FAA’s Ability To Manage Its National Airspace System Inventory Is Limited by Several Gaps in Its Processes That Remain After Adoption of the Agency’s Current Inventory Management System
FAA’s Ability To Manage Its National Airspace System Inventory Is Limited by Several Gaps in Its Processes That Remain After Adoption of the Agency’s Current Inventory Management System

Self-initiated
Federal Aviation Administration | FI2021029 | July 12, 2021

What We Looked At
Through its Logistics Center, the Federal Aviation Administration (FAA) maintains, repairs, and overhauls equipment for the National Airspace System (NAS). The Logistics Center is FAA’s only centralized distribution center for NAS inventory, valued at $735 million. Each year, it ships and receives approximately 200,000 parts to FAA field offices and other domestic and international customers. Previous reviews have found that FAA did not have sufficient controls in place to track and manage its inventory. Accordingly, we initiated this audit with the following objective: to determine if FAA has effective oversight controls for managing the NAS inventory, including controls to appropriately account for excess, obsolete, or unserviceable (EOU) items.

What We Found
FAA lacks sufficient oversight controls for managing its NAS inventory and continues to maintain excessive quantities of old and unserviceable parts. In part, this is because FAA lost the automatic functionality for monitoring excess inventory levels after it transitioned to a new inventory management system. The transition to the new system also impacted FAA’s ability to track EOU inventory to final disposition and monitor exchange and repair (E&R) parts shipped to and from the field. Furthermore, FAA must manually recalculate inventory values for most E&R parts and faces about $1 million in quantity discrepancies. The lack of sufficient controls limits FAA’s ability to accurately report its inventory values and determine the stock levels it needs to support NAS systems.

Our Recommendations
We made seven recommendations to improve FAA’s ability to manage and provide oversight for the NAS inventory. FAA concurred with recommendations 1–4, 6, and 7. Thus, we consider these recommendations resolved but open pending an OIG review and FAA’s completion of planned actions. FAA partially concurred with recommendation 5 and provided an alternative action but did not describe the course of action it will take if parts are never returned or the impact of unreturned parts on its financial statements. Therefore, we consider recommendation 5 open and unresolved. We request that the Agency reconsider its position on this recommendation and provide us with its revised response within 30 days of the date of this report in accordance with DOT Order 8000.1C.

All OIG audit reports are available on our website at www.oig.dot.gov.

For inquiries about this report, please contact our Office of Government and Public Affairs at (202) 366-8751.
Memorandum

Date: July 12, 2021

Subject: ACTION: FAA’s Ability To Manage Its National Airspace System Inventory Is Limited by Several Gaps in Its Processes That Remain After Adoption of the Agency’s Current Inventory Management System | Report No. FI2021029

From: Barry J. DeWeese  
Principal Assistant Inspector General for Auditing and Evaluation

To: Federal Aviation Administrator

Through its Logistics Center, the Federal Aviation Administration (FAA) maintains, repairs, and overhauls equipment for the National Airspace System (NAS). The Logistics Center is FAA’s only centralized distribution center for NAS inventory, valued at $735 million. Each year, it ships and receives approximately 200,000 parts, which support over 77,000 systems for FAA field offices and other domestic and international customers.¹

When KPMG LLP, an independent public accountant, audited FAA’s financial statements for fiscal years 2016 and 2015 under our oversight, it found that a 2016 conversion to a new inventory system was a unique, one-time, implementation outside of normal business processes. As a result, FAA did not have sufficient policies, procedures, and controls in place to address the changes resulting from the implementation.² More recently, a 2019 Office of Inspector General (OIG) report found internal control weaknesses in the NAS inventory management. Specifically, we found that FAA does not have a detailed aging report for tracking the age of its inventory, which might include items that are

¹ Major customers are FAA’s Air Traffic Organization (ATO) Technical Operations, Air Traffic Program Management Office, and Mike Monroney Aeronautical Center (MMAC); the Departments of Defense and Homeland Security; U.S. Forest Service; and a few international government entities. FAA accounts for 60 percent of the Center’s business.

30 or more years old. As a result, we reported that it was difficult to determine if FAA was overstating or understating the value of the NAS inventory.\(^3\)

Accordingly, our objective for this self-initiated audit was to determine if FAA has effective oversight controls for managing the NAS inventory, including controls to appropriately account for excess, obsolete, or unserviceable items.

To conduct our work, we interviewed FAA employees at the Logistics Center and headquarters personnel on policy and procedures for managing NAS inventory, including excess, obsolete, or unserviceable (EOU) items. During an August 2020 site visit to FAA’s Logistics Center in Oklahoma, we used statistical sampling and performed tests to locate NAS inventory and assess the completeness of FAA’s inventory record. Additionally, we visited the Thomas Road Warehouse\(^4\) to review FAA’s procedures for managing EOU inventory from receipt to final disposition.

We conducted this audit in accordance with generally accepted Government auditing standards. Exhibit A details our scope and methodology. Exhibit B lists the entities we visited or contacted.

We appreciate the courtesies and cooperation of Department of Transportation (DOT) representatives during this audit. If you have any questions concerning this report, please call me at (202) 366-1302 or Dory Dillard-Christian, Program Director, at (202) 570-6381.

cc: The Secretary
DOT Audit Liaison, M-1
FAA Audit Liaison, AAE-100

\(^3\) FAA Needs to Improve Oversight and Enhance Transparency in Its Franchise Fund (OIG Report No. FI2020012), December 11, 2019. OIG recommended that FAA develop and implement a process to maintain detailed records of the age and cost of inventory items as a way to identify obsolete items and prevent unnecessary storage and maintenance costs or purchase of assets already on hand. FAA partially concurred, indicating it would develop a process to annually revalidate and document the rationale to retain, maintain, and store replacement parts for the systems that support the NAS. This recommendation is resolved but open pending completion of corrective actions that meet the intent of this recommendation.

\(^4\) Located elsewhere in Oklahoma City, this warehouse serves as a centralized location for the receipt of excess, obsolete, or unserviceable (EOU) property, including NAS inventory.
Background

The Federal Aviation Act of 1958 established FAA and made it responsible for the control and use of navigable airspace within the United States. FAA created the NAS to protect people and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS includes both domestic and oceanic airspace and is made up of a network of air navigation and air traffic control facilities, airports, and technology, as well as appropriate rules and regulations that are needed to operate the system. FAA shares some NAS components jointly with the military. Each day, FAA provides air traffic services to 2.9 million airline passengers on more than 45,000 flights—5,400 simultaneous flights during peak times—within approximately 30 million square miles of airspace.

Located at the Mike Monroney Aeronautical Center (MMAC) in Oklahoma City, FAA’s Logistics Center (the Center) provides supply chain management and logistics support for NAS equipment integral to the Agency’s Next Generation Air Transportation System (NextGen) modernization effort. In 2019, for example, the Center oversaw the repair and testing of over 44,000 parts critical for surveillance, navigation, weather, communications, and landing systems.

The NAS inventory managed by the Center is stored primarily in the Logistics Support Facility (LSF) warehouse and a few other locations at MMAC. The Center is also responsible for monitoring and tracking parts shipped out and returned from the field. Most of this inventory consists of parts, materials, and supplies that support the NAS; the rest comprises facilities and equipment inventory, managed by the Center but owned by FAA program offices (see exhibit D).

FAA classifies NAS inventory as held for sale, held for repair, or raw materials and work in process. As of September 30, 2020, FAA’s total NAS inventory value was approximately $735 million (see figure 1).

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5 NextGen is a multi-billion dollar infrastructure project aimed at modernizing our Nation’s aging air traffic system and includes new air traffic management technologies and procedures; airport infrastructure improvements; and environmental, safety, and security-related enhancements.

6 The Center was virtually realigned from FAA’s Office of Finance and Management to ATO in June 2018. Organizationally, the effective date of the transition to ATO was August 30, 2020.

7 For financial statement purposes, facilities and equipment inventory is classified under raw materials and work in process.
Within the overall inventory classifications, NAS inventory is further categorized according to operational condition and group. Operational conditions include serviceable parts that are ready for shipment to NAS customers and repairable or nonoperational parts that require technical evaluation and service before they can be sold to customers. Groups generally include parts suitable for exchange and repair (E&R), expendables, which are small-dollar items that are consumed during use and used routinely in any job; and parts that are considered excess or beyond economical repair and are no longer required to meet FAA’s mission. FAA transfers this last group of parts to the Thomas Road Warehouse as EOU inventory.

Most of the NAS inventory at the LSF warehouse consists of serviceable or repairable E&R parts, and management of these parts plays a significant role in the Center’s mission. To track its inventory, FAA uses two automated management systems—the Logistics Center Support System (LCSS) and Warehouse Management System (WMS). LCSS records official quantities for financial reporting purposes; WMS documents inventory quantities and storage locations. LCSS has been in place since April 2016, when FAA’s Logistics Center

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8 An E&R inventory part is one that can be returned to the Logistics Center for replacement or repair. An E&R part in a serviceable condition is generally ready for shipment to the field. An E&R part in a repairable condition must be fixed before it can be put into service.
replaced its previous system, the Logistics Inventory System (LIS),\textsuperscript{9} and retained WMS.\textsuperscript{10}

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### Results in Brief

**FAA lacks sufficient oversight controls for managing its NAS inventory.**

The Agency does not assess inventory age and, as such, has continued to maintain excessive quantities of old and unserviceable parts without adequately considering future demand and customer need. In part, this is because FAA lost the automatic functionality for monitoring excess inventory levels after it transitioned to the LCSS inventory management system. While the Agency plans to add this functionality to LCSS, it has not established an interim process for determining where excess inventory levels are occurring. Thus, we found that FAA’s overall NAS inventory value has increased by more than 13 percent since fiscal year 2017, and inventory held for repair has increased by almost 20 percent. In addition, the LCSS transition has impacted FAA’s ability to track EOU inventory to final disposition and monitor E&R parts shipped to and from the field. While FAA policy requires inventory accountability and detailed inventory records, at the time of our audit, the Agency reported that more than 10,000 E&R parts—with a value of over $38 million—had not been returned to the LSF warehouse within 30 days, as required. Furthermore, due to the lack of planning and process integration that occurred when the Agency implemented LCSS, FAA must manually recalculate inventory values for most E&R parts on a monthly basis, and approximately $1 million in quantity discrepancies exist between LCSS and WMS. The lack of sufficient controls limits FAA’s ability to accurately report its inventory values and determine the stock levels it needs to support NAS systems.

We are making recommendations to help FAA improve its ability to manage and provide oversight for the NAS inventory, including EOU items designated for final disposition.

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\textsuperscript{9} According to FAA officials, the Agency replaced LIS with LCSS due to “system obsolescence, economics, and data capabilities for managing supply and inventory.” FAA implemented LCSS for about $82 million.

\textsuperscript{10} According to officials at FAA’s Logistics Center, at the time of the conversion, WMS remained in place due to complex re-engineering and configuration requirements.
FAA Lacks Sufficient Oversight Controls for Managing Its NAS Inventory

Specifically, FAA does not assess inventory age and, as such, continues to maintain excessive quantities of old and unserviceable parts. The Agency also lacks a process for tracking EOU inventory and has not recovered thousands of repairable parts from the field. Furthermore, FAA’s inventory valuation system is not updated automatically, and the Agency does not document its manual process for calculating inventory value. Finally, FAA has not accounted for approximately $1 million in discrepancies within its inventory management systems.

FAA Does Not Assess Inventory Age and Maintains Excessive Quantities of Broken Parts

FAA’s Inventory Management Guide\textsuperscript{11} states that proper inventory accountability requires the Agency’s components to maintain detailed records, whether the items are produced or acquired. Maintaining detailed records of the age of inventory items is a way to identify obsolete items and prevent unnecessary storage and maintenance costs or the purchase of assets already on hand.\textsuperscript{12}

Yet during our 2019 audit of FAA’s Franchise Fund, Agency officials stated that tracking inventory age would be extremely difficult because the Agency’s systems were not designed to respond to such requests. While they acknowledged that NAS inventory items could be 30 or more years old, they stated that an aged inventory report would not add significant value to their current processes or be worth the cost required to implement it. FAA officials added that the primary driver of inventory stock levels was not age but the availability of parts for active NAS systems. Additionally, FAA asserted that they had processes in place for handling excess inventory.

However, during this current audit we found that tracking inventory age would not require the Agency to implement a new system. In fact, FAA could use its existing LSF warehouse codes to assess the approximate ages of the E&R inventory items stored at the LSF warehouse. Each E&R inventory part is assigned

\textsuperscript{11} FAA Order 4600.27C, Personal Property Management, September 4, 2015.

\textsuperscript{12} When we asked if FAA could identify the associated carrying costs for inventory within the LSF warehouse, Agency officials informed us that inventory carrying costs are distributed across the operating budgets for the Franchise Fund and the MMAC Office of Facility Management on the appropriations side.
an LSF number\textsuperscript{13} when it is received and placed in storage (see figure 2). Since LSF numbers are assigned chronologically, the oldest numbers are more likely to be associated with excess or obsolete items. We judgmentally selected 20 of the oldest LSF numbers currently in use, found their associated part numbers, and asked FAA to determine the dates of their last activity. None of the 20 parts had been active since 2009, and 10 of the 20 had not been used since 2001.\textsuperscript{14}

Figure 2. Storage Aisle, Logistics Support Facility Warehouse

Further, year after year, FAA continues to accumulate excess NAS inventory parts held for repair. Between 2017 and 2020, the value of FAA’s held-for-repair inventory steadily increased from approximately $359 million to more than $431 million, an overall increase of about $72 million (see table 1).

\textsuperscript{13} WMS generates LSF numbers in numerical order at the time parts are received and then assigns them to appropriate LSF warehouse locations.

\textsuperscript{14} According to FAA, customer order data prior to 2001 are not available.
Table 1. Comparison of NAS Inventory Values From 2017 to 2020 (in Thousands)

<table>
<thead>
<tr>
<th>As of September 30th</th>
<th>Inventory Held for Sale</th>
<th>Inventory Held for Repair</th>
<th>Raw Materials and Work in Process</th>
<th>Total Inventory</th>
<th>Percentage Increase in Held for Repair Inventory</th>
<th>Overall Percentage Increase in NAS Inventory Since 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>$241,215</td>
<td>$359,421</td>
<td>$48,427</td>
<td>$649,063</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>2018</td>
<td>$249,399</td>
<td>$366,620</td>
<td>$47,189</td>
<td>$663,208</td>
<td>2.0%</td>
<td>2.2%</td>
</tr>
<tr>
<td>2019</td>
<td>$254,558</td>
<td>$394,302</td>
<td>$41,663</td>
<td>$690,523</td>
<td>9.7%</td>
<td>6.4%</td>
</tr>
<tr>
<td>2020</td>
<td>$264,559</td>
<td>$431,067</td>
<td>$39,833</td>
<td>$735,459</td>
<td>19.9%</td>
<td>13.3%</td>
</tr>
</tbody>
</table>

Source: FAA Financial Statements (note 5) as outlined in FAA’s Performance and Accountability Reports from 2017 to 2020

According to the Inventory Management Guide, when FAA is considering which stock levels to maintain, it should account for demand, safety requirements, and economic order quantity benefits.\(^15\) Moreover, the guide directs FAA to eliminate stocks of items that are no longer needed due to normal attrition. For example, whenever NAS equipment is permanently removed from service, there is no need to retain its supporting inventory. FAA’s Inventory Management Guide gives the Agency’s inventory managers the responsibility of determining and monitoring demand, optimizing stock availability, and obtaining accurate and current data to assess customer needs and identify unusual stock situations.

In response to our 2019 audit, FAA reported it had developed a process to identify obsolete or unused items in the LSF warehouse\(^16\) in order to limit unnecessary storage and maintenance costs. The plan included a standard operating procedure for identifying inactive or decommissioned NAS systems and comparing part numbers to help FAA remove the old parts stored for these systems. To test FAA’s new process and determine whether FAA was storing excess inventory, we statistically sampled 68 E&R part numbers for items stored in the LSF warehouse as of August 10, 2020. We asked FAA to determine whether the parts were still required. In turn, an FAA program manager conducted a review to determine if the NAS systems associated with these part numbers are still active. FAA reported that, based on this analysis, the associated systems were still active, and thus all parts were still required and were not excess.

\(^{15}\) Economic order quantity is a mathematically proven method for arriving at the lowest total cost for ordering and holding inventory to meet expected supply requirements.

\(^{16}\) OIG recommended in 2019 that FAA develop and implement a process to maintain detailed records of the age and costs of inventory items to prevent unnecessary storage, maintenance, and acquisition costs. FAA Needs to Improve Oversight and Enhance Transparency in Its Franchise Fund (OIG Report No. FI2020012), December 11, 2019.
While FAA’s process does identify specific part numbers associated with decommissioned systems, we found that the new process does not identify excessive inventory quantities or the demand for “repairable” parts held in stock for future use. We identified several examples in which the quantity of repairable parts listed under a specific part number greatly eclipsed the actual quantity of serviceable (able to be used) parts in the LSF warehouse. For example, according to the Agency’s inventory, FAA has 1,041 units of a single part on hand. However, based on our review, only 2 units were serviceable and 1,039 were repairable (broken and required repair before use). See table 2 for additional examples.

Table 2. Comparisons of Serviceable and Repairable E&R Parts to Total Quantity On Hand

<table>
<thead>
<tr>
<th>Part #</th>
<th>Part Description</th>
<th>Total S &amp; R* Quantity</th>
<th>Serviceable Units</th>
<th>Repairable Units</th>
<th>Repairable Value</th>
<th>Total S &amp; R* Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>014158437</td>
<td>Circuit card assembly</td>
<td>590</td>
<td>10</td>
<td>580</td>
<td>$6,761,744.40</td>
<td>$6,884,251.70</td>
</tr>
<tr>
<td>013016093</td>
<td>Network, circuit protection</td>
<td>449</td>
<td>5</td>
<td>444</td>
<td>$2,364,619.68</td>
<td>$2,392,919.68</td>
</tr>
<tr>
<td>001233952</td>
<td>Transmitting set, radio</td>
<td>1,041</td>
<td>2</td>
<td>1,039</td>
<td>$2,178,086.87</td>
<td>$2,184,902.87</td>
</tr>
<tr>
<td>013691353</td>
<td>UHF/AM transmitter radio</td>
<td>1,290</td>
<td>10</td>
<td>1,280</td>
<td>$6,940,800.00</td>
<td>$7,002,545.40</td>
</tr>
<tr>
<td>012941423</td>
<td>Circuit card assembly</td>
<td>796</td>
<td>3</td>
<td>793</td>
<td>$2,221,541.92</td>
<td>$2,230,838.92</td>
</tr>
<tr>
<td>014768617</td>
<td>Keyboard, data entry</td>
<td>719</td>
<td>8</td>
<td>711</td>
<td>$703,228.77</td>
<td>$713,417.89</td>
</tr>
</tbody>
</table>

Note: * S = Serviceable. R = Repairable.

Source: FAA’s LCSS inventory report as of August 10, 2020

FAA officials acknowledged this is an issue and agreed that they do not need to maintain that many unserviceable or broken parts. The director of FAA’s Logistics Center attributed the buildup to the 2016 inventory system conversion from LIS to LCSS. The previous inventory management system, LIS, was able to automatically generate an excess report based on part number demand, which helped FAA determine when it was accumulating too many units for a specific part. According to FAA, this automated process used repair lead times and safety stock levels to determine required inventory levels, compare demand to parts on hand, and generate a report listing excess or unnecessary parts. At the time of our audit, LCSS did not have the ability to automatically generate such reports. While FAA has future plans to upgrade LCSS and implement this automated process.
functionality, it has not established an interim process for determining where excess inventory levels are occurring.\textsuperscript{17}

### FAA Does Not Track Excess, Obsolete, or Unsuitable NAS Inventory Items to Final Disposal

The Government Accountability Office’s (GAO) best practices for inventory management\textsuperscript{18} state that proper accountability requires agencies to maintain detailed records and document that inventory in financial management records and reports. Physical controls and accountability reduce the risk of undetected theft and loss. They also improve visibility, accountability, and storage and control of excess or obsolete stock.

FAA has not established a comprehensive process or mechanism to properly account for EOU items in the NAS inventory when those items are transferred to the Thomas Road Warehouse for final disposal. More specifically, once EOU items leave the LSF warehouse, FAA stops maintaining the related inventory records. As a result, FAA cannot track EOU parts in the NAS inventory, leaving them vulnerable to waste or theft.

**Figure 3. Bins Holding Circuit Boards Scrapped for Their Precious Metals, Thomas Road Warehouse**

![Source: OIG photo, August 2020](image)

EOU items may include receiver-transmitters, monitors, radio test sets, and power meters. Such items hold a salvage value, even if they are no longer recorded as

\textsuperscript{17} FAA has provided an LCSS program increment schedule that includes planned system updates through December 31, 2025.

\textsuperscript{18} GAO, *Best Practices in Achieving Consistent, Accurate Physical Counts of Inventory and Related Property* (GAO-02-447G), March 1, 2002.
inventory in FAA’s financial statements. Many of these inventory parts could be scrapped onsite at the Thomas Road Warehouse for their precious metals, including material from computer circuit boards (see figure 3). FAA could also donate EOU items to the Federal Prison Industries (FPI) for recycling purposes or sell them via the General Services Administration (GSA). According to FAA, the Agency generates minimal revenue from GSA auction sales of NAS inventory. Overall, FAA reported a total value of $8.3 million in EOU NAS inventory for fiscal year 2019 and $2.6 million for fiscal year 2020.19

During our audit, we judgmentally selected and attempted to locate 22 excessed NAS inventory parts that had been sent to the Thomas Road Warehouse for final disposition. Initially, FAA was unable to locate six of the 22 parts, including four 15-inch display monitors with a carrying amount (original item cost) of $27,064. However, FAA did locate all six parts after our site visit. According to FAA, two of the parts were at the Thomas Road Warehouse and had been missed by FAA representatives assisting the audit team. However, these representatives found that the four display monitors had never been shipped to this warehouse. FAA officials found them at the LSF warehouse, even though they had been designated as EOU inventory.

To facilitate their work, FAA’s property disposal officers and managers rely on a web application called Utilization, Screening, and Disposition Web (USDWeb). Staff at the Thomas Road Warehouse use USDWeb to track EOU inventory throughout the disposal process.20 However, USDWeb does not interface with LCSS;21 as a result, Thomas Road Warehouse staff cannot generate automated receipts for EOU items. Instead, they have established a sorting/disposition workaround procedure for items that arrive onsite. However, that process only tracks parts identified for resale; other parts are simply stored in the warehouse. FAA also generates an annual LCSS report that lists all the inventory items scrapped during the previous year. However, this process is not exact and represents FAA’s efforts to estimate for reporting purposes—using manufacturer part numbers—whether parts were scrapped or donated to FPI.

According to FAA officials, the Agency plans to develop and implement an interface to connect LCSS to USDWeb between January 2022 and September 19 The totals represent the carrying amount of the inventory items prior to their identification as EOU inventory and do not represent the salvage value.
20 The Thomas Road Warehouse also services FAA by overseeing the recycling, resale via GSA, or disposal of accountable property at MMAC. Staff track property such as computers and monitors via FAA’s Automated Inventory Tracking System (AITS), which interfaces with USDWeb. We performed floor-to-record USDWeb testing to verify the accuracy of 35 excessed inventory items held for sale. We found five discrepancies, including mislabeled vouchers and previously sold items still on the shelf. These items, including laptops and desktop computers, are not considered NAS inventory and therefore were outside of our scope.
21 FAA’s previous inventory management system, LIS, interfaced with USDWeb and allowed FAA to electronically track EOU inventory received at the Thomas Road Warehouse.
2025. The interface will feed data on NAS inventory received at the Thomas Road Warehouse into the USDWeb system and permit FAA staff to track each individual part. In the interim, FAA stated that it has improved the current workaround procedure to require individual EOU parts to be scanned into a records database using a barcode system, which will enable Thomas Road Warehouse staff to track parts from receipt to final disposition.

### FAA Does Not Always Recover Repairable Parts From the Field

FAA requires technicians in the field\(^{22}\) to return NAS inventory parts in need of repair (core due-ins)\(^{23}\) to the LSF warehouse no more than 30 calendar days after the Agency ships out a serviceable replacement part.\(^{24}\) According to FAA work instructions,\(^{25}\) staff can use a management report called the Advance Due-in Report to coordinate the return of repairable parts from the field, as well as determine how long a part has been at a site, how many parts are due from the field, and which sites have not yet returned their repairable parts. Agency officials also use the report to extend the due-in date under special circumstances, research potential processing errors, and contact technicians to retrieve outstanding parts.

However, FAA has not implemented an effective oversight process for monitoring and verifying the return of core due-ins from the field. We found that a significant number of customers do not return these parts within 30 calendar days, and many items remain unreturned for several years. Furthermore, FAA cannot determine with accuracy the exact quantity of core due-ins that remain with its customers. According to FAA officials, there are multiple reasons for this uncertainty. First, following the “problematic implementation” of LCSS, there were periods when system issues forced parts to be shipped to the field or received in the LSF warehouse outside the LCSS system. Second, FAA acknowledged that the Advance Due-in Report is unreliable and includes significant inaccuracies. For example, a customer may have returned repairable parts on a separate purchase order (PO) that was not “matched” to the correct PO upon receipt at the warehouse, leaving an open core due-in where one does not exist.

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\(^{22}\) Core due-ins currently exist for FAA, the Departments of Defense and Homeland Security, and a few international government entities.

\(^{23}\) A core due-in is a nonworking NAS inventory part that has the same manufacturer part number as the replacement item FAA sends out to the customer.


\(^{25}\) FAA Work Instruction (WI-IM-023), ADI/DI/DO Report, Center of Excellence for Inventory Management, revision 8, August 20, 2009. Reference Section J, Due-In Facility, Evaluation Criteria, p. 16.
According to FAA, as of September 1, 2020, more than 10,000 core due-ins, with an inventory value of over $38 million, had not been returned within the required 30 days. When parts are not returned in a timely manner, they are not available to fill future orders promptly. Moreover, when FAA transitioned from LIS to LCSS, it lost the ability to automatically charge its customers the full serviceable value for any parts that were not returned from the field. As table 3 shows, those unreturned items have an estimated “billable” value of almost $61 million.

Table 3. Number, Value and Potential Revenue for Unreturned Core Due-Ins from the Field, as of September 1, 2020

<table>
<thead>
<tr>
<th>Length of Time Overdue</th>
<th>Number of Unreturned Due-Ins</th>
<th>Inventory Value of Unreturned Due-Ins</th>
<th>Billable Value of Unreturned Due-Ins</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 30 days to less than a year</td>
<td>4,052</td>
<td>$14,900,465</td>
<td>$23,840,744</td>
</tr>
<tr>
<td>1 year to less than 2 years</td>
<td>2,035</td>
<td>7,942,256</td>
<td>12,707,610</td>
</tr>
<tr>
<td>2 years to less than 3 years</td>
<td>1,683</td>
<td>6,716,021</td>
<td>10,745,634</td>
</tr>
<tr>
<td>3 or more years</td>
<td>2,418</td>
<td>8,556,558</td>
<td>13,690,493</td>
</tr>
<tr>
<td>Totals</td>
<td>10,188</td>
<td>$38,115,300</td>
<td>$60,984,479</td>
</tr>
</tbody>
</table>

Source: OIG analysis based on FAA’s Advance Due-in Report

According to FAA, the Agency began a cleanup effort in late spring of 2020 and is currently working to isolate and address the data inaccuracies in the Advance Due-in Report. Once those issues are addressed, FAA plans to follow up with its customers about the status of the unreturned repairable parts. The Agency states that its planned completion date for this initiative is September 30, 2021. If FAA does not properly manage its core due-ins and charge full price for unreturned items, it will be unable to account for all of its E&R parts or recover the costs associated with those parts.


GAO standards\(^{26}\) direct agency management to implement internal controls and to use policies and procedures to document internal control responsibilities. Procedures may include schedules for performing control activities and following

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up with corrective actions when deficiencies in the controls are identified. In addition, management must communicate the policies and procedures so that personnel can implement the control activities for their assigned responsibilities.

According to Agency officials, difficulties associated with the conversion from LIS to LCSS prompted FAA to develop a manual process for calculating inventory part values, including end-of-the-month calculations. At the end of every month, an Access database programmer pulls inventory value and cost data for the previous 36-months from LCSS. The data include information specific to E&R repair orders and commercial vendors, as well as the master inventory file. A financial analyst reviews the data, recalculates the overall repair costs for E&R inventory within the database, and establishes a new standard repair cost for each part. The financial analyst then uses the new repair costs to recalculate the serviceable value for the E&R parts. An FAA program manager confirmed that the process is not sufficiently documented and that the Agency lacks a signed and approved document to implement this process.

The absence of a signed policy or work instruction documenting the process, could result in a lack of segregation of duties by limiting the number of FAA representatives who can consistently perform each step involved in the monthly cost calculations. Additionally, management may be unable to monitor staff and staff actions. As a result, E&R inventory values could be incomplete or inaccurate and lead to an overstatement or an understatement of the overall inventory value. Finally, in the event of staff turnover, FAA faces the risk that new staff will be unable to replicate the current process without documented, approved instructions.

In response to our finding, FAA agreed to prepare a policy statement informing staff about how to use the workaround process until it can configure LCSS to update inventory value costs on a monthly basis. FAA also agreed to prepare a formal, signed work instruction that identifies key roles, processes, and procedures for monthly E&R inventory value calculations.

**FAA’s Inventory Management Systems Have Part Quantity Discrepancies**

GAO standards require management to design controls over information technology (IT) to support the completeness, accuracy, and validity of

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27 Under the LIS inventory system, inventory part values were adjusted automatically, based on activity such as repair costs.
information processing and business process controls over interface and output of data.

We found that the two primary systems FAA uses to manage and report on the NAS inventory—LCSS and WMS—do not always record the same inventory quantities. An FAA official informed us that the quantity discrepancies are directly related to the transition from LIS to LCSS, and specific process issues tied to communicating part quantity information between the systems. To address this problem, FAA staff developed workarounds to help them track and monitor the difference in inventory quantities reported by both systems on a monthly basis. Yet FAA has made little effort to find a permanent fix for the issue. When we asked about reconciling the discrepancies based on the monthly reviews, FAA officials stated that corrections occur as part of normal business operations, particularly during the inventory counting process. For example, if LCSS shows that a customer-ordered part is in stock, staff pull up the relevant record in WMS, which identifies all the locations and quantities for that part.29 If WMS does not list a quantity and location for the part, an inventory manager decreases the quantity listed in LCSS. However, after 5 years, these discrepancies still exist. FAA officials told us that while they actively monitor the quantity discrepancies on a monthly basis, they do not reconcile them due to the time commitment reconciliation requires, the inability of the two systems to interface with each other, and the significance (materiality or overall impact) of the discrepancy value. Thus, the listed LCSS quantity that drives FAA’s financial reporting for E&R inventory could be lower or higher than the actual inventory quantity reported by WMS. As a result, at any given point in time, FAA may understate or overstate the overall NAS inventory value. For example, FAA understated the NAS inventory value by $661,000 on June 30, 2020, and reported an overstatement of $25,271 on August 31, 2020.

At the audit team’s request, FAA provided three separate discrepancy reports covering June 30, 2020, to August 31, 2020. We used FAA’s methodology to verify the accuracy of its discrepancy calculations and to perform our own discrepancy analysis, using LCSS and WMS data as of August 10, 2020 (see table 4). While some reported quantities varied from report to report, other quantity discrepancies remained consistent for several part numbers—across all four discrepancy reports that we reviewed. Moreover, during our onsite testing, we found that 4 of the 86 part numbers in our sample showed a discrepancy between LCSS and WMS, and we were able to link each part number back to the August 10, 2020, discrepancy analysis.

29 We found that WMS has a process for tracking E&R NAS inventory stored in the LSF warehouse. We statistically selected and performed existing testing on 86 part numbers, a total of 1,961 parts valued at $34 million. We located all the parts; only one part location was misidentified.
Table 4. Inventory Part and Value Discrepancies

<table>
<thead>
<tr>
<th>Analysis Conducted by</th>
<th>Discrepancy Report Date</th>
<th>Inventory Part Numbers With Discrepancies</th>
<th>Inventory Part Quantity Discrepancies Between LCSS &amp; WMS</th>
<th>Net LCSS Inventory Value Discrepancy</th>
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</thead>
<tbody>
<tr>
<td>FAA</td>
<td>June 30, 2020</td>
<td>2,865</td>
<td>23,447</td>
<td>($660,798)</td>
</tr>
<tr>
<td>FAA</td>
<td>July 31, 2020</td>
<td>2,930</td>
<td>26,111</td>
<td>$111,691</td>
</tr>
<tr>
<td>OIG</td>
<td>August 10, 2020</td>
<td>2,943</td>
<td>21,930</td>
<td>($1,085,651)</td>
</tr>
<tr>
<td>FAA</td>
<td>August 31, 2020</td>
<td>2,862</td>
<td>20,429</td>
<td>$25,271</td>
</tr>
</tbody>
</table>

Source: OIG analysis of FAA data

According to Agency officials, after the inventory system conversion, the discrepancy amount was very high (approximately $21 million), but it has now decreased to about $1 million per month. FAA plans to replace WMS between January 2022 and September 2025. In the interim, FAA has committed to assigning a team to reduce the discrepancies between the two systems.

Conclusion

Each day, FAA is responsible for thousands of flights and each year, the NAS services more than 16 million flights across the country. The Logistics Center plays a key role in the efficiency of the NAS and the effective operation of its systems. With more than 1 million parts in its inventory, valued at approximately $735 million, the Center must strive to achieve a sufficient level of oversight and accountability in its processes for inventory storage and servicing, shipping and tracking of parts, and accurately reporting the quantities and value of its NAS inventory. By focusing on accountability, the Center can ensure the timely provision of services and support for NAS systems and FAA’s modernization activities while maximizing the efficiency of its inventory related processes.
Recommendations

To improve FAA’s ability to manage and provide oversight for the National Airspace System (NAS) inventory, we recommend that the Federal Aviation Administrator:

1. Revise FAA’s process for identifying excess, obsolete, or unserviceable inventory to include consideration for the quantity of repairable parts on hand, and the expected future demand for those parts.

2. Develop and implement an interim process for receiving, sorting, and disposing of excess, obsolete, or unserviceable inventory items at the Thomas Road Warehouse that includes the tracking of individual inventory parts from receipt through to final disposition.

3. Implement an oversight process for core due-ins that includes continuous tracking as well as following up on any core due-ins that are not returned within 30 days.

4. Evaluate and revise the Advance Due-In Report to maximize its effectiveness in accurately tracking actual due-ins from the field.

5. Research, identify, and account for the due-ins identified in the Advance Due-in Report and request that parts be returned. If unreturned, bill NAS customers accordingly. Implementation of this recommendation could put over $38 million in funds to better use.


7. Develop and implement a plan to continuously track, reconcile, and reduce the inventory quantity discrepancies that currently exist between the Logistics Center Support System and the Warehouse Management System.

Agency Comments and OIG Response

We provided FAA with our draft report on May 13, 2021, and received its response on June 17, 2021, which is included as an appendix to this report. FAA concurred with recommendations 2, 6, and 7, and in response to our reported findings, provided support for their implementation. FAA requested closure within 30 days after OIG issues its final report. Accordingly, pending review of the documentation received, we consider these recommendations resolved, but open. FAA concurred with recommendations 1, 3, and 4 and provided
appropriate actions and completion dates. Therefore, we consider these recommendations resolved but open pending completion of the planned actions.

FAA partially concurred with recommendation 5—to research, identify, and account for the due-ins identified in the Advance Due-in Report and request that customers return parts or receive a bill for the cost of unreturned items. However, the Agency does not agree with our determination that implementation of this recommendation could put over $38 million in funds to better use. FAA stated that the $38 million represents the inventory value of the assets due-in, and funding beyond the already advanced repair price is unavailable for billing. This response suggests that Agency officials may not fully understand what our recommendation represents. The funds put to better use determination is an estimate of the dollars that could be used more efficiently if management implements our recommendation. When parts are not returned in a timely manner, they are not available to fill future orders. Moreover, as FAA acknowledges, the Agency was billing customers for unreturned core due-ins before the implementation of LCSS; we recommend that FAA return to that practice. Unfortunately, FAA does not plan to do so, citing development costs for software modification. Instead, FAA plans to research, identify, and account for the due-ins identified in the Advance Due-In Report and request that those parts be returned. However, FAA did not describe the course of action it would take if parts are never returned or the impact of unreturned parts on its financial statements—the intent of the recommendation. Therefore, we consider recommendation 5 to be open and unresolved and request that the Agency reconsider its position.

**Actions Required**

We consider recommendations 2, 6 and 7 resolved and open, pending OIG review of documentation received. We consider recommendations 1, 3 and 4 resolved but open pending completion of planned actions. We consider recommendation 5 open and unresolved. We request that the Agency reconsider its position on recommendation 5 and provide us with its revised response within 30 days of the date of this report in accordance with DOT Order 8000.1C.
We conducted this performance audit between February 2020 and May 2021 in accordance with generally accepted Government auditing standards as prescribed by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

To determine if FAA has effective oversight controls for managing the NAS inventory, including controls to appropriately account for excess, obsolete, or unserviceable items, we (1) interviewed Agency employees at the Logistics Center and FAA Headquarters on policy and procedures for managing NAS inventory, (2) assessed FAA’s process for controlling exchange and repair part inventory levels, (3) evaluated FAA’s approach to tracking excess, obsolete, or unserviceable inventory, (4) analyzed FAA’s process for managing repairable parts due to be returned from the field, (5) compared the inventory data listed in LCSS and WMS, and 6) reviewed FAA’s process for calculating inventory values.

To further address our objective, we tested a statistical sample of exchange and repair parts with no activity in the past 4 years. More specifically, FAA’s Lead Financial Analyst sent us a file with 2,694 exchange and repair records listing on-hand quantities as of June 30, 2020. This became our universe, which we stratified into 2 strata and selected a statistical sample as follows:

- **Stratum 1** was a census of two records with an on-hand value greater than $6 million.
- **Stratum 2** was a sample of 66 of 2,692 records with an on-hand value less than or equal to $6 million. We selected this sample with probability proportional to size with replacement where size was a record’s value on-hand.

Our total sample size was 68, but 2 records in Stratum 2 were selected twice due to our “with replacement” sampling methodology. This reduced our actual sample size from 68 to 66 or 2.4 percent of the 2,694 records in the universe. The value of this sample was $33,770,175.83 or 30.3 percent of the total universe value of $111,313,593.26.

During an August 2020 site visit to FAA’s Logistics Center in Oklahoma City, OK, FAA gave us a file with the Master Inventory with 97,883 records, as of August 10, 2020. We extracted 6,885 E&R records with a quantity greater than zero. From
this universe, we selected a simple random sample of 67 (1 percent) of the 6,885 records in the universe to test the reliability of FAA’s Master Inventory file. We performed existence testing on the first 20 of the 67 E&R part numbers in the sample. Thus, for testing purposes, if combined with the sample of 66 exchange and repair parts with no activity in the past 4 years, we performed existence testing on a total of 86 E&R parts. We located all 1,961 parts under review, with an inventory value of just over $34 million. We noted just one exception: an inventory part valued at approximately $958 had been moved out of the LSF to another location, and Agency staff did not update WMS to reflect this move. During the course of our audit, FAA corrected the error and updated the location in WMS.

While in Oklahoma City, we also visited the Thomas Road Warehouse to review FAA’s procedures for managing EOU inventory from receipt to final disposition. Initially, we received a file with 554 EOU inventory parts from FAA’s Lead Financial Analyst. This became our universe, which we stratified into 3 strata based on a part’s total cost and selected a statistical sample as follows:

- Stratum 1 was a census of all four inventory parts that had a total cost greater than $95,000.
- Stratum 2 was a sample of 61 of 517 parts with total cost greater than $0 and less than or equal to $95,000. The sample in this stratum was selected with probability proportional to size with replacement where size was a part’s total cost.
- Stratum 3 was a simple random sample of 4 of 33 parts with a total cost recorded as $0.

Our total sample size was 69, but three parts in Stratum 2 were selected twice due to our “with replacement” sampling methodology. This reduced our actual total sample size from 69 to 66 or 11.9 percent of the 554 parts in the universe. The sample had a total cost of $5,958,235.50 or 81.8 percent of the total universe value of $7,285,314.84. While onsite, we found out that several of the items in our sample had already been scrapped or picked up by FPI. In response, we formulated a judgmental sample for testing, and considered only the EOU inventory items that had been sent to the Thomas Road Warehouse between April 2020 and June 2020 but were not yet picked up by FPI.

To test the facilities and equipment (F&E) inventory, we received a file with 144 records from FAA’s Supervisory Systems Accountant. We stratified this universe into 2 strata based on amount and selected a statistical sample as follows:

- Stratum 1 was a census of all six records that had an amount greater than $190,000.
• Stratum 2 was a sample of 45 of 138 records with an amount less than or equal to $190,000. The sample in this stratum was selected with probability proportional to size with replacement where size was a record’s amount.

Our total sample size was 51, but 11 records in Stratum 2 were selected twice due to our “with replacement” sampling methodology, which reduced our actual total sample size from 51 to 40 or 27.8 percent of the 144 records in the universe. This sample was valued at $4,153,074.69 or 74.9 percent of the $5,541,540.39 in the universe. With the assistance of an FAA representative, we located all parts associated with 38 of the 40 records while we were onsite. We did not immediately locate parts associated with two records, but FAA representatives identified the part locations during a secondary review and provided photographic evidence in support.

Lastly, we used statistical sampling to determine if FAA still needed the E&R parts in its inventory. Using the FAA-provided Master Inventory file with 97,883 records, as of August 10, 2020, as our universe, we stratified it into 2 strata based on the aggregated unit cost. We then selected a statistical sample as follows:

• Stratum 1 was a sample of 66 of 6,746 records with an aggregated unit cost greater than $0. We selected this sample with probability proportional to size with replacement where size was aggregated unit cost.

• Stratum 2 was a simple random sample of 2 of 99 records with an aggregated unit cost equal to $0.

Our total sample size was 68 or 1 percent of the 6,845 records in the universe, valued at $81,008,059.80 or 15.2 percent of the $532,651,537.29 in the universe. We tested this sample by asking FAA to use its current standard operating procedures (SOP) for determining excess inventory to research each part number. To further determine if FAA still needed E&R parts in its inventory, we judgmentally selected 20 E&R part numbers with the oldest LSF numbers, found in FAA’s inventory as of August 10, 2020. We tested the date of last activity and also asked FAA to use its SOP to determine if parts were still required to support the Agency’s mission.

We computed sample size for all statistical samples to allow for projections with 90 percent confidence and a precision no greater than +/- 10 percent. We used this sampling methodology because it is widely accepted in the accounting world and because computations are transparent and easy to follow since they do not require specialized software. We accounted for all those sample items that were selected twice in our computations. However, based on our overall findings and results, we did not make projections.
To determine the number of repairable parts unreturned from the field, we used FAA’s Advance Due-in Report as of September 1, 2020, which we received from FAA’s Lead Financial Analyst. We filtered the file based on customer due-ins and removed due-ins associated with Customs and Border Protection (CBP), since the CBP property managed by the Logistics Center is not owned by FAA. We then totaled the current values for the due-in parts as follows: (a) more than 30 days to less than a year, (b) 1 year to less than 2 years, (c) 2 years to less than 3 years, and (d) more than 3 years. We applied the fiscal year 2021 cost recovery rate\(^\text{30}\) to determine an approximate overall billable value for the due-ins.

To assess the inventory part and value discrepancies between LCSS and WMS, we obtained LCSS to WMS discrepancy files from FAA’s Lead Financial Analyst dated June 30, 2020, July 31, 2020, August 10, 2020, and August 31, 2020. We reviewed FAA’s methodology for identifying and calculating the discrepancy amounts. We also confirmed that FAA’s reports identified 4 of the 86 part numbers with LCSS to WMS discrepancies we found during our onsite testing in August 2020.

\(^{30}\) FAA sets the cost recovery rate for E&R parts at the beginning of each fiscal year and generally does not adjust it throughout the fiscal year. FAA reported the cost recovery rate for fiscal year 2021 as 60.06 percent. The amount does not fluctuate significantly from year to year.
Exhibit B. Organizations Visited or Contacted

FAA Facilities

FAA Headquarters, Washington, D.C.
FAA Logistics Center, Oklahoma City, OK
Thomas Road Warehouse, Oklahoma City, OK
## Exhibit C. List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>ATO</td>
<td>Air Traffic Organization</td>
</tr>
<tr>
<td>DOT</td>
<td>Department of Transportation</td>
</tr>
<tr>
<td>EOU</td>
<td>Excess, Obsolete, or Unserviceable</td>
</tr>
<tr>
<td>E&amp;R</td>
<td>Exchange and Repair</td>
</tr>
<tr>
<td>FAA</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td>F&amp;E</td>
<td>Facilities and Equipment</td>
</tr>
<tr>
<td>FPI</td>
<td>Federal Prison Industries</td>
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<tr>
<td>GAO</td>
<td>Government Accountability Office</td>
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<td>GSA</td>
<td>General Services Administration</td>
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<td>HFR</td>
<td>Held for Repair</td>
</tr>
<tr>
<td>HFS</td>
<td>Held for Sale</td>
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<tr>
<td>LCSS</td>
<td>Logistics Center Support System</td>
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<tr>
<td>LIS</td>
<td>Logistics Inventory System</td>
</tr>
<tr>
<td>LSF</td>
<td>Logistics Support Facility</td>
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<td>MMAC</td>
<td>Mike Monroney Aeronautical Center</td>
</tr>
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<td>NAS</td>
<td>National Airspace System</td>
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<td>NextGen</td>
<td>Next Generation Air Transportation System</td>
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<td>OIG</td>
<td>Office of Inspector General</td>
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<td>PO</td>
<td>Purchase Order</td>
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<tr>
<td>RMWIP</td>
<td>Raw Materials and Work in Process</td>
</tr>
<tr>
<td>USDWeb</td>
<td>Utilization, Screening, and Disposition Web</td>
</tr>
<tr>
<td>WMS</td>
<td>Warehouse Management System</td>
</tr>
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</table>
Exhibit D. Overview of the NAS Inventory Managed by the Logistics Center

The parts managed by the Logistics Center support multiple interconnected systems that are integral to effective communications, radar, navigation, weather, and landing within the NAS. For example, a ground-based navigation system helps to improve the accuracy of an aircraft’s position when it is in the vicinity of an airport. An instrument landing system allows aircraft to approach a runway at night or in bad weather. Air traffic controllers use en route radar to monitor air traffic. To ensure the safety of the NAS and the traveling public, the parts associated with these systems must function at an optimal level and in a state of good repair. Such parts, as well as small dollar items used in day-to-day operations, comprise the NAS Inventory.

The Logistics Center operates FAA’s only centralized parts and equipment distribution center and also performs maintenance, repair, and overhaul of NAS equipment. The inventory is primarily categorized as held for sale, held for repair, or raw materials and work in process and is further broken down by accounting groups, condition codes, and valuation methods.

NAS Inventory Accounting Groups

- **Expendables and Direct Ship Parts:** Small-dollar inventory parts, required for day-to-day operations that are (1) consumed in use or (2) reparable but not managed as reparable parts. Direct ship parts are parts shipped directly from the vendor to the field.

- **E&R Commercial and In-House Parts:** Serviceable and broken but reparable parts that are returned to the Center for replacement and repair (see figure 2).

- **Benchstock Direct and Benchstock Indirect:** Expendable material used routinely to complete repairs.

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31 Held for repair inventory includes core due-ins from the field and repairable cores due from FAA shops.
32 Raw materials and work in process inventory includes parts currently under repair at FAA shops or at commercial vendors.
Condition Codes for NAS Inventory

- **Serviceable**: A part in a serviceable condition, ready for shipment to customer or reserved for a shop order.

- **Repairable**: A part in a non-serviceable condition, in need of repair.

- **Pre-Serviceable**: A serviceable part that needs to be tuned, calibrated, charged, etc., before being placed in service.

- **Failed Test**: A part that is tested and found to be broken, in a non-serviceable condition.

- **Survey Repairable and Survey Serviceable**: Parts identified as excess or survey to prevent them from being used on a shop order or sent to a commercial vendor for repair.
Excess, Obsolete and Unserviceable Inventory

EOU inventory comprises items determined to be beyond economical repair, unusable, or no longer required to support the NAS. EOU inventory parts are transferred to the Thomas Road Warehouse for disposal. For financial statement purposes, FAA expects this inventory to have no net realizable value and recognizes a loss for the carrying amount (or original item cost). The EOU carrying amount was $3.1 million in fiscal year 2020, $8.3 million in fiscal year 2019, and $6.9 million in fiscal year 2018.

Facilities and Equipment Inventory

The Center has custodial responsibility for non-NAS F&E inventory resulting from a 2006 OIG audit that cited issues with FAA’s oversight, reporting, and classification of inventory. In response, FAA transferred a significant amount of operating materials and supplies inventory to the Center. FAA’s program offices retain ownership and they—not the Center—drive demand for these items. The Agency’s Office of Finance and Management continues to track and monitor the level of available F&E inventory. According to an FAA systems accountant, F&E initially accounted for approximately $150 million of FAA’s reported inventory, but that amount has significantly decreased since 2006 and is now about $5.5 million.

## Exhibit E. Major Contributors to This Report

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DORY DILLARD-CHRISTIAN</td>
<td>PROGRAM DIRECTOR</td>
</tr>
<tr>
<td>BRIAN FRIST</td>
<td>PROJECT MANAGER</td>
</tr>
<tr>
<td>ZACHARY SCOTT</td>
<td>SENIOR AUDITOR</td>
</tr>
<tr>
<td>MICHELLE STARKEY</td>
<td>SENIOR AUDITOR</td>
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<tr>
<td>CHRISTINA BURGESS</td>
<td>SENIOR ANALYST</td>
</tr>
<tr>
<td>SETH KAUFMAN</td>
<td>DEPUTY CHIEF COUNSEL</td>
</tr>
<tr>
<td>GEORGE ZIPF</td>
<td>SUPERVISORY MATHEMATICAL STATISTICIAN</td>
</tr>
<tr>
<td>MAKESI ORMOND</td>
<td>STATISTICIAN</td>
</tr>
<tr>
<td>WILLIAM SAVAGE</td>
<td>INFORMATION TECHNOLOGY SPECIALIST</td>
</tr>
<tr>
<td>JANE LUSAKA</td>
<td>SENIOR WRITER-EDITOR</td>
</tr>
</tbody>
</table>
Appendix. Agency Comments

Federal Aviation Administration

Memorandum

Date: June 17, 2021
To: Louis C. King, Assistant Inspector General for Financial Audits
From: H. Clayton Foushee, Director, Office of Audit and Evaluation, AAE-1

The FAA Logistics Center transitioned in April 2016 from the Logistics Inventory System to the Logistics Center Support System (LCSS) to manage the National Airspace System (NAS) operational inventory. The inventory supports more than 77,000 aeronautical systems across the United States and for international customers. The Logistics Center has continued to provide critical supply chain management and parts delivery to the NAS.

The FAA provides the following comments on the OIG draft:

• The draft report states that the FAA lacks sufficient oversight controls for managing its NAS inventory. The FAA has numerous processes and controls in place to ensure accountability and valuation for NAS inventory, such as tiered oversight and segregation of duties in key inventory shipping, receipting, and repair. Documented standard operating procedures include daily/phased physical inventory counts, continuous financial reconciliations, routine operational and financial briefings to product divisions and management. The FAA implements these processes and manual workarounds across the Logistics Center to address various LCSS system gaps and to ensure controls are in place to manage the NAS inventory. In addition, the FAA financial statements have had no material weaknesses in terms of accountability and inventory valuation. FAA has addressed LCSS issues identified in prior audits.

• The draft report states that the FAA does not track inventory age and, as such, has continued to maintain excessive quantities of old and unserviceable parts. FAA tracks parts based on their serviceability because inventory age does not indicate whether a part is serviceable. The FAA maintains the inventory based on supportability requirements for fielded NAS systems. Since implementation
of LCSS in April 2016, the FAA has exceeded $50.5 million from the NAS inventory. The FAA has performed excess activity every year since the implementation of LCSS at approximately the same level as pre-LCSS activity.

- The draft report states that FAA’s overall NAS inventory value has increased by more than 13 percent since fiscal year 2017, and inventory held for repair has increased by almost 20 percent due to not establishing an interim process for determining where excess inventory levels are occurring. The OIG’s assumption on the dollar value of inventory growth since 2017 is misleading. Inventory growth has been primarily due to donated assets from facilities and equipment capital investment programs, decommissioned sites in the field, and inventory re-valuation based on purchases and repairs.

- Recommendation 5 in the draft report states that the Logistics Center should bill NAS customers accordingly for due-in repairable assets that are not returned to the Logistics Center, suggesting that implementation could put $38 million in funds to better use. The $38 million represents the inventory value of the assets that are currently due-in to the Logistics Center and not the repair prices. FAA customer advances were not taken on the full retail price of the assets – only the repair prices were advanced, as customers specified at the time of the order these would be repairs, not initial issues. Therefore, funding beyond repair price is unavailable for billing. In addition, external customers are billed full serviceable prices at the time of order and credited the core cost once the repairable is returned. For internal customers, FAA is focused on ensuring assets are returned to the inventory to support the NAS versus billing customers. The Logistics Center is currently working with its internal FAA customers to validate which assets may have been returned but were not properly documented. The Logistics Center will then work with the field to have assets returned, which will better support the NAS than billing field offices. Furthermore, because the functionality is not part of the software package, modifying the software to add the billing functionality would incur significant development costs and costs at each upgrade.

Upon review of the draft report, the FAA concurs with recommendations 1 – 4, and 6 – 7 as written. The FAA plans to implement recommendation 1 by September 30, 2024. The FAA implemented recommendations 2, 6, and 7, and on April 14, 2021, provided supporting documentation to OIG and requested closure within 30 days after OIG issues its final report. The FAA plans to implement recommendations 3 and 4 by September 30, 2021.

The FAA partially concurs with recommendation 5 to “research, identify, and account for the due-ins identified in the Advance Due-in Report and request that parts be returned. If unreturned, bill NAS customers accordingly. Implementation of this recommendation could put over $38 million in funds to better use.” As discussed above, FAA does not agree to bill NAS customers. As an alternative action, FAA will research, identify, and account for the due-ins identified in the Advance Due-In Report and request the parts be returned. FAA plans to complete these alternative actions to implement the recommendation by September 30, 2021. In addition, for the reasons stated above, FAA does not agree that implementation of this recommendation could put over $38 million to better use.
We appreciate this opportunity to offer additional perspective on the OIG draft report. Please contact H. Clayton Foushee at Clay.Foushee@faa.gov if you have any questions or require additional information about these comments.
Our Mission

OIG conducts audits and investigations on behalf of the American public to improve the performance and integrity of DOT’s programs to ensure a safe, efficient, and effective national transportation system.