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STATEMENT OF
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BEFORE THE

COMMITTEE ON ARMED SERVICES,

UNITED STATES SENATE,

ON

DEPARTMENT OF DEFENSE SPARE PARTS

PROCUREMENT PRACTICES

Mr. Chairman and Members of the Committee:

We are pleased to be here today at your hearing on the Department of Defense's spare parts procurement practices. In an August 8, 1983, letter to us, you expressed concern that the Defense Department may not be realizing the full benefit of modern computer capabilities to manage the procurement process. You asked us to look at the computer equipment and software that support procurement activities used in purchasing aircraft spare parts. You also asked that we focus our work on computer generated information being used to identify unwarranted spare parts price increases.

We performed our work at the locations you identified--the Air Force's San Antonio Air Logistics Center in Texas, the Navy's Aviation Supply Office and the Defense Industrial Supply Center, both in Philadelphia, and the Army's Aviation Materiel Readiness Command in St. Louis. At these locations we interviewed officials working in procurement and data automation and reviewed various contract files and planned improvements in automation. We also interviewed officials on the various Defense Department task forces investigating spare parts pricing and procurement problems.

Our overall assessment (slide 1), based on the short time we had to perform the work, is that (1) computer equipment is or soon will be technologically current; (2) computer software programs, with the exception of the Army's, are logically and technically outdated; (3) computer based information provided officials for buying aircraft engine spare parts is limited; and (4) computer capabilities being used to identify and prevent unwarranted price increases range from limited to none.

I would like to stress that because of time constraints, we are not making specific recommendations. However, I will offer for consideration improvements that can be made which I will discuss later. Before I discuss the specific areas we focused on, I would like to briefly explain how our work fits into the overall wholesale logistics function.

As you can see (slide 2), wholesale logistics requires interaction between its various functional subsystems--Stock Control, Requirements, Financial Management, Provisioning, Technical and Cataloging, and Contracting.

When it receives a customer's requisition, Stock Control searches its records to determine if the spare part is a stocked or a non-stocked item. If stocked and available, Stock Control directs shipment of the part to the customer and the usage is reported for historical purposes. If the spare part is not routinely stocked, Stock Control passes a request to Contracting for item procurement. Also, at this time, Requirements evaluates the (1) usage history of the non-stocked spare part, (2) usage forecasts, and (3) budget information to decide whether the spare part should be stocked to meet future demands.

If the spare part is a stocked item but available quantities cannot meet the customer's need, Requirements decides whether to proceed with a procurement or to delay purchase of the spare part because of lack of funds, higher priority needs, etc. An item manager, in Requirements, on the basis of a computer generated supply study, makes this decision. Both Stock Control and Requirements routinely use the computer for these operations.

Once the item manager makes a buy decision, the computer aids in preparing a purchase request which is sent to Contracting. At this time, the buyer receives several documents, such as the purchase authorization, historical pricing data, and a bidders list. As I will discuss later, the use of the computer to produce these as well as other solicitation documents varies among the services. This is the area where we focused our audit work.

When technical and engineering drawings are needed for competitive spare parts procurements, Technical and Cataloging provide a package containing specifications, drawings, dimensions, etc.

Other functions technical and cataloging perform include evaluating available technical engineering data to determine what spare parts substitutes are acceptable and what spare parts, provided by a prime contractor, can and should be competitively bought. These are basically manual functions.

Financial Management records financial obligations and commitments, assures that needed funds are available, and bills customers when the ordered spare parts are provided. This is mostly a computerized function.

Provisioning, the last wholesale logistics function, uses initial forecasting information to make stock versus non-stocked spare parts decisions and to establish initial stockage levels. Provisioning also decides (1) whether to buy the spare parts technical data and (2) how the initial spare parts should be bought. This is a manual intensive operation.

Now I would like to address the questions in your letter. Our comments on the computer and software programs focus on support of the overall logistics functions. Our comments on computer based information relate to contracting.

On the question of age, capability, and operating condition of the computers (slide 3), the Army's, Air Force's, and the Defense Logistics Agency's computers are of relatively current technology. The Navy's computers are old and technologically dated. The Navy plans to award a contract for new computer equipment in January 1984 with the first delivery in April 1984. The Army's computers were installed in 1980 and 1981 and were upgraded in 1982. The Defense Logistics Agency's and the Air

Force's computers were installed in 1982 and 1983. These computers are an interim step until major computer replacement procurements can be completed. The Defense Logistics Agency's procurement is underway with completion estimated to be in 1986. The Air Force has just started and is now in the planning stage. For these reasons, we believe the computer equipment the services are using to support their wholesale logistics operations is or will be current.

Regarding the computer software programs that support the overall wholesale logistics operations (slide 4), we believe their age and effectiveness, with the exception of the Army's, are logically and technically out dated and that improvements can and should be made. The Army's computer software programs were developed in the early 1970s and operate as an integrated system. Although the Army must continually refine its programs to improve their effectiveness, it does not plan a major redesign at this time. The Defense Logistics Agency, along with replacing its computers, plans a major redesign of the software.

The Air Force's and the Navy's computer software programs are a collection of independent programs. Data processed by these computer programs must be collected, sorted, and then sequentially processed. Thus, updating data and correcting errors is a time-consuming process. These processing techniques reflect computer capabilities that were prevalent in the early 1960s. The Navy, as part of the new computer acquisition I mentioned earlier, expects to complete a major software redesign effort by 1989, and the Air Force has developed a software improvement program. Because of

our short timeframe, we did not evaluate any of these planned computer software redesign or improvement efforts. This concludes my computer equipment and software status report on how the overall wholesale logistics operations are currently being supported.

Now I would like to turn to the results of our work on computer generated information provided to the buyer. Referring to the slide (slide 5), I ask you to recall that the buyer's role is one of many in the overall logistics process.

The next slide (slide 6) shows the basic functions performed by the buyer and the information available--automated and manual. The process is shown as beginning on the left and moving to the right. The shaded areas represent computer generated input to the buyer and the half shaded areas indicate there are some manual processes that must be completed by the buyer in some services.

As we see it, in competitive procurements, the buyer has two major decision points. The first includes reviewing the procurement package and selecting contractors who will be asked to make a bid. The second involves evaluating the bids received against certain criteria and selecting a contractor. We have included, as represented by the dotted line, a decision function unique to some of the services. Using a remote terminal, the buyer can access the computer to get additional information on other purchase requests for the same item. This allows the buyer to consolidate the purchase requests and perhaps obtain lower prices per item by buying in larger quantities. We found instances where the buyers did not consolidate multiple purchase requests for the same item. I will discuss these later.

For sole source procurements, although the number of documents provided to the buyer are less, the process is equally relevant. The buyer must still review the documentation for completeness. However, there may be instances where the buyer knows other sources of supply and can question the need for a sole source procurement.

The next slide (slide 7) identifies computer based information provided to the buyer. The first is the Purchase Authorization which is the buyer's notice and authority to begin the contracting process. The next three--Procurement History, Bidders List, and Contract--are tools available to the buyer to complete the contracting process. The last--Price Variance Report--is a management tool that can be used to identify spare parts price increases that should be investigated.

I will now discuss each of these in detail. All the services have a Purchase Authorization document that the computer produces. Most describe what is being bought but the Navy's does not. For example, looking at the next slide (slide 8), I'd like to see if any of you can identify what is being ordered? Do you know what it is? What it might look like? If so, can you estimate how much it should cost? The item being bought by the Navy is an "actuating ring" used to control air intake into an aircraft engine and costs about $2,000.

The next document, Procurement History, is one of the tools the buyer has available for completing the contract. It contains such information as prior contracts awarded, and other related information. The number of prior contracts and other information

varies by service. For example, the can Navy identify contracts awarded in the last 10 years and the Air Force identifies contracts awarded in the last 3 years. The Army can provide information on up to the last 10 contracts and the Defense Logistics Agency up to the last 6 contracts. For the Army and the Defense Logistics Agency, this means that if all the buys were made in the last year, only that year of procurement history would be provided. Adding more procurement history information would give the buyer a longer price trend line and assist him in making the required "fair and reasonable" price determination.

The Bidders List is the next tool the buyer has available for completing the contracting process. Not all the services have an automated Bidders List and not all buyers automatically receive one for every purchase. The Navy's Bidders List is a manual compilation by each buyer of known bidders identified through the buyer's own past efforts and experiences. The Army does not automatically generate a Bidders List for the buyer on purchases less than $25,000. The buyer must specially request that one be provided.

The Defense Logistics Agency Bidders List identifies the names and addresses of bidders. The Army gives the same information, plus phone numbers, if available, and other coded information on the contractor. The Air Force's Bidders List gives the buyer the most information.

Automated Contracts are another tool the buyer has for completing the contracting process. To a degree, all services have some form of automated contracts. The Army and the Defense

Logistics Agency have automated contracts for small purchases--the Army less than $25,000 and Defense Logistics Agency less than $10,000. The Air Force and the Navy have automated contracts for all purchases, but the Navy automates only certain portions of the contract. The buyer must make manual entries and tailor the remaining portions of the contract before it is sent out for reproduction.

The final document, the Price Variance Report, can be a buyer and management control tool for identifying spare parts price increases that exceed parameters set by management. The Defense Logistics Agency is the only organization that uses the computer to report spare parts price increases. However, this report is limited to contracts of less than $1,000. All but one Defense Logistics Agency supply center identifies and reports price increases greater than 25 percent or $25. The Defense Industrial Supply Center uses 50 percent or $35.

The next slide (slide 9) shows an example of the Defense Logistics Agency's Price Variance Report. Note that the report shows that the current price of $7.65 versus $.71 which was the lowest price paid for the item over the last 12 months. This is more than a 10 fold increase, greatly exceeding the 50 percent management criteria used at the Defense Industrial Supply Center. This particular item is a "retainer ring", similar to a washer. We are showing you this to emphasize how the computer can assist management by flagging price increases. The next slide (slide 10) summarizes what I have told you the services have now.

Now that I have discussed and shown you the computer based tools given the buyer for contracting for spare parts, I would like to go over two examples of spare parts procurements that could have been done better if more automated information had been provided or the buyer had made better use of available information. However, I'd like to emphasize that these are just examples of what we observed happening and are not intended to indicate widespread problems.

My first example is an Army procurement of a frame assembly (slide 11). Observe that in the upper right corner of the Procurement Work Directive for buyer 1 and 2, both procurements were started in May 1983 within 8 days of each other. On the procurement started on May 20, right side of the slide, the procurement directive told the buyer that the first buy was still unawarded. This information is provided so multiple buys for the same item can be consolidated whenever possible.

The points of this example are:

--The procurement authorization document pointed out that the first procurement was still in process but neither buyer made any effort to coordinate and consolidate the two buys. Both buyers were on the same 4-person buying team and sat within 30 feet of each other.

--Neither buyer was provided or requested an Bidders List and both used personally maintained "cuff records" to identify contractors.

--Two different buyers selected different contractors as potential sources. Buyer number one solicited 5 contractors,

but only listed 3, and received 1 bid for $410. Buyer number two solicited nine contractors and received bids from seven (slide 12). The lowest bid received by buyer two was for $139.60. Each buyer ended up with two different prices--$139.60 and $410.00--a difference of $270.40. As an aside, I would like to point out that one of the contractors canvassed by buyer number one and number two were the same. Interestingly enough, this contractor proposed different prices to each buyer--for the quantity of 6 the price was $410 and for 20 the price was $435. The Army has no price variance reporting capability to identify these types of price differences, but it is developing such a reporting capability.

These two contracts were awarded on the same day in July 1983, for the same item, for unit prices that differed by $270.40, and by the same contracting officer (slide 13).

Our next example is of an Air Force procurement of a door seal retainer for the C-5 aircraft. On the procurement history (slide 14), left side, is a number that indicates there was another purchase request for the same item being processed. The other number, 6WR, specifically identifies the first buyer. When the second buyer received a proposed price of $188 per unit and compared it to the $130 cost on the procurement history, the buyer questioned the contractor about the new higher price. The buyer was told it was an "extrusion" product that had to have holes drilled in it. Therefore, with only limited data to question the

price, the buyer accepted Lockheed's "Certification of Data in Support of Proposal Price Breakdown". This certification stated:

Planning and tooling	$ 1.06
Production	13.75
Quality assurance	1.21
Material and parts purchased or subcontracted	121.54
Total factory unit cost	$137.56

To this total, allowable expenses and profits of about $50.00 were added for a total selling price of $188.06. Although shown on the certification as $188.95, the Air Force was able to negotiate away the 89 cents difference.

The points of this example are:

--This spare part was bought on a sole source basis and the technical drawings are proprietry. Therefore, competition was precluded.

--Two procurements were in process at the same time for the same item, and were not coordinated or consolidated.

--The first buyer's contract, for a quantity of 22, was awarded at a unit price of $77.67. The second buyer's contract, for a quantity of 29, was awarded at a unit price of $188.06 (slide 15). This is $110.39 more than the first buyer's contract which was for a quantity of 22 each.

--The buyers had no idea that what was being bought was a standard strip of "extruded" aluminum alloy about 14 inches long, 5/8 inches wide with 7 attaching holes drilled in it.

--Air Force technical engineers examined this part and concluded that it can be fabricated at a unit cost of $6.81 when 25 are made and $4.62 for 400. These engineers stated that no special testing requirements were needed because the part is not a fatigue critical item.

In response to an Air Force inquiry on this spare part, Lockheed's October 10, 1983, letter states the quote for $188.06 was "correct for pricing policies at that time, but was higher than normal as a result of a minimum buy of peculiar raw material that was not carried in stock. Total procured material was priced into this contract." This means Lockheed purchased 4,260 feet of aluminum and allocated the cost to the 29 parts being ordered by the Air Force. We were told by Air Force engineers that the aluminum is available in 10 foot lengths at a cost of $2.70 per length. Lockheed's newly adjusted price per unit is $32.00. This new price is about $25.00 more than Air Force engineers conclude that a quantity of 25 "should cost".

I'd like to reemphasize that these are examples of what we observed happening in the contracting process and are not intended to indicate widespread problems.

Now I'd like to tell you about some of the actions that the services are taking to help the buyer do a better job and to achieve lower spare parts prices (slide 16).

For the Purchase Authorization you see several areas where two dashes are entered. This indicates no action is needed or is being taken to improve the Procurement Authorization documents and is not necessarily a deficiency. However, note that the Army is

taking some action to improve its spare parts procurement planning. On Procurement History, the Navy is including more information on contractor practices. The Air Force is developing a value engineering "should cost" capability to determine what the Air Force should expect to pay for the spare parts and to print this on the procurement history. On the Bidders List, each service has started or plans action to increase competition by identifying additional contractors they can call on to provide needed spare parts. Reading across note that the Navy is increasing the emphasis on competitive awards and the other services are appointing competition advocates. With automated contract documentation, note the Army and Navy are restricting use of unpriced orders. Restricting unpriced orders reduces the number of spare parts that can be ordered without knowing what their actual costs will be. Lastly, on price variances, the Army is developing a price variance reporting capability. We agree these efforts are a step in the right direction, but more can be done and we offer some areas for consideration.

As we see it, the buyer has many tasks where the computer can help improve productivity, increase competition, and help the buyer identify price increases for review (slide 17).

Beginning with the Procurement History, this document could include computer-based information giving (1) the "should cost" data, (2) technical data in "layman" terms, (3) contractor and item profile information, and (4) alternative quantity analysis results. Because alternative quantity analysis is also suggested for Automated Contract Documentation, I will discuss it later.

The "should cost" information, or putting it another way, intrinsic value of the item, would provide the buyer a technical basis for assessing the reasonableness of contractor proposed prices. Technical data in "layman" terms would help the buyer understand what is being bought and what production cost factors might influence a contractor's proposed price. Contractor and item profile information would provide the buyer information on the contractor's past performance, prior pricing, negotiating practices, and cost information on items similar to the one being procured.

The next area for consideration relates to the Bidders List. They would help foster competition and expand the buyer's knowledge of the marketplace. In his July 25, 1983, memo on "Spare Parts Procurement 10 Point Program", Secretary of Defense Weinberger stated that all of the services had a competition advocate in each buying command. However, we found that all the services do not have one in place. This may be because the program is relatively new. We don't know if a competition advocate is needed but we do believe market research techniques should be emphasized. Such techniques could include identifying new sources of supply, that would then be placed in the computer and used for expanding the number of contractors listed on the Bidders List. Also, we believe that a Bidders List should be provided to the buyer for every competitive procurement--regardless of dollar value. If a Bidder List had been given to the two Army buyers in our example, it may have been prevented them from contracting for

the same item on the same day from two different contractors at prices that differed by about $270.

The areas for consideration that support Automated Contract Documentation are (1) automating the buyer's need to analyze contractor proposed cost factor analysis, (2) increasing the use of the computer for preparing solicitation and contract documents, and (3) using the computer to analyze alternative quantity proposals. The Navy recently developed a computerized mathematical model for analyzing contractor proposed cost factor changes, such as new labor rates, overhead, etc. Before this model was developed, it took Navy buyers 3 to 4 hours to manually determine the "bottom line" effect of any contractor proposed change. Now, using a computer, the buyer can get the results in a matter of minutes. Another area where the computer could be used is to reduce the buyer's administrative tasks. The computer could prepare more of the solicitation and contract documents for all types of procurements.

Finally, we believe the government should encourage contractors to offer alternative quantities. Current contracting provisions permit the government to do this. Thus, contractors could offer alternative quantities at varying unit prices that would reflect their production economies of scale. However, in many instances, the quantities requested are so small they limit the contractor's ability to recover costs. If encouraged to do so, we believe contractors would propose alternative quantities and prices and the computer could be used to analyze the various proposals that are received. The buyer could then make an informed

buy decision on quantity and cost--within procurement funding parameters. Looking at the slide (slide 18), you can visualize how increased production quantities should result in lower unit prices.

Now I would like to turn to the area that has received a great deal of attention--unwarranted spare parts prices. We believe the computer can be useful in identifying potential unwarranted price increases by reporting (1) price variances and (2) "should cost" information.

As I mentioned earlier, computer-based price variance reporting is currently limited to the Defense Logistics Agency's small purchases that are less than $1,000. However, the Army is developing a price variance reporting capability and procedures to require the buyer to justify price increases that are greater than 25 percent. We believe such automated reporting capabilities for all services and for all procurements would help buyers and managers flag price increases that should be analyzed to determine if the increase is unwarranted.

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To summarize, you asked us to look at the computer equipment and software that support procurement activities and to focus our work on computer generated products being used to identify unwarranted price increases. We did that (slide 19), and our overall

assessment is (1) the computers are or will be technologically current; (2) the software, with one exception, is outdated; (3) the computer-generated products and information for procurement officials to use are limited; and (4) the computer capabilities designed to identify and prevent unwarranted price increases range from limited to none. We have also discussed the services' efforts to improve the procurement of spare parts and identified areas where we believe automation could help the buyer before, during, and after contracting (slide 20). These computer-based changes can increase the buyer's productivity, expand spare parts competition, and help identify unwarranted price increases. To the extent that our considerations are not already a part of software improvements planned by the services, we believe they should be.

Mr. Chairman, I remind you that the area we looked at to respond to your request is but a small segment in the overall logistics process. Many of these functions, where more work needs to be done, also affect pricing.

GAO's new division, the Information Management and Technology Division, was formed in July of this year and is responsible for GAO work in computers, information technology, and communications. Its Defense Logistics Systems group is now identifying and planning its audit priorities for the next several years. Although we believe the computer offers many opportunities for making significant improvements, even the most modern computers and software cannot substitute for effective buyer practices, as our two examples have illustrated. Contracting officers and

buyers are oriented to support military requirements and buyers work for contracting officers. In other GAO reviews on spare parts procurement we are finding that buyers are being rated on their ability to award large numbers of contracts and not on their actions to prevent or resolve unwarranted spare parts price increases.

While we agree that productivity is important, we believe pricing reviews and attention to suspected over-pricing should be considered when the buyer's performance is being evaluated.

This concludes my testimony. I am ready to answer questions you may have.