



ACQUISITION,
TECHNOLOGY
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THE UNDER SECRETARY OF DEFENSE

3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010

JUN 30 2004

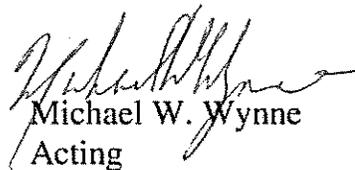
The Honorable Duncan Hunter
Chairman, Committee on Armed Services
U.S. House of Representatives
Washington, DC 20515-6035

Dear Mr. Chairman:

The attached report is submitted in response to section 8143 (a) of the Department of Defense Appropriations Act, 2004, Public Law 108-87 (2003), concerning safety issues due to defective parts.

Similar letters and reports have been provided to the other congressional defense committees.

Sincerely,


Michael W. Wynne
Acting

Attachment:
As stated

cc:
The Honorable Ike Skelton
Ranking Member



Office of the Secretary of Defense

Report to Congress

Safety Issues Due To Defective Parts

Introduction:

Section 8143 of the Department of Defense Appropriations Act, 2004, Public Law 108-87 (2003), requires the Secretary of Defense to report to the congressional Defense committees on safety issues due to defective parts. The Department of Defense (DoD) is pleased to submit this report to the committees outlining the Department's examination of this issue and steps taken in response to the following specific areas of interest.

(1) how to implement a system for tracking safety-critical parts so that parts discovered to be defective, including due to faulty or fraudulent work by a contractor or subcontractor, can be identified and found;

(2) appropriate standards and procedures to ensure timely notification of contracting agencies and contractors about safety issues including parts that may be defective, and whether the Government Industry Data Exchange Program should be made mandatory;

(3) efforts to find and test airplane parts that have been heat treated by companies alleged to have done so improperly; and

(4) whether contracting agencies and contractors have been notified about alleged improper heat treatment of airplane parts.

Background:

While the precise language of section 8143 does not limit its applicability to aviation critical safety items, these items were the focus of Senator Harkin in the Congressional Record language accompanying Amendment 1311, 149 Congressional Record S9567. Accordingly, this report is limited to aviation critical safety items. As a matter of practice, the Department will take appropriate remedial action, where required, with respect to critical safety items. Section 2319 (g) of title 10, United States Code defines aviation critical safety items (CSIs) as parts, assemblies, installation equipment, launch equipment, recovery equipment or support equipment for an aircraft or aviation weapon systems, the failure, malfunction or absence of which could cause a catastrophic loss or critical failure resulting in loss or serious damage to an aircraft or weapon system, an unacceptable risk of personal injury or loss of life, or an uncommanded engine shutdown. Less than 5% of Nationally Stock Numbered (NSN) items are aviation CSIs. Because of

the unique nature of aviation CSIs, the severe consequences of failure, and little margin for error, the DoD has placed special emphasis on enhancing the life-cycle management of these parts.

The following actions have been taken:

As part of the legislative program submitted in April 2003 for the National Defense Authorization Act of 2004, the DoD requested statutory language ensuring that 1) the Military Service Design Control Activity be responsible for identifying and managing aviation CSIs and approving sources of supply; 2) contracting activities purchase aviation CSIs only from approved sources; and 3) delivered aviation CSIs meet the requirements established by the Design Control Activity. Section 802 of the National Defense Authorization Act for Fiscal Year 2004, Public Law 108-136 addresses quality control in the procurement of aviation critical safety items and associated services.

- Published and issued a detailed guidance memorandum from the Joint Aeronautical Commanders' Group (JACG) covering aviation CSI management from identification of aviation CSIs, approval of sources, quality assurance, through to disposal (*Management of Aviation Critical Safety Items, 28 Aug 02*). This memorandum was signed by the 9 Flag-level members of the JACG (Military Services, DLA, DCMA, NASA, FAA, and the Coast Guard). A Joint Service/Agency instruction, currently in coordination, will provide further guidance. We expect publication within 120 days.
- Included general aviation CSI policy in DoD 4140.1-R, Sec. C8.5, *DoD Supply Chain Materiel Management Regulation, May 23, 2003*. This policy provides a top-level policy framework for the details contained in the Joint Service instruction described above.
- Developing Defense Federal Acquisition Regulation Supplement (DFARS) coverage to implement section 802 of the Act and ensure timely industry notification of problems with CSIs or the suppliers of the parts

Specific Reporting Requirements:

(1) how to implement a system for tracking safety-critical parts so that parts discovered to be defective, including due to faulty or fraudulent work by a contractor or subcontractor, can be identified and found;

The JACG guidance and DoD 4140.1-R (both described above) require National Stock Numbered (NSN) aviation CSIs to be identified as such in the Federal Logistics Information System (FLIS). Unique aviation CSI criticality codes and fields were created to accommodate the requirement. The FLIS provides a centralized repository from which it can be determined whether a defective or suspect stock numbered item is critical to aviation safety. The requirement to identify aviation CSIs was established in 2002, and the actual identification of aviation CSIs is continuing. We have populated the

FLIS with approximately 34,000 known aviation CSIs identified to-date and have directed Integrated Material Managers to include newly identified aviation CSIs in the FLIS. We have also directed the Integrated Material Managers to apply the most stringent criticality determination for an item used in multiple platforms, where the item is safety critical in some applications but not in others.

The JACG guidance and DoD 4140-1R require aviation CSIs to have serial numbers on each item and on the packaging, unless impractical to do so (e.g., small consumable parts). Where it is impractical to serialize individual consumable aviation CSIs, the guidance and policies require the items to have distinguishable marking schemes. By doing this, defective or suspect aviation consumable CSIs can be more readily identifiable on shelves and once they are installed in aircraft.

Additionally, DoD recently issued policy that requires solicitations for tangible property valued at \$5,000 or more to include a requirement that items have Unique Identification (UID) markings in accordance with international standards (ISO/IEC 15434). Another initiative under development, Radio Frequency Identification (RFID), holds promise for the future by providing a technological means for physically tracking individual assets. Aviation critical safety items are a high priority for UID and RFID implementation, regardless of dollar value. These initiatives will assist the DoD greatly in the future in tracking aviation CSIs throughout their life-cycle.

(2) appropriate standards and procedures to ensure timely notification of contracting agencies and contractors about safety issues including parts that may be defective, and whether the Government Industry Data Exchange Program should be made mandatory;

Currently, there are no DoD regulatory or policy requirements for contractors to notify contracting agencies (or industry) about safety issues, including those relating to defective parts. We are taking specific steps to correct this deficiency. Contractors are responsible for ensuring delivered products meet contract requirements. A contractor that knowingly delivers defective or nonconforming products, without the Government's knowledge and consent, whether safety is impacted or not, is committing fraud. ✓

The DoD is developing Defense Federal Acquisition Regulation Supplement (DFARS) language that would require a contractor to notify the contract administration office and the contracting office when the contractor identifies manufacturing, repair and overhaul, quality assurance, or subcontractor deficiencies that potentially impact on safety. The requirement is expected to apply to both in-production and delivered parts. We are also considering regulatory coverage that would require a contractor to advise contract administration offices and contracting offices when they suspend or remove a previously approved subcontractor or supplier from their listing of approved sources. Both approaches would provide timely insight into real or potential problems that could impact safety.

The Government Industry Data Exchange Program (GIDEP) is currently a voluntary program dependent upon the willingness of companies to share data. Issues and concerns have been raised by both industry and the Government over making GIDEP mandatory. Until these issues and concerns have been examined, and we have fully assessed the impacts, it is premature for us to take a position on whether GIDEP should be made mandatory.

(3) efforts to find and test airplane parts that have been heat treated by companies alleged to have done so improperly; and

The DoD actively investigates allegations of improper heat treatment of aircraft parts (as well as any other allegations regarding defective manufacturing when we are alerted to the situation). With respect to heat treatment, DoD seldom directly contracts with heat treatment facilities and our visibility into problems is often limited and delayed. Heat treatment is a special metallurgical process typically performed by second, third, or lower tier subcontractors. Heat treatment facilities are approved by system prime contractors, major subsystem contractors, Original Equipment Manufacturers (OEMs), and independent organizations. Individual aerospace part manufacturers are typically required to use only approved facilities for heat treatment and other special processes. Part manufacturers are able to select from a number of approved heat treatment facilities, and it is not uncommon for the part suppliers to use multiple facilities, depending upon cost, schedule, or other considerations.

With respect to alleged improper heat treatment of aircraft parts, we are aware of heat treatment issues relating to Temperform USA, La Mirada, California. In 1998, Temperform USA received approval as a heat treatment facility from aerospace companies and the Performance Review Institute. Subsequent to receiving approval, Temperform USA was alleged to have inconsistently applied specified heat treatment processes. Concerns raised by a whistleblower to one of the aerospace companies led to Temperform USA's removal as an approved heat treatment facility by that aerospace company in March 2000. The whistleblower also prompted an investigation by the Defense Criminal Investigative Service (DCIS).

In May 2002 the DCIS issued a Government-only report on alleged falsified heat treatment and inspection processes at Temperform USA. In June 2002, a Government-only GIDEP Agency Action Notice was issued on alleged improper heat-treating of aluminum aircraft parts processed by Temperform USA. Both documents described alleged violations by Temperform USA of numerous heat treatment process requirements between 1998 and 2000, affecting many aviation systems. These were the first reports concerning the matter that DoD program and contracting offices received. The Services, through the JACG, began immediate action to understand the nature and scope of the potential problem. The Naval Air Systems Command (NAVAIR) took the lead within the JACG.

In July 2002, NAVAIR hosted a meeting with members of the multi-agency Federal investigative task force, potentially affected program offices, the Defense Logistics

Agency (DLA), and the Defense Contract Management Agency (DCMA) on the matter. In August 2002, NAVAIR metallurgy experts visited the Federal investigative task force office in El Toro California to review records, evidence, and witness testimony. From August-December 2002 there was continuous dialog between JACG member organizations and DCIS on the investigation. In December 2002, the Commander of NAVAIR wrote to the Chief Executive Officers (CEOs) of the aerospace companies with potentially the largest population of Temperform USA processed parts in the aviation systems they produced. He requested their assistance in identifying and correcting suspect parts and in improving supplier management processes. NAVAIR's Assistant Commander for Contracts provided specifics on the assistance required. In January 2003, the Commander of the Air Force Aeronautical Systems Center (ASC), who was serving as the Chair of the JACG, wrote the CEOs on behalf of all JACG members. He reiterated the Navy's request for assistance across all programs, military Services, and civil aviation.

The JACG has since worked individually with each of the companies, affected program offices, and the Federal investigative task force to determine: 1) the extent of Temperform USA processed parts in aviation systems; 2) whether there is a safety impact from the improper heat treatment, other potential affects (e.g., long-term durability), etc.; and 3) remedial actions. After considerable research, the JACG determined that The Boeing Company, Northrop Grumman Corporation, Lockheed Martin Corporation, and Sargent Fletcher Inc were the predominant recipients of Temperform USA processed parts. The JACG and the companies have been working steadily to identify and scope the population of suspect parts, establish assessment approaches, perform evaluations, and conduct analysis. Complicating factors in the investigation are: 1) the volume of parts processed by Temperform USA (well over 100,000 individual piece parts involving about 5,000 unique part numbers- in actuality, only a small fraction of these are aviation CSIs); 2) individual part numbered items were often manufactured by multiple sources; 3) different heat treatment facilities occasionally processed the same part number over time; 4) few of the parts had serial numbers or distinguishing features; 5) confiscated Temperform USA records were unreliable and not credible; 6) Temperform USA alleged process violations varied and were inconsistent; 7) examination beyond the typical nondestructive tests would selectively be required of aviation CSIs; and 8) there were relatively few Temperform USA processed parts remaining in contractor inventories to test. The requirement for UID markings on aviation CSIs should aid in the identification and examination or recall of defective parts in the future.

The JACG and the aerospace companies have identified extremely few aviation CSIs processed by Temperform USA. The overwhelming majority of Temperform USA processed parts were not structurally significant. To date we have identified only one (1) Temperform USA processed critical safety part numbered item in aircraft systems produced by Northrop Grumman (out of over 2,300 unique part numbered items processed by Temperform USA for Northrop Grumman systems). We identified ten (10) part numbers involving about 300 individual piece parts (out of 4,300 individual parts total) processed by Temperform USA for Sargent Fletcher. We have identified no safety critical Temperform USA parts in aircraft manufactured by Lockheed Martin

(approximately 780 unique part numbers). Boeing St. Louis did not identify any aviation CSIs among the 2,357 Temperform USA processed part numbers (approximately 88,000 individual piece parts). We continue to work with Boeing on identifying Temperform USA processed parts at other Boeing locations.

Nondestructive hardness and electrical conductivity testing has been completed on approximately 2,400 individual Temperform USA processed piece parts. Further testing was performed where anomalies were detected, including selective destructive salt spray and tensile testing. No safety implications have been identified from testing completed to date. The testing did identify a low-risk potential for premature corrosion for some parts. We are working with the contractors to identify Temperform USA processed parts in corrosion susceptible areas of the aircraft. We are finalizing plans with Sargent Fletcher to conduct testing on all Temperform USA processed CSIs used in their external fuel tanks and refueling pod/pylon assemblies. Testing of Sargent Fletcher CSIs processed by Temperform USA will begin shortly. In the interim, a bulletin was issued in January 2004 restricting use of external KC-130J fuel tanks with Temperform USA processed CSIs.

(4) whether contracting agencies and contractors have been notified about alleged improper heat treatment of airplane parts.

All affected DoD contracting agencies and major aerospace contractors were notified about the alleged heat treatment problems at Temperform USA by the DCIS report, the Agency Action Notice, and the NAVAIR and JACG letters. On July 3, 2003, Temperform USA, the parent company Hydroform USA, and three (3) employees were indicted on 34 counts of fraud. On August 29, 2003, Hydroform USA, Temperform USA, West Coast Aluminum Heat Treating Co (the predecessor to Temperform USA), and 17 employees were indefinitely suspended from Government contracts.

We appreciate the opportunity to provide this report. The safety of our personnel and our equipment is of paramount concern to the DoD. The Department takes all allegations of product, process, or operational deficiencies that impact safety extremely seriously. We believe our actions to enhance life-cycle management of aviation CSIs are responsible and necessary. We will continue to pursue additional improvements.