Increasing Aviation Warfighter Lethality:

Creating Effective Accountability Programs for Cartridge-Actuated Devices and Propellant-Actuated Devices

A U.S. Army Soldier loads 30mm auto cannon ammunition on an AH-64E helicopter during the Combined Joint Fires Coordination Exercise at Kunsan Air Base, South Korea. U.S. Army photo by CPT Frank Spatt.

By CPT Sarah L. Lebold

Introduction

The accountability of cartridge-actuated devices (CADs) and propellant-actuated devices (PADs) presents a frustrating administrative challenge for Army Aviation units. The June 23, 2021, update to Department of the Army (DA) Pamphlet (PAM) 700-16, Ammunition Management, added section 12-2f, which formalized the requirement for property book accountability of CADs and PADs (DA PAM, 2021b, pp. 59-60). While intended to enhance accountability and control, this directive demands a highly manual and labor-intensive process. Adhering to this directive requires significant administrative effort and conflicts with aviation maintenance regulations.

U.S. Army Soldiers receive and process CLV materials at the In-transit Munitions Facility, Ali Al Salem Air Base, Kuwait. U.S. Army photo by SPC Elorina Charles.

Background

Cartridge-actuated devices and PADs are functional aircraft components essential for activating mechanical releases, fire extinguishing systems, and jettisoning canopies. They are categorized as Class V (CLV) items (ammunition) and require formal accountability per DA PAM 700-16 (DA, 2021b, pp. 59-60). Army Regulation (AR) 710-4, *Property Accountability*, requires these devices be identified on company property books by Department of Defense Identification Code (DODIC) and lot number (DA, 2023c, p. 52).

Cartridge-actuated device and PAD management is a highly regulated maintenance function. Operational loads are dictated by the quantity of aircraft and ordered by tail number. Typically, there are no spare devices unless requested and approved at echelons above brigade. A common practice for maintenance managers is to generate weekly reports and forecast monthly and annual requirements to the aviation support battalion for approval. Aircraft may not be fully mission capable if a device is not installed; thus, installation, accounting, and storage are critical due to restrictions on excess and ordering. Upon installation, maintainers generate maintenance records in the aircraft logbook cataloging DODIC, lot number, shelf life, and installation date. In summary, CADs and PADs are subject to stringent maintenance regulations that satisfy the intent of the prevailing property accountability regulation.

Problem-Set

The primary challenges to maintaining devices on the property book are the inability to visually identify devices once they are installed and record keeping. While maintenance personnel keep meticulous records of CADs and PADs during installation for technical and safety purposes, these records are distinct from the records required for property book transactions. Records mismanagement post-CADs/PADs installation (i.e., loss of a DA Form 581 [2021a], *Request for Issue and Turn in of Ammunition*) will result in the line company's inability to conduct timely property book transactions and trigger a division-level AR 15-6, *Procedures for Preliminary Inquiries, Administrative Investigations, and Boards of Officers*, (DA, 2025) due to the loss/gain/mismanagement of CLV items per AR 710-4 (DA, 2023c, p. 42).

Compounding these difficulties is the frequent personnel turnover among key

players preventing the development of consistent expertise and fostering a cycle of relearning. As a result, commanders and property book officers tend to prioritize CAD/PAD accountability only to the extent required by the current incentive structure, lacking the sustained understanding and dedicated resources to address the underlying complexities.

Steady-State Property Management

Effective CADs and PADs accountability requires a coordinated effort between the forward support company, flight company, aviation maintenance company, battalion and brigade S4 sections, and the brigade property book officer. When these elements are synchronized, accurate accountability can be achieved; however, the process remains resource intensive. The process relies on found on installation (FOI) and administrative adjustment report procedures. In turn, these procedures rely on providing evidence including DA 581s, photos, and maintenance records to demonstrate the issuance and turn-in of CADs and PADs that are already being accounted for within aviation maintenance and logistics lanes. These processes, while functional, were designed for more permanent property adjustments, and are demonstrably tedious and ill-suited for the frequent transactions inherent in CADs and PADs management. The reliance on these processes highlights the need for a simplified accountability system or policy adjustment that recognizes the unique challenges of tracking such technical aircraft components.

A 1st Combat Aviation Brigade, 1st Infantry Division Soldier, prepares ammunition for an AH-64D attack helicopter prior to aerial gunnery training at the Grafenwoehr Training Area, Germany. U.S. Army photo by Markus Rauchenberger.

Each unit accounts for CADs and PADs differently: no devices on the book, some on the book, or correct quantities with inaccurate lot numbers. The various versions of accountability, and the inability to verify DODIC and lot numbers on installed devices make the data on DA Form 3161 (2023b), *Request for Issue or Turn-In*, untrustworthy. Thus, comprehensive CADs and PADs records are required during aircraft lateral transfers. In the absence of comprehensive records, company commanders are still expected to sign for the devices. Even if the gaining commander refused to sign for the CADs and PADs, they would still have to insert FOI "placeholders" onto the property book to attempt to meet the standard.

LTC Stephen M. Neppl conducts a site visit at Pōhakuloa Training Area, Hawaii, to review ammunition accountability operations during Joint Pacific Multinational Readiness Center activities. U.S. Army photo by Aaron DeCapua.

A company commander's motivation in CADs and PADs accountability is largely dictated by the perceived cost of noncompliance. Property book transactions for these items are exceptionally tedious and time-consuming, requiring significant data correlation between paper and digital records. The AR 15-6 investigations triggered by discrepancies in CADs/PADs accountability are even more burdensome; they are resource-intensive, demand attention at multiple echelons, and are understandably avoided by commanders when possible. Additionally, in practice, these investigations rarely result in findings of negligence or misconduct—instead, they function as an additional layer of administrative processing to enable routine property book transactions. Given the substantial man-hours required for these investigations, even in garrison, the situation raises a critical question: If no one is ever held liable for mismanagement, and if the AR 15-6 process is widely un-

Army AH-64E Apache Guardian helicopter pilots fire a 30mm M230 cannon during Exercise Super Garuda Shield 25 in Baturaja, Indonesia. U.S. Army photo by SPC John Farmer.

derstood as a procedural formality, then what is the purpose of conducting these investigations at all?

As an S4, I led an effort to improve CAD/PAD accountability within our battalion. Collecting and reconciling more than 200 DA Form 581s from our forward support company with maintenance and property book data consumed 3 months, followed by 2 months of coordination with the brigade staff. Despite this investment of more than 150 man-hours per company, the resulting property book adjustments were immediately inaccurate and required further paperwork. The investigations ultimately took almost a year to resolve, by which time, aircraft had been transferred and devices replaced. This experience underscored that without a simplified process, this cycle of effort and limited results is destined to repeat and is likely occurring in formations across the Army right now.

Corrective Action

The purpose of CLV accountability, above all, is safety. However, CADs and PADs accountability verges on overkill, resulting in redundant data collection efforts and disproportionate administrative burden without enhancing safety or reducing risk. Army Aviation maintenance programs are not only bound by arms, ammunition, and explosives storage policy, but also by AR 750-1, *Army Materiel Maintenance Policy*, (DA, 2023a) to catalog the same administrative information that is required by DA PAM 700-16 (DA, 2021b).

Therefore, I propose an Army Aviation standard that CADs and PADs are accounted for on property books by DODIC quantities alone. This adjustment will maintain command accountability per AR 710-4 and would support continuing monthly sensitive item inventories but would eliminate the costly and often performative "paperwork race" and investigations triggered by discrepancies in lot number tracking (DA, 2023c).

The maintenance activity will continue to adhere to existing regulations, which inherently limit fraud, waste, and abuse, and requires tracking administrative data for all devices by tail number. By streamlining property book procedures and focusing on quantity accountability, we can drastically reduce wasted manpower at echelon, allowing tactical leaders to prioritize their core mission—preparing the next generation of Soldiers. Without a standardized approach, this cycle of inefficiency will persist, needlessly diverting resources from critical training and readiness activities.

Biography:

CPT Sarah Lebold is a graduate of Tulane University, holding a degree in Cell and Molecular Biology. She is an AH-64 pilot and previously served as an attack battalion S4 in garrison and combat operations.

References:

Department of the Army. (2021a, June 1). *Request for issue and turn-in of ammunition* (Department of the Army Form 581). https://armypubs.army.mil/ProductMaps/PubForm/Details.aspx?PUB_ID=1021676

Department of the Army (2021b, June 23). *Ammunition management* (Department of the Army Pamphlet 700-16). https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN31667-PAM_700-16-000-WEB-1.pdf

Department of the Army. (2023a, February 2). *Army materiel maintenance policy* (Army Regulation 750-1). https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN32929-AR_750-1-000-WEB-1.pdf

Department of the Army. (2023b, December 1). *Request for issue or turn-in* (Department of the Army Form 3161). https://armypubs.army.mil/ProductMaps/PubForm/Details_Printer.aspx?PUB_ID=1027892

Department of the Army (2023c, December 26). *Property accountability* (Army Regulation 710-4). https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN43327-AR_710-4-003-WEB-4.pdf

Department of the Army. (2025, June 22). *Procedures for preliminary inquiries, administrative investigations, and boards of officers* (Army Regulation 15-6). https://armypubs.army.mil/epubs/DR_pubs/DR_a/ARN43931-AR_15-6-000-WEB-1.pdf