thereby suffer.)

(4) Reporting failed warranted items in a timely manner and trying to get an overburdened item manager and contracting officer to enforce the warranties. There is an additional cost associated with and great difficulty in establishing the existence and nature of the defect and tracing its responsibility. This usually requires a new organization/office in the contracting activity.

(5) Tracking and accumulating data relative to warranty costs (data collection, analysis, and reporting) by the contracting agency.

(6) Approving engineering change orders. Since contractors are now assuming responsibility for warranty performance, design changes will need to be incorporated as quickly as they are in commercial production lines. At a recent conference of defense contractors, the following clause was recommended for inclusion in future contracts to deal with these issues.

> In recognition of the high Contractor motivation for total cost control effected through these warranty provisions, the Government agrees that all no-cost ECP's [Engineering Change Proposals] submitted in accordance with MIL-STD-480 to improve reliability and maintainability for the Sets/Units will receive special, expeditious processing. Notwithstanding this special processing, any such ECP shall be formally incorporated in the contract by the Government thirty-five (35) days after receipt by the CO [Contracting Officer] unless the Contractor has received written notification of its non-approval from the Government prior to that date.[8]

(7) Using only "brand name" spares. With the passage of another law, the 1984 "Competition in Contracting Act," we see Congress pressuring DOD to be as competitive as possible. Yet, once the selection of the mature weapon system contractor has been made, it stands to reason that only his approved spare parts (brand name) will be allowed under his warranty. Since warranties are for a specified period of time, this may or may not be a problem for DOD.

It clearly will take some time for DOD to prove the cost effectiveness of these new expensive warranties. Data is just beginning to be collected.

FMS Policies and Warranties

Of course, the new laws requiring warranties in the hope of saving DOD repair costs are not necessarily applicable to foreign governments and their purchases through FMS. It is the policy of DOD to obtain for FMS purchasers the same warranties against defects in workmanship and material, and conformance to design and manufacturing requirements, as is obtained by the United States for similar purposes. However, DOD will not normally obtain essential performance warranties for FMS purchasers. The FMS purchaser shall be advised of warranties normally obtained by the United States. If the FMS purchaser requests a warranty in the Letter of Offer (LOA), the United States shall then obtain the same warranties on conformance to design and manufacturing requirements and defects in material and workmanship that are obtained for U.S. supplies. If the FMS purchaser expressly requests a performance warranty, the United States will exert its best efforts [normal efforts] to obtain the same warranty obtained on U.S. equipment or, if specifically requested by the purchaser, a unique warranty.[9]

It is anticipated that the costs for FMS purchasers may be different from our costs due to transportation factors and unique tailoring requirements in the warranty clause. In any case, care must be taken to insure that the FMS purchaser will pick up all the acquisition and administrative costs of any warranty obtained. The Arms Export Control Act requires that the USG lose no money in the management of Foreign Military Sales.

Effectiveness of Warranties

To be effective, a warranty should be simple, focused on the primary objective to be obtained, enforceable, and affordable. It should not cause disruption to existing military systems and procedures. Selecting and tailoring an effective warranty is a multidisciplined requirement, with participation by the using command, acquisition command, supporting commands, and the contractor. The functional areas that need to be addressed are program management, engineering and quality, logistics, comptroller, cost and pricing, procurement, counsel, and the user.

Typical benefits to be expected include the following:

First, the contractor's responsibility no longer stops at his loading dock, but now extends out to the field. This tends to motivate contractors to design the items to meet all requirements at the initial production release, and to insure they operate as intended in the field.

Second, contractors incurring expenses to correct warranty problems now have a strong motivation to meet or even exceed the required levels of performance. They are also motivated to correct any deficiencies through no-cost engineering change proposals.

Third, life cycle costs may be reduced. Contractors are motivated to reduce repair costs to minimize their liability. This in turn should result in a corresponding reduction of support costs for the government.

Fourth, warranty liabilities are expensive and thus gain high visibility and attention from the contractor's management. This results in quick action to solve problems. The contractor is motivated to participate in the early evaluation of field failures. This early contractor involvement will speed the development of corrective action programs.[10]

Conclusion

Any warranty must be simple, effective, and enforceable. Properly tailored warranties are a means to achieve a closer alignment of contractor and government goals. "They can be a tool to incentivize and motivate the contractor to design and build quality products which can be supported at lower overall costs."[11] Its structure and terms can enhance or hamper normal military operations and reduce or create administrative problems. "Just having a warranty because it is a new approach to use does not make it an effective part of program management."[12]

The foreign purchaser may be able to reap some of these benefits if he insists on a performance warranty. But it is doubtful he can receive them with a cost effective warranty. Negotiation of a warranty is a wager/bet--a matter of chance and unknowns. It will take years for the data to be collected and analyzed before we (the USG) can ascertain if we reaped any of these benefits with cost effectiveness. Foreign purchasers should let the USG test the program with its own acquisitions and appropriated dollars. Since many in DOD wonder about the cost of the new legislative requirements, it stands to reason that the foreign purchaser should think twice before sipping this ambrosia. If cost effectiveness is realistically considered, performance warranties will become a brief deviation in government contracting.[13]

ENDNOTES

1. These new laws include: PL 98-94, DOD Authorization Act, 1984; PL 98-369, Competition in Contracting Act; and PL 98-525, Defense Procurement Reform Act, 1984.

2. U.S. Department of the Air Force, Air University, Government Contract Law, 1982 Edition (Maxwell Air Force Base, AL), pp. 79-80.

3. U.S. Department of the Air Force, Air Force Acquisition Logistics Center (AFALC), Abstract of Lessons Learned, "The Impact of Sole Source on the Cost of Warranties" (Wright-Patterson Air Force Base, OH).

4. Ibid.

5. U.S. Department of Defense, Office of the Under Secretary of Defense for Research and Engineering, Department of Defense Federal Acquisition Regulation Supplement (DFARS) (Washington DC), Part 46.703.

6. Ibid., Part 46.770-2.

7. Ibid., Part 46.770-8.

8. Conference sponsored by ARINC Research Corporation, Annapolis MD, May 13, 1985.

9. Ibid., Part 46.770-7.

10. U.S. Department of the Army, U.S. Army Materiel Command, "Acquisition Management--Joint Engine Warranty Development Guide," Pamphlet No. DARCOM-P5-1 (Alexandria VA, 26 October 1984), p. 7.

11. Juanita Vertrees, "The Effective Application of Warranties," 1982, 17 Annual Sole Proceedings - Logistics.

12. Ibid.

13. Business Publishers, Inc. 1985, Federal Contract Disputes, "Warranty Requirements Threaten Contractors," sample undated pamphlet (Silver Spring MD), p. 1.

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