



**Roll-up of Articles  
January 2022**

# General and Special Topics





# I Own This: December 2021 Nominees

/ Published Jan. 6, 2022

PS Magazine's *I Own This* campaign is designed to recognize Warfighters of all services who exemplify the highest standards of care for their assigned vehicles and equipment and contribute in meaningful ways to their unit's overall maintenance and supply posture. In short, they live and breathe readiness.

This month, we had one (1) Warfighter nominated for this program: Cpl Keaton G. Wilkett , USMC.

## SPOTLIGHT PROFILE



**Cpl Keaton G. Wilkett**  
US Marine Corps/Active

Small Arms Repairer/Technician  
Weapons and Field Training Battalion, MCRD San Diego  
MCB Camp Pendleton, CA  
**Nominated by:** Chief Warrant Officer 2 Shawn Daley

**How did you come to know/observe the nominee's actions?** As the Maintenance Management Officer for Weapons and Field Training Battalion, I oversee all maintenance-related tasks and functions. I have observed Cpl Wilkett's initiative on countless occasions, improving equipment readiness.

**Why does this individual deserve recognition?** Cpl Wilkett is a skilled small arms repairman and rifleman. He has repeatedly performed repairs on the M4 and then verified each weapon's accuracy on the new Infantry marksmanship assessment course of fire. This activity builds competence and confidence for his MOS proficiency and basic soldiering skills. Cpl Wilkett's on-the-spot actions kept all weapons ready for action during the first iteration of this assessment.

**Additional Comments:** Weapons and Field Training Battalion coordinates combat marksmanship training, Marine Corps common skills training, administrative and logistic support to recruit training companies, safety and operational risk management, and command and internal security for Edson Range, Camp Pendleton.

**To learn more about nominating a Warfighter for this recognition, read the article [HERE](#).**



# PS Magazine: 2021 Web Metrics Year-In-Review

/ Published Jan. 14, 2022



*PS Magazine: Informing Army Readiness*

**Note:** text spot-colored in blue is hyperlinked.

In 2019, *PS: The Preventive Maintenance Monthly* switched from a physical, monthly digest-style magazine to a web-based platform (with an accompanying monthly index of online articles—TB 43-PS-series). Between then and now, our online audience has grown steadily.

In calendar year 2021, *PS Magazine* had 313,465 visitors, accounting for 1,132,583 page views on the website. We received most of our traffic from North America, which accounted for 252,876 visits and 876,048 page views. A large portion of the North American traffic, 67,500 visits and 332,000 page views, was routed through Fort Huachuca's Network Enterprise Technology Command (NETCOM/9th Signal). While this key performance indicator (KPI) makes it difficult to tell which individual areas engage our site the most, it does confirm that most of our web traffic comes from military installations.

The most popular downloads since January were the [2019 PS Index](#) with over 5,333 downloads, the “[Condition Code Tag](#)” infographic with over 3,479 downloads and the “[Tips for Towing HMMWVs](#)” Sergeant’s Time Training article with 2,141 downloads. Several other items offered on the website were downloaded over 1,000 times each.

Desktop computers were used to access the website more than any other type of device with 192,000 visits and 836,000 views accounting for 68.31 percent of our incoming traffic. Smartphones accounted for 32.98 percent of incoming traffic over the same period with 103,000 visits and 237,000 page views.

In 2021, we’ve observed bounce rates as high as 97 percent. This high percentage of bounces only appears to be associated with individual articles and not other areas of the website such as the news section or individual commodity sections where the bounce rate falls into the teens. Bounce rates indicate when a visitor only visits one page, then leaves the website. It’s normally an indication they’ve directly accessed the information they need, consumed it and then departed.

The website from which *PS* received the most referrals is our own website URL accounting for 111,000 visits and 191,000 page views. This is due to the fact we often embed links that refer readers from one article or section to another.

Google was the top search engine for referrals this year with 112,000 visits and 142,000 page views. It’s worth noting that the search term “ps magazine” returns our website as the “top hit” without any paid advertising and that the entire first page of that search is either our website or information about the magazine from third parties.

Judging from the web metrics collected since January 1, 2021, the majority of our end users appear to access the website using desktops to look for specific articles, which may have been spotlighted in one of our newsletters. They then share that link with several other maintainers and logisticians who, in turn, directly access the referred article. Once they have the information they need, they leave the website to put the information they’ve gathered to work.

If your experience with our website doesn’t align with this assessment or you have ideas for enhancing your experience with our website, please email us at:

[usarmy.redstone.asc.mbx.psmag@army.mil](mailto:usarmy.redstone.asc.mbx.psmag@army.mil)



# Missiles: 2021 Year-in-Review

/ Published Jan. 18, 2022



Photo by [Sgt. Christopher Hernandez](#)

**Note:** text spot-colored in blue is hyperlinked.

In 2021, the US Army Aviation and Missile Command (AMCOM) introduced its [new corrosion website](#). The Patriot missile team set corrosion [training dates for both FY21 and FY22](#).

CW3 Robert T. Brower provided Patriot missile teams with tips on how to prevent hydraulic fluid contamination and how to properly store hydraulic fluid. You can read [Patriot: Contaminated Hydraulic Fluid Can Cause Faults](#) and get all his helpful advice.

While performing PMCS on the ITAS, operators were reminded to look for cracks in the tube. The article, [ITAS: Repair or Replace Damaged Tube?](#), told the operators what to do when they find cracks. It also told the mechanics what kit to use to repair a cracked tube.

[A Clean Javelin is a Happy Javelin!](#) reminded operators to clean the system before they store it. It also reminded them to remove the CLU batteries before shipping or turning the CLU in for repair.

HIMARS crews received information on the [frame rail check](#). Checking the leaf springs around the U-bolts and mounting brackets was specifically stressed.

[MLRS: Don't Let the Cold Weather Stop You in Your Tracks](#) showed the most likely location of snow and ice buildup and how to remove it. And [PMCS tips that multiply system performance](#) reminded crews on ways to get the most out of their system when it counts the most.

In terms of most-viewed, missile-related articles for 2021, these three had the most traffic:

- [FMTV/HIMARS: Driveshaft U-Joint Kit](#) – **Visits:** 372 **Views:** 393
- [M41A7 TOW ITAS: Make Sure You're Doing Monthly and Annual PM](#) – **Visits:** 317 **Views:** 336
- [Corrosion: AMCOM Has New Corrosion Website](#) – **Visits:** 310 **Views:** 361



# Aviation: 2021 Year-in-Review

/ Published Jan. 18, 2022



Photo by [Sgt. Sarah Sangster](#)

**Note:** text spot-colored in blue is hyperlinked.

In this inaugural year-in-review article, let's take a look back at some of the topics and themes that stood out in 2021 with an eye towards refreshing your maintenance skills and keeping your aircraft mission-ready.

Here's a sneak peek at some of the themes that stood out over the past year so you can add them to your maintenance priorities:

- Parts turn in
- Corrosion prevention
- Weather awareness
- Soldier tools and maintenance ideas
- Most read and downloaded aviation article

## Parts Turn in

In 2021, *PS Magazine* published several articles about the ongoing need for aviation units to turn in excess or unserviceable parts so they can be repaired or refurbished, if needed, and placed back into the supply system. These articles stressed not stockpiling parts because it leads to shortages in the supply system and may keep aircraft in a non-mission capable (NMC) status because of a lack of parts. The best practice is to always turn in excess or unserviceable parts so they can ultimately be placed back into the supply system. Take a look back at these articles:

[UH-60: Don't Stockpile Parts; Turn 'Em In](#)

[Apache: CCAD Needs Unserviceable Carrier Drive Assemblies](#)

[UH-60: Turn in These Unserviceable Parts](#)

[UH-60/AH-64/CH-47: Turn in Unserviceable ARC-231 Parts for Repair](#)

[Apache: Turn in Unserviceable Parts For Repair](#)

[Black Hawk: Turn In Unserviceable Gearbox and Control Indicator](#)

## Aircraft Weather Protection

Every year during the summer and winter months, maintainers must pay attention to how they protect themselves and their aircraft. Being aware of what extreme cold and heat can do helps you prepare for the mission. Take a look back and refresh yourself on cold and hot weather prevention articles. (The first and second article links are rollups of hot and cold weather stories for all equipment):

[Be Prepared for Hot Weather: A List of Must-Read PS Articles](#)

[Cold Weather: Some Must-Read PS Articles to Prepare, Plan & Train](#)

[All Aircraft: Cold Weather Prep, Icing and Winter Hazards](#)

[RQ-7B Shadow: Heed These Cold-Weather Precautions](#)

[All Aircraft: Preparing for Summer Weather](#)

## Corrosion Prevention

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Aircraft are powerful machines, but they're no match against corrosion. No matter what tasks you have, always be on the lookout for corrosion, especially in places you think don't matter. Don't let *out of sight, out mind* catch you off guard because what you can't or don't see can damage your aircraft. Something as simple as using covers can help protect against and prevent unwanted corrosion.

Take a look at these 2021 articles on corrosion:

[Lakota: Having Flight Control Rod Issues?](#)

[CH-47: Need Chinook Covers?](#)

[UH-60: Get Covers for Your Aircraft](#)

[Corrosion: AMCOM Has New Corrosion Website](#)

[Aircraft: Proper Shipping Fights Corrosion and Saves Money.](#)

### **Soldier Tools and Maintenance Ideas**

Sometimes when Soldiers and maintainers come with unique ideas to make maintenance simpler, better or faster, they send their ideas on tool and maintenance tips to *PS Magazine* for publication. These two articles will give you a leg up on maintenance:

[CH-47: Step Up with Aft Pylon Step](#)

[H-60 Series: Protect Tail Rotor Inboard Retention Plate](#)

### **Hot Item**

Sometimes a maintenance issue arises and we have to get info out quickly to our readers. This past year, an important issue arose about the APX-123/APX-123A Mode 5 transponder. Take a look at the article for a recap:

[HOT ITEM - Rotary-Wing Aircraft: Configure Mode S / ADS-B Out Properly.](#)

### **Most Read and Downloaded Aviation Article**

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For years, Soldiers have needed information on how to handle condition code tags and *PS Magazine* has periodically reminded readers of the various types, their purpose and how to get them. We were able to provide readers with a downloadable infographic that provides all this information in a single place. In fact, the [Condition Code Tags infographic](#) was the most downloaded aviation item on the website, with 3479 downloads for 2021.

For more information on this topic, visit [Aviation: Need Condition Code Tags?](#)



# Commo/Electronics and Soldier Support: 2021 Year-in-Review

/ Published Jan. 20, 2022

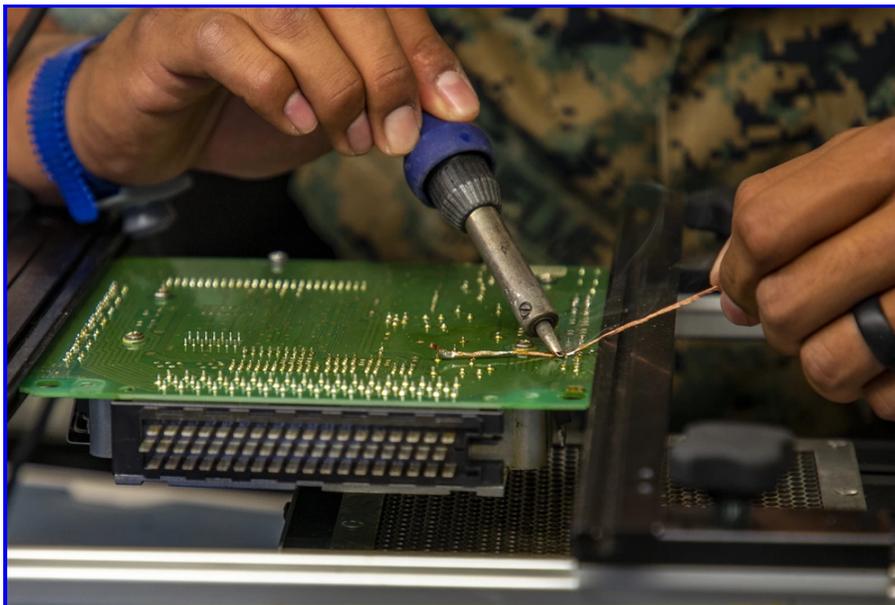


Photo by [Cpl. Christian Garcia](#)

If there's one thing 2021 taught us, it's to expect the unexpected. Some things stay the same, though...like the need for preventive maintenance, and solving perplexing problems, especially when it comes to comms and electronics.

## Commo/Electronics

As part of the 2021 year-in-review, we analyzed the most viewed communications/electronics articles since our website launched. Here are the top three (click on each title):

1. [CSS VSAT AN/TSC-183A: New TM Powers Up](#)
2. [AN/PYQ-10 SKL: Software Updated](#)
3. [AN/PYQ-10\(C\): SKL Software and Support](#)

Other communications/electronics topics we covered during the year include:

## **Generators**

With dozens of models, generator FAQs are some of the most frequent we receive:

- [MEP-531A TQG: AC versus DC Voltmeter](#)
- [Generators: Hunting for Terminal Clips](#)
- [MEP-831A 3kW TQG: NSN Confusion Leads to Faulty Orders](#)

## **Communications Devices**

- [AN/TSC-156D: Protect Phoenix Antenna Assemblies](#)

## **Computers and Software**

- [Communications: Have You Downloaded the RSAM Update Yet?](#)

## **Soldier Support**

Whether it's something to read or something to wear, Soldier Support covers a wide range of subjects.

The top three most requested articles since our website launched were:

1. [Army Combat Fitness Test Equipment NSNs](#)
2. [UTAP: You're Just a Click Away!](#)
3. [Cloth Face Masks Now Available](#)

Other topics that captured readers' interest included:

## **Publications**

- [Two Fuel System Supply Point TMs](#)

## **Training**

- [LandWarNet Offers Many Options](#)

## **Uniforms**

- [Clothing: Instructions for Wearing the AGSU](#)



# Tactical Vehicles: 2021 Year-in-Review

/ Published Jan. 21, 2022



Photo by [2nd Lt. Sydney Murkins](#)

**Note:** text spot-colored in blue is hyperlinked.

Maintenance leaders,

NSNs were the most frequent topics covered in 2021 for tactical vehicles and trailers. Corrosion prevention and the roll-out of Non-Combat Operations Maintenance Plan (NCOMP) were also hot topics this past year, as were articles that dealt with safety and accident prevention.

If you missed some of the articles, no worries! Here's a rundown of the various articles in each of these topic areas. Just select/click on the title to read it:

## Corrosion Articles

[Corrosion: Protect Hoses from Getting Hosed by the Sun](#)

[Corrosion: Use Cavity Wax to Stop It Dead in its Tracks](#)

[Corrosion: Cleaning Is Key to Prevention](#)

[Corrosion: TACOM Corrosion Website Has Helpful Info](#)

[Corrosion: New TM 43-0139 Is Hot off the Press](#)

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## **Non-Combat Operations Maintenance Plan (NCOMP) Articles**

[M1082, M1095 Trailers: NCOMP Is the New Plan](#)

[HEMTT, PLS: The New Plan Is NCOMP](#)

[HMMWV: Non-Combat Operations Maintenance Plan](#)

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## **NSN Articles**

[Up-Armored HMMWV: NSN for Flap Assembly](#)

[M915A5 Tractor Truck: New NSNs for Channel Lifts](#)

[JLTV: Front-Rear Differential NSN Updates](#)

[M967/M969 Fuel Tankers: Correct NSN for Rear Axle Assembly](#)

[M915A5 Tractor Truck: Get Right NSN for Fuel Line](#)

[M915A5 Tractor Truck: Right NSN for Taillight](#)

[M200A1 Trailer: NSN for Axle Assembly with ABS](#)

[M967A2, M969A3 Fuel Tankers: Where's the Gasket NSN?](#)

[Fuel Tankers: Correct NSN for Engine Junction Box Switch](#)

[M149A2 Trailer: Brake Hose Assembly NSN](#)

[M997A3 HMMWV: Fan Speed Knob NSN](#)

[M1062 Fuel Tanker: Correct Globe Valve NSN](#)

[HMMWV: NSN for ABS Brake Fluid](#)

[M969A3 Fuel Tanker: Order Correct Differential Gage with CAGE and PN](#)

[M1112 Water Trailer: Tire and Wheel Assembly NSN Updates](#)

[Maintenance Mgmt: NSNs for Motor Pool Safety Items](#)

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### **Safety-Related Articles**

[M149 Water Trailer: Don't Learn Safety by Accident!](#)

[HMMWV: Driver Training and Safety](#)

[Maintenance Mgmt: Ground Guiding Is Serious Business](#)

[HMMWV: AFES System TM Updates](#)

[M1101, M1102 Trailer: Better Test the Handbrakes](#)

[JLTV: Avoid High-Pressure Water Damage](#)



# Leader Interview: BG Hilmes, USACRC

/ Published Jan. 24, 2022



BG Hilmes (center) participates in a roadside safety inspection with two 4th Infantry Division soldiers during a recent visit to Fort Carson, Colorado.

**MSG Half-Mast** started the new year with a virtual visit to Fort Rucker, AL, where he spoke with the US Army Combat Readiness Center (USACRC) commanding general, BG Andrew C. Hilmes, about the USACRC's mission and the intersection of safety and readiness. BG Hilmes also serves as the Director of Army Safety.

**BG Hilmes** assumed his current duties on August 22, 2019. To read his official biography, click [HERE](#).

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**MSG Half-Mast:** Your organization is officially titled the U.S. Army Combat Readiness Center. Yet the web address is safety.army.mil. Clearly, there's a nexus between safety and readiness. Would you explain that connection and how the USACRC

preserves and enhances readiness?

**BG Hilmes:** Safety is really about standards – training to standard and then executing a mission or task to standard. In other words, safety is more of a byproduct that happens when leaders and units execute their assigned tasks to standard – or by the book.

The word safety can elicit negative perceptions for some in the profession of arms, so I prefer to use the term risk management – identify the hazards, assess the hazards, develop control measures and make risk decisions, implement controls, and supervise and evaluate. Operationalizing risk management is something all Army leaders must be proficient at and I would offer that our professional military education courses give all leaders the basic tools to do this.

The troop leading procedures (TLPs) are a dynamic process used by small-unit leaders to analyze a mission, develop a plan and prepare for an operation. Leaders actually implement the steps of risk management when they execute TLPs. The same things that allow us to succeed in combat, conduct a pre-combat inspection (PCI) of our equipment or analyze the conditions we will be operating in, also apply to risk management. This is why safety, or risk management, and readiness are inherently linked.

**MSG Half-Mast:** You investigate mishaps and analyze data in order to see and warn against troubling trends. What are some current safety “trouble spots” of which Soldiers should be aware? Related to this, what are some basic best practices that Soldiers should employ to stay safe, particularly when maintaining their vehicles and equipment?

**BG Hilmes:** Driving or riding in a motor vehicle, whether on or off duty, is the most dangerous thing a Soldier can do. Therefore, driver training is critically important.

Last year, we lost three Soldiers to on-duty government motor vehicle mishaps and 73 to off-duty private motor vehicle mishaps, with a vast majority being preventable. Today, nearly 20% of the Soldiers entering the Army do so without a civilian driver’s license, a figure that has steadily increased over the past 20 years. The Remedial Driver Training (RDT) program is a tool commanders can use to help their Soldiers change their behavior and decision-making processes behind the wheel. It is available at every active Army installation through the garrison safety office and it is free.

A motor vehicle-related issue we continue to see is the lack of seat belt or vehicle

restraint system use. Simply put, this is a standards and discipline issue. We haven't lost a Soldier wearing a seat belt or restraint in a tactical vehicle mishap since March 2018. We recently had a Stryker vehicle, at full capacity, inadvertently drive off the side of a road, rollover, and none of the nine Soldiers were injured, all because they were properly restrained. Almost all of the fatal vehicle mishaps we investigate would have been non-fatal if the Soldiers involved had simply worn their restraints.

Interestingly, the majority of fatal vehicle mishaps are administrative movements of less than four vehicles on a road way or improved trail. They are typically low-risk operations...but we're allowing unnecessary risk to creep in and the result is failure. A single-vehicle movement to a range or a tactical vehicle convoy during deployment or at a training center requires leadership oversight and risk management like any other mission. Leaders who apply the TLPs to **all** missions, regardless of complexity, will inherently be successful.

**MSG Half-Mast:** The USACRC dedicates quite a bit of attention to off-duty safety. Explain how off-duty safety is important and the ways it impacts the overall readiness of the force.

**BG Hilmes:** Off-duty mishaps remain the No. 1 accidental cause of death of our Soldiers. Off-duty Soldier fatalities generally account for 75% of all Soldier fatalities, typically by a 3:1 ratio when compared to on-duty losses.

In FY21 we lost 86 Soldiers to off-duty mishaps, most in the form of private motor vehicle accidents, a nearly 15% increase from FY20. It's the greatest challenge we face because Soldiers are typically away from their first-line leaders when the mishap occurs.

Some of us are more prone to risky behavior than others. First-line leaders are best postured to mitigate this risk through their leadership skills and the influence they have on their subordinates. They also know who on their team is most susceptible to risk behavior.

It only takes a small amount of time to have a discussion about off-duty activities, what hazards may be encountered, and how to handle them. Engaged first-line leaders who know their Soldiers and help them visualize the challenges they will face during their down time are the "secret sauce" to reducing this unfortunate and unnecessary drain on readiness.

**MSG Half-Mast:** The culture within a unit, whether it applies to vehicle or aircraft

maintenance, administration or tactical operations, is typically established by the unit commander. In other words, units will do those things that commanders think are important. How do units assess their safety culture?

**BG Hilmes:** The Army Readiness Assessment Program (ARAP) is a proven tool for units, tactical and non-tactical, to gauge their safety climates. Since ARAP's inception more than 16 years ago, and having processed more than 3 million surveys, we know units that score in the bottom 25% of ARAP are twice as likely to have a Class A mishap (fatality or more than \$2.5 million in property or equipment damage) than those units that score in the top 25%.

That's incredible insight. It's actually the closest thing battalion and brigade commanders have to a crystal ball for gaining insights into their safety culture and respective programs.

Battalion-level units are required to complete the survey during the first ninety days following a change of command, typically every two years. ARAP allows commands to use the tool to compile the perceptions of the organizational climate by sampling from six focus areas: common core, organizational processes, organizational climate, resources, supervision and safety programs. Unfiltered feedback presents both quantitative and qualitative data to units.

So, while the unit score tells you how likely your unit is to have a major mishap at the time of the survey, what is more important is what you do with the results. Similar to a command climate survey, command teams can use ARAP to make their unit better.

**MSG Half-Mast:** *PS Magazine's* primary focus is on helping Soldiers (as well as sister-service Warfighters) maintain their vehicles and equipment so they're combat ready at all times. What resources does the USACRC offer that will help Soldiers accomplish their various mission tasks in the safest way possible?

**BG Hilmes:** One of the most valuable tools we have is the *Lessons Learned* portal on our public website. Each printable summary provides a synopsis of a mishap, key facts and actionable recommendations to mitigate similar events from occurring in the future. The portal currently contains more than 60 ground and aviation mishap summaries that are available to leaders and units to learn from.

Another online tool we have is our exportable loss prevention briefings. These briefings are developed by USACRC subject-matter experts and serve as great tools for any leader. They are best suited for small- to medium-sized audiences

where facilitators and audience members are able to discuss key topics and ultimately answer the question, “Is this happening in my unit?” The USACRC website also contains ground, aviation, off-duty, distracted driving and privately-owned weapons briefings, which are really a basis for having frank and open discussion about the best way to mitigate risk across the formation.

Preliminary loss reports (PLRs) are short synopses of recent Army mishaps resulting in fatalities. They alert commanders, leaders and safety professionals to circumstances affecting readiness, along with some tips on how to best manage those circumstances safely. PLRs are ideal for first-line leaders to use when they are conducting risk management training or even providing a safety brief.

We also have a web page dedicated to driver training called the Driver’s Training Toolbox to assist commanders, examiners and instructors in the management of driver training. The toolbox provides a central location for the materials necessary to establish and maintain an effective driver training program. These materials are all “best practices” from other units and designed to be copied and implemented in other units to save leaders time and allow one unit’s success to benefit others.

Nobody should feel alone or unsupported when seeking to conduct safety and risk management training, or when looking for loss prevention tools...the USACRC is their back-side support. We have forty years of time-tested and proven material on our website ready for their use.

**Note:** To view the USACRC, website, click [HERE](#).



# Small Arms: 2021 Year-in-Review

/ Published Jan. 25, 2022



Photo by [Sgt. Steven Lewis](#)

**Note:** text spot-colored in blue is hyperlinked.

In 2021's article, [Ammunition: Report Malfunctions!](#), Soldiers learned about ammo malfunctions and what Army regulations they need to become familiar with. The [experts at DA explain the ammunition authorization process](#). It's important to properly manage ammunition as [Ammunition: Don't Waste it!](#) explains, and not indiscriminately fire rounds. And finally, Soldiers learned how both [hot](#) and [cold](#) weather affects ammo.

M16-series rifle and M4/M4A1 carbine operators were reminded how to properly perform [C-SPORTS](#). The article [Dry Up Dry Firing](#) explained proper clearing procedures and told you who can dry fire the rifle. Check out the [advice for Ft Leonard Wood](#) and learn how to maintain your M16/M4 weapon. Also, make sure to [check for loose barrels and mounting rails](#). Finally, [the firing pin is not for cleaning](#). A bad firing pin means the rifle won't fire reliably.

Some Soldiers were having problems with the M17 pistol. [M17 Pistol: Takedown Lever Getting Stuck During Disassembly](#) not only explained the procedures but included a short video on how to fix the problem. Some M17/M18 pistols come in for maintenance with the loaded chamber indicator (LCI) not completely flush and the rear sight loose. To avoid these problems, read these [new rear sight installation instructions](#), and then keep them handy until the -10 TM is updated. Use only a small amount of CLP when lubricating your pistol and avoid other problems by reading [this](#) article.

The M249 machine gun article, [Dimple Usually Not a Problem](#), explained that barrels with a dimple are considered good to go as long as there are no extraction problems. [Check the piston pin](#) if you have an M249 that functions manually but will not fire. After cleaning your M249, check the [gas port hole](#) and make sure there are no obstructions. If your M249 collapsible buttstock is coming loose, [learn how to tighten it](#).

Make sure to readjust the M2A1 machine gun timing during scheduled maintenance. Get the whole story [HERE](#).

Make sure to lace the MK19 machine gun bolt correctly to reduce as much movement as possible. Make sure to follow TACOM's [recommended lacing guidance](#). When the MK19 machine gun is disassembled, after removing the sear plate assembly, make sure to [always lock the sear in place](#).

[Watch your fingers](#) when firing the M320 grenade launcher. It has a very short barrel and your fingers can be injured when the round explodes out of the barrel.

If you need M3E1 recoilless rifle training information, get it [HERE](#).

The M500 shotgun isn't deadlined if the receiver is missing screws. There are [options to fill the holes](#).

The M9 pistol TM updates have been paused due to the M17/M18 pistol fielding. Get what you need to know [HERE](#). The [M9 Pistol: No Cracks Please!](#) article tells you how to catch cracks early.

If you have an M240 and need an ammo can for the UH-60M, get the NSN [HERE](#).

The article, [Small Arms: How to Treat Your Weapon When It's Hot](#), has some tips on taking care of your weapon in the three (3) types of hot weather.

Finally, always store only clean weapons in the arms room. Doing so will prevent corrosion and protect the weapons stored there.



# Combat Vehicles: 2021 Year-in-Review

/ Published Jan. 25, 2022



Photo by [Charles Rosemond](#)

**Note:** text spot-colored in blue is hyperlinked.

Another year, another 525,600 minutes of preventive maintenance. Although it's hard to pinpoint a definitive trend when it comes to maintenance issues among combat vehicle fleets in 2021, one clear trend was the need to improve combat readiness through improved preventive maintenance.

This trend was particularly true with the Strykers fleet, which has had recent issues with batteries and vehicle fires. *PS Magazine* published a series of Stryker-related articles in 2021 focused on getting back to the basics of preventive maintenance. Here's a list of them:

[Stryker: Height Management System PM](#)

[Stryker: Maintain RWS to Get Most Bang for the Buck](#)

[Strykers: Maintaining the Mortar Carrier Vehicle's RMS6-L](#)

[Stryker: Only You Can Prevent Fires!](#)

[Stryker: Prevent Component "Snorkeling"](#)

[Strykers: Prevent N2 Gauge Damage with Simple Fix](#)

[Stryker: Charging System Diagnostics and Troubleshooting](#)

The Stryker articles about preventing fires and charging system diagnostics and troubleshooting were two of the most read articles in the combat vehicles category on our website in 2021.

The M1A2 SEPv3 tank is being fielded to units now. As with any new system, there are immediate lessons that need to be learned to keep the vehicle in tip-top shape. Below are a couple articles *PS* published the past year:

[M1A2 SEPv3 Tank: Keep Engine Timer Powered Up](#)

[M1A2 SEPv2/v3 Tank: EMU Key to Keeping Engine Running](#)

In 2022, *PS Magazine* will publish the latest maintenance info on the new variant when it becomes available.

Older vehicles like the M113A3 FOV and M60/M48-Series AVLB require a lot of attention to keep them operating. *PS* had them covered, as well:

[M113A3-Series FOV: Inspect Transmitter Temperature Sensor](#)

[M60/M48-Series AVLB: Inspect Transmitter Temperature Sensor](#)

Safety is always a top issue, which is why *PS Magazine* devotes a lot of effort to keeping Soldiers informed about ways to prevent injuries and damage to equipment. The automatic fire extinguishing system (AFES) found in many vehicles is a frequent topic in *PS* and 2021 was no exception:

[Combat Vehicles: Always Heed These AFES Safety Tips](#)

Turning in line replaceable units (LRUs) is also a frequent hot topic. *PS* brought you the latest info to help units avoid turning in LRUs that are actually serviceable, thus

helping to save money:

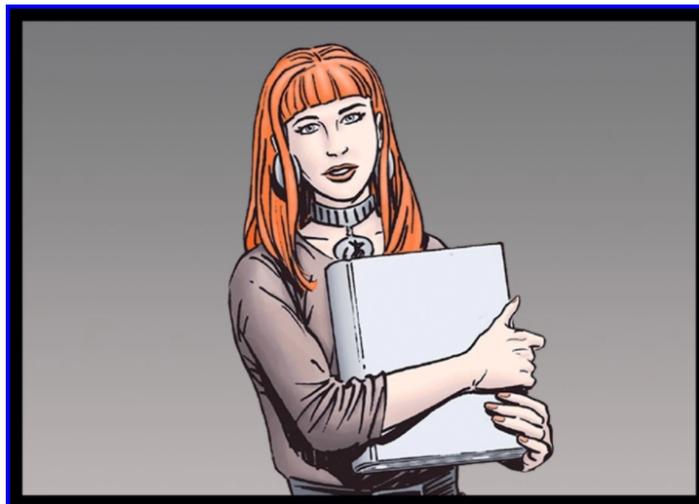
[Combat Vehicles: LRU Troubleshooting and NGATS/DSESTS](#)

Whatever the maintenance issue is, you can count on *PS Magazine* to bring you the latest and most accurate info available in 2022 and beyond!



# Logistics & Maintenance Management: 2021 Year-In-Review

/ Published Jan. 26, 2022



**PS Magazine's Cloe**

**Note:** text spot-colored in blue is hyperlinked.

From January 1, 2021, through December 31, 2021, the Logistics/Maintenance Management section of the *PS Magazine* website welcomed 6,667 visitors who viewed 9,385 articles. As a part of the *PS Magazine* year-in-review, we took a look back at the most popular articles.

The most popular three (3) articles in the Logistics/Maintenance Management section in 2021 were [Modernization Displacement and Repair Sites: MDRS 101](#) with 3,275 views, [GCSS-Army: Deciphering Document Numbers](#) with 3,111 views and [Army Equipment: Need to Look Up An Item Manager?](#) drawing 2,124 views.

There were two prominent themes that ran through articles devoted to logistics and maintenance management in 2021. The first was the need to train PMCS, safety and proper logistics procedures. The second was recognizing those who excel at it.

These articles touch upon the importance of maintenance training, safety and leadership involvement:

[Maintenance Mgmt: Ground Guiding is Serious Business](#)

[Maintenance Mgmt: Leaders Teach & Train PMCS](#)

[Maintenance Mgmt: The Cold Reality about PMCS](#)

[Ground Vehicles: QR Codes for PMCS Not TACOM-Endorsed](#)

[ASC Materiel Readiness Training Div Offers Virtual Option](#)

[Logistics: Commander's Actionable Readiness Dashboard](#)

[Maintenance Training: Find Every Chance to Teach](#)

Taking advantage of Army maintenance recognition programs is an excellent way to acknowledge those who go above and beyond when it comes to sustainment excellence. Take a look at these articles:

[Log/Maint Management: 2021 AAME, DEA and SEA Award Winners](#)

[Logistics Management: 2020 Petroleum Excellence Awards](#)

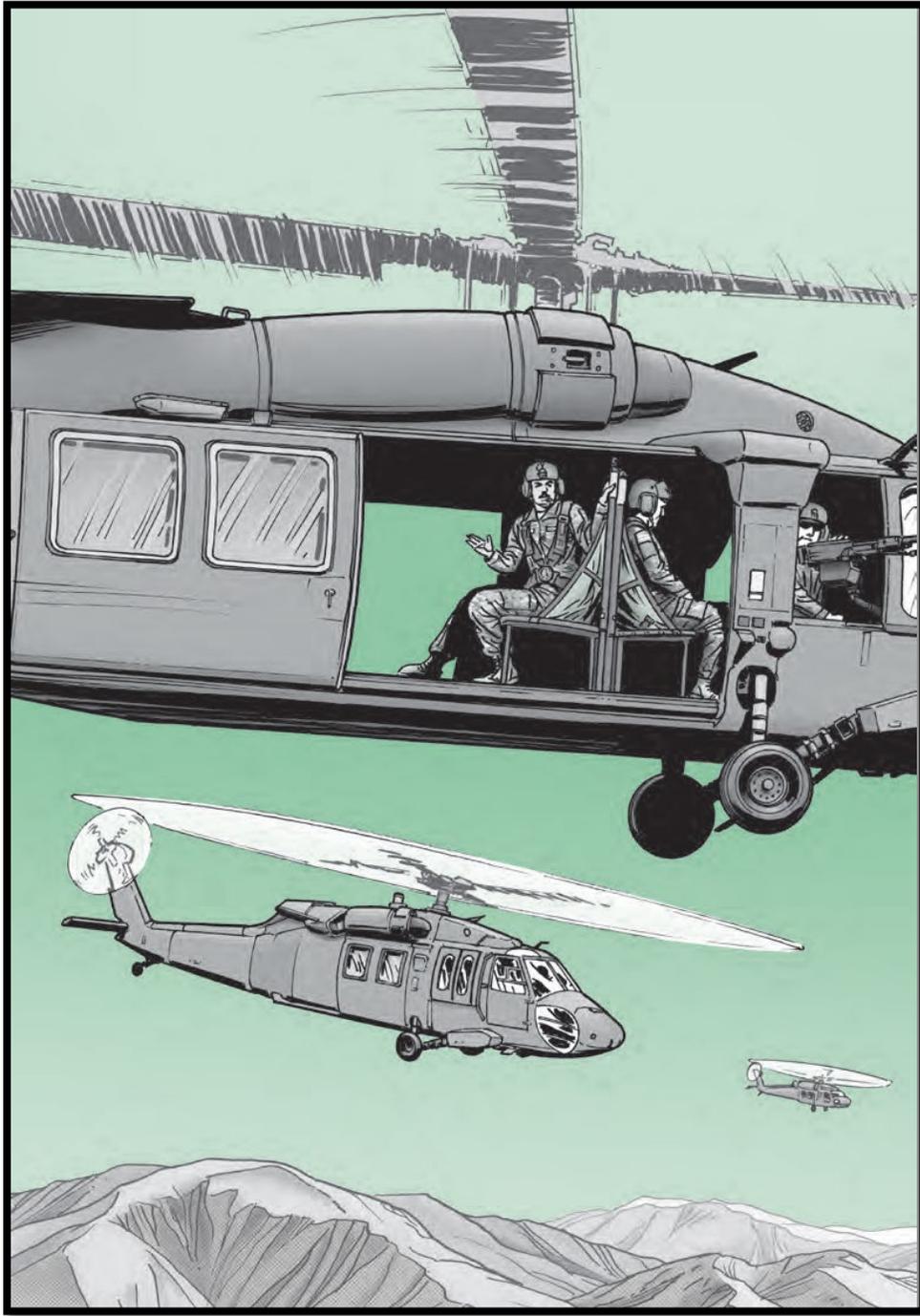
[Maintenance Management: 2020 Army Award for Maintenance Excellence Winners](#)

Don't forget that PS Magazine's "[I Own This](#)" program is yet another way to recognize Soldiers and Warfighters who "own" their equipment and maintain it to the highest standards.

Click [HERE](#) to go directly to the Logistics/Maintenance Management section of the PS website to see all of its content.

Have an idea for an article? Click [here](#) to drop PS Magazine's staff a line to share it.

# Aviation





# Aviation: 2021 Year-in-Review

/ Published Jan. 18, 2022



Photo by [Sgt. Sarah Sangster](#)

**Note:** text spot-colored in blue is hyperlinked.

In this inaugural year-in-review article, let's take a look back at some of the topics and themes that stood out in 2021 with an eye towards refreshing your maintenance skills and keeping your aircraft mission-ready.

Here's a sneak peek at some of the themes that stood out over the past year so you can add them to your maintenance priorities:

- Parts turn in
- Corrosion prevention
- Weather awareness
- Soldier tools and maintenance ideas
- Most read and downloaded aviation article

## Parts Turn in

In 2021, *PS Magazine* published several articles about the ongoing need for aviation units to turn in excess or unserviceable parts so they can be repaired or refurbished, if needed, and placed back into the supply system. These articles stressed not stockpiling parts because it leads to shortages in the supply system and may keep aircraft in a non-mission capable (NMC) status because of a lack of parts. The best practice is to always turn in excess or unserviceable parts so they can ultimately be placed back into the supply system. Take a look back at these articles:

[UH-60: Don't Stockpile Parts; Turn 'Em In](#)

[Apache: CCAD Needs Unserviceable Carrier Drive Assemblies](#)

[UH-60: Turn in These Unserviceable Parts](#)

[UH-60/AH-64/CH-47: Turn in Unserviceable ARC-231 Parts for Repair](#)

[Apache: Turn in Unserviceable Parts For Repair](#)

[Black Hawk: Turn In Unserviceable Gearbox and Control Indicator](#)

## Aircraft Weather Protection

Every year during the summer and winter months, maintainers must pay attention to how they protect themselves and their aircraft. Being aware of what extreme cold and heat can do helps you prepare for the mission. Take a look back and refresh yourself on cold and hot weather prevention articles. (The first and second article links are rollups of hot and cold weather stories for all equipment):

[Be Prepared for Hot Weather: A List of Must-Read PS Articles](#)

[Cold Weather: Some Must-Read PS Articles to Prepare, Plan & Train](#)

[All Aircraft: Cold Weather Prep, Icing and Winter Hazards](#)

[RQ-7B Shadow: Heed These Cold-Weather Precautions](#)

[All Aircraft: Preparing for Summer Weather](#)

## Corrosion Prevention

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Aircraft are powerful machines, but they're no match against corrosion. No matter what tasks you have, always be on the lookout for corrosion, especially in places you think don't matter. Don't let *out of sight, out mind* catch you off guard because what you can't or don't see can damage your aircraft. Something as simple as using covers can help protect against and prevent unwanted corrosion.

Take a look at these 2021 articles on corrosion:

[Lakota: Having Flight Control Rod Issues?](#)

[CH-47: Need Chinook Covers?](#)

[UH-60: Get Covers for Your Aircraft](#)

[Corrosion: AMCOM Has New Corrosion Website](#)

[Aircraft: Proper Shipping Fights Corrosion and Saves Money.](#)

### **Soldier Tools and Maintenance Ideas**

Sometimes when Soldiers and maintainers come with unique ideas to make maintenance simpler, better or faster, they send their ideas on tool and maintenance tips to *PS Magazine* for publication. These two articles will give you a leg up on maintenance:

[CH-47: Step Up with Aft Pylon Step](#)

[H-60 Series: Protect Tail Rotor Inboard Retention Plate](#)

### **Hot Item**

Sometimes a maintenance issue arises and we have to get info out quickly to our readers. This past year, an important issue arose about the APX-123/APX-123A Mode 5 transponder. Take a look at the article for a recap:

[HOT ITEM - Rotary-Wing Aircraft: Configure Mode S / ADS-B Out Properly.](#)

### **Most Read and Downloaded Aviation Article**

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For years, Soldiers have needed information on how to handle condition code tags and *PS Magazine* has periodically reminded readers of the various types, their purpose and how to get them. We were able to provide readers with a downloadable infographic that provides all this information in a single place. In fact, the [Condition Code Tags infographic](#) was the most downloaded aviation item on the website, with 3479 downloads for 2021.

For more information on this topic, visit [Aviation: Need Condition Code Tags?](#)



# AGSE: Maintaining Aircraft Jacks

/ Published Jan. 26, 2022

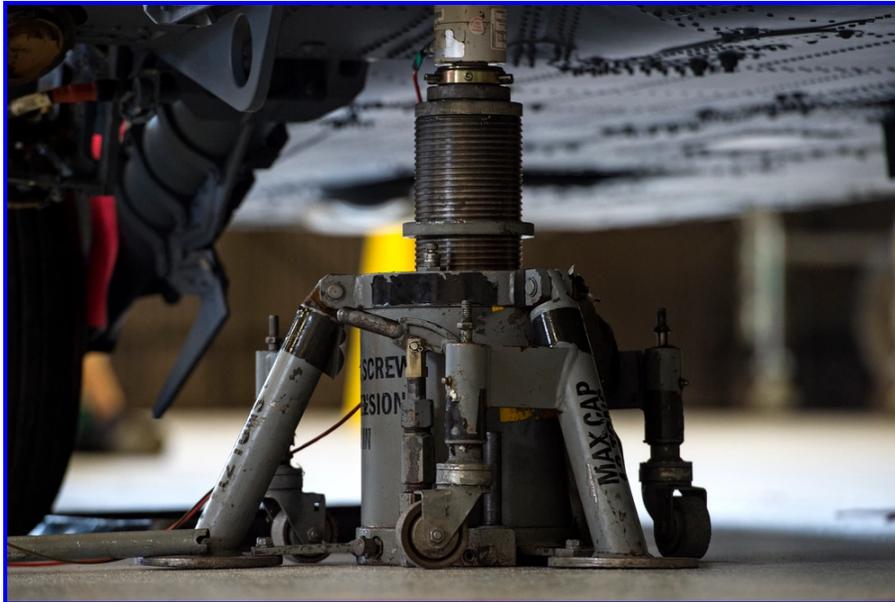


Photo by [Airman 1st Class Janiqua Robinson](#)

*This article initially appeared in PS 760 (Mar 16)*

Mechanics, if you have jacks sitting around the hangar collecting dust, make sure you give them a personal maintenance once-over before using them on your helicopters.

Here are some things you should eyeball:

- The hydraulic pump cylinder and ram for leaks
- Support structure base cracks
- Loose locknuts

Also check for:

- Missing or damaged hardware
- Bad hoses

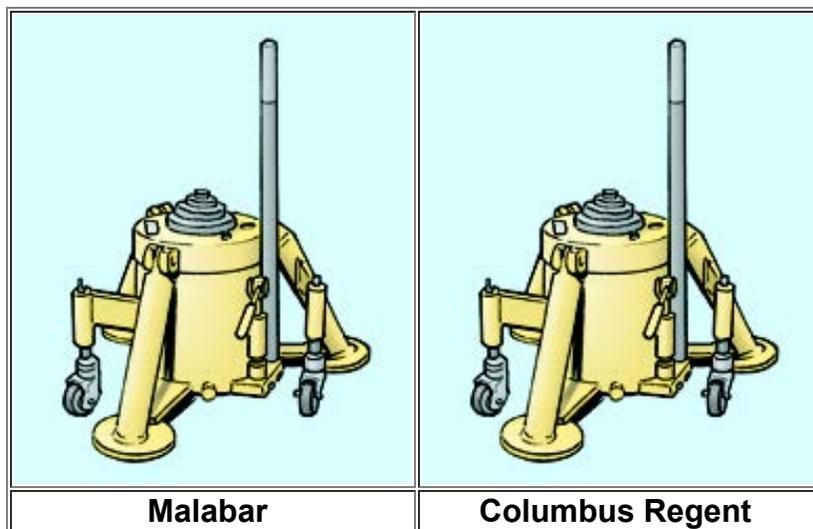
And don't forget the base—it's often neglected, too. If the base has casters, they should move freely and have good tread. Make sure the jack is free of dirt. Dirt acts like an abrasive and grinds into parts. That lets corrosion gain a foothold.

If your jack has a leak, don't use it until it's been checked out. After a jack is repaired, make sure it's load tested prior to use. It's required by Para 4 of TB 43-0142, *Safety inspection and Testing of Lifting Devices*.

There are six different jacks in use for aircraft lifting.

| <b>Jacks</b> |           |  |
|--------------|-----------|--|
| <b>Item</b>  | <b>PN</b> | <b>NSN</b>   |
| 3T Tripod    | L10532    | 1730-01-537-4357<br>1730-01-541-3186<br>1730-00-734-9382 |
| 5T Tripod    | L10559    | 1730-00-516-2018   |
| 5T Axle      | L09135    | 1730-00-540-2343   |
| 10T Axle     | L09340    | 1740-00-203-4697   |
| 10T Tripod   | NA        | 1730-01-563-7046   |
| 12T Tripod   | L10589    | 1730-00-912-3998   |

### 12-Ton Tripod Jack: Same Jack with Differences



The Malabar and Columbus Regent jacks are similar, but there are a few differences. One good example is the O-ring gasket shown as Item 35 in Fig 1 of TM 55-1730-218-20P. The Malabar O-ring comes with NSN 5330-01-622-6209, while NSN 5331-01-075-2184 gets the Columbus Regent O-ring.

Another way to identify the jacks is to look at their data plates. Columbus Regent jacks will have one of the following serial numbers:

| Serial Numbers  |                  |                   |
|-----------------|------------------|-------------------|
| 801-1291        | 10495-1 thru -6  | 11691-7 thru -18  |
| 0371-2 thru -3  | 10674-1 thru -3  | 11719-1 thru -230 |
| 10152-1 thru -3 | 10691-1 thru -6  | 11738-1 thru -2   |
| 10193-1 thru -4 | 11420-1 thru -4  | 11952-5 thru -8   |
| 10366-5 thru -6 | 11490-1 thru -20 | 12089-14 thru -20 |

### Repair Before Replace

Before discarding a broken jack and laying out big dollars for a new one, try rebuilding the jack. Most jack problems stem from damaged seals. Replacing the seals usually takes care of most problems.

Some jacks have rebuild kits available to make overhauling easy. Order the kit you need with these NSNs:

| Jack                   | NSN              |
|------------------------|------------------|
| Columbus Regent 12-ton | 2590-01-642-3505 |
| Malabar 12-ton         | 1730-01-500-4443 |
| 10-Ton Axle            | 1730-00-673-4717 |
| 5-ton Axle             | 1730-00-673-4716 |

Reference the following TMs for jack maintenance:

- TM 55-1730-218-12, 12-ton jack
- TM 1-1730-221-23P, 10-ton axle jack
- TM 1-1730-202-13&P, 5-ton tripod jack
- TM 1-1730-219-23P, 5-ton axle jack
- TM 1-1730-222-23P, 3 ton tripod jack

Remember to check out Chapter 9 in TM 1-1500-204-23-9, General Aircraft Maintenance, for more information on jacks.

If you're still using the 3-ton jack, NSN 1730-01-541-3186, manufactured by Regent, you'll find everything you need to maintain it in TM 1-1730-270-13&P (Oct 06).

The 12-ton jacks are managed by the Air Force. The TM is a multi-service manual with both the Air Force Tech Order and Army Tech Manual numbers appearing on the cover (TM 55-1730-218-12, Oct 14 and TO 35A2-2-36-21, Change 1 dated 26 Sep 2015).

Army users should continue using DA Form 2028 for submitting suggested changes to this TM. If you have questions about jacks, TMs or maintenance messages, contact the AGSE team hotline at: 256-955-8540 (Voice Mail) or you can send an email to the AGSE help desk at:

[usarmy.redstone.amcom.list.jtdi-agse@army.mil](mailto:usarmy.redstone.amcom.list.jtdi-agse@army.mil)

Have a need or recommendation for a product improvement that will save time, improve readiness, or reduce costs? AGSE and your combat developers want to hear about it.

You can also contact AGSE on the web at:

<https://www.jtdi.mil/>

You'll need your CAC card to access the site. When you enter the site, click on the AGSE tab from the My Sites drop down menu. On the right side of the page under AGSE help, click on AGSE help ticket to submit questions.

The help ticket allows you to submit an equipment-specific problem or question directly to a subject matter expert. An email will be sent back within 24 hours to provide you the status of your query.



# All Aircraft: Pick the Right Type and Number of Jacks

/ Published Jan. 28, 2022



Photo by [Spc. Michael Hunnisett](#)

*This article originally appeared PS 767 (Oct 16)*

Mechanics, aircraft jacks are vital for maintenance on your helicopter. They've been around for years and gone through a lot of changes. Some have been put out to pasture while others have been neglected.

That won't be a problem anymore because we tell how to maintain your jacked up jacks [HERE](#).

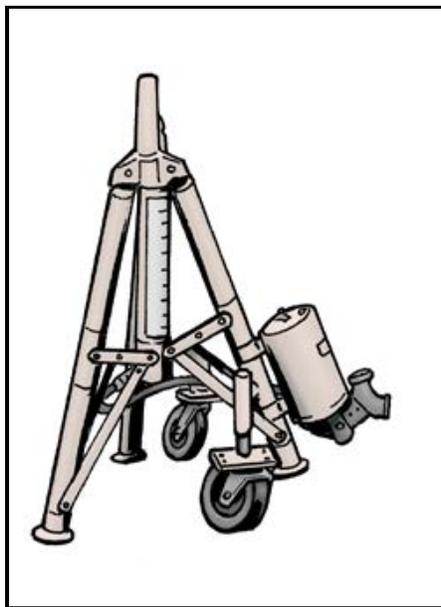
With all the changes, sometimes it's difficult to determine which jack is used for which aircraft task. No longer. Always check your TMs on how to use jacks. Here's a list of the maintenance tasks that require jacks and how many to use:

## Apache

**NOTE:** These are typical tasks which require the aircraft to be placed on jacks. Please ensure you follow TM 1-1520-Longbow/Apache (IETM) for specific requirements, size, placement, warnings, cautions, and notes for all jacks.

- Jacking aircraft, 3 point, using a tripod jack requires:
  - two 5-ton jacks, NSN 1730-00-516-2018, and one 3-ton jack, NSN 1730-00-734-9382. The Fuselage adapter, NSN 1560-01-226-7551, will also be used.
- Jacking aircraft, 2 point, using a tripod jack requires:
  - two 5-ton jacks, NSN 1730-00-516-2018. The Fuselage adapter, NSN 1560-01-226-7551, will also be used.
- Jacking tail landing gear using a tripod jack requires:
  - one 3-ton jack, NSN 1740-00-734-9382.
- Jacking the main landing gear, 1 point, using an axle jack requires:
  - one 5-ton jack, NSN 1740-00-540-2343.

Note that Apache is the only helicopter airframe that uses the 5-ton jack, NSN 1730-00-516-2018.

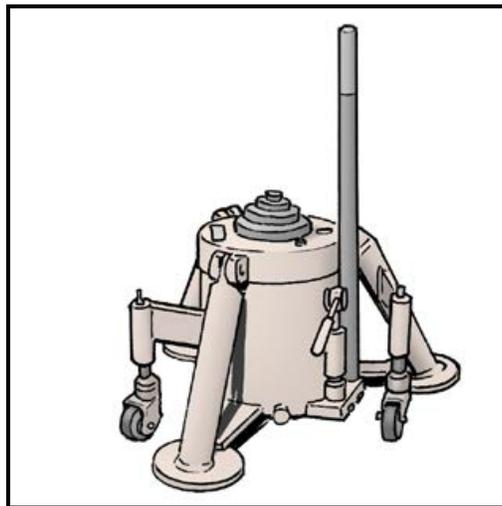


5-ton tripod jack, NSN 1730-00-516-2018

## Chinook

- Jacking an entire Chinook requires:
  - two 12-ton jacks, NSN 1730-00-912-3998, and two 10-ton jacks, NSN 1730-00-203-4697.

- As an alternative method, you can use:
  - two 12-ton jacks, NSN 1730-00-912-3998, and one 10-ton jack, NSN 1730-01-563-7046.
- Replacing the forward right- or left-hand gear assembly requires:
  - one 10-ton jack, NSN 1730-01-563-7046. However, the aircraft weight must be below 24, 500 pounds.
- Replacing the forward right- or left-hand tire assembly requires:
  - one 10-ton jack, NSN 1730-203-4697.
- Replacing the aft right- or left- hand gear assemblies requires:
  - one 12-ton jack, NSN 1730-00-912-3998.
- Replacing the aft right- or left- hand tire assembly requires:
  - one 12-ton jack, NSN 1730-00-912-3998.
- Weighing aircraft using load cells (3 point) with a max gross weight of 24,500 pounds requires:
  - two 12-ton jacks, NSN 1730-00-912-3998, and one 10-ton jack, NSN 1730-01-563-7046.
- Weighing aircraft using load cells (4 point) with a max gross weight of 33,000 pounds requires:
  - two 12-ton jacks, NSN 1730-00-912-3998, and two 10-ton jacks, NSN 1730-00-203-4697.

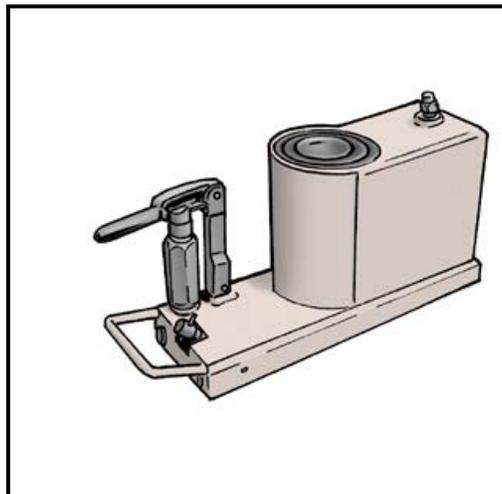


12-ton tripod jack, NSN 1730-00-912-3998

### **Black Hawk Aircraft**

- Jacking requires:
  - three 12-ton jacks, NSN 1730-00-201-4849.
- Removal and installation of the right- and left-hand landing gear shock strut requires:
  - one 12-ton jack, NSN 1730-00-201-4849.

- Jacking the right- and left-hand main landing gear wheel and tire assembly requires:
  - one 10-ton jack, NSN 1730-00-203-4697.
- Removal and installation of the tail landing gear shock strut requires:
  - one 12-ton jack, NSN 1730-00-201-4849.
- Removal and installation of the tail landing gear wheel and tire assembly requires:
  - one 10-ton jack, NSN 1730-00-203-4697.
- Weighing the helicopter using load cells (3 point) requires:
  - three 12-ton jacks, NSN 1730-00-201-4849.
- Changing a flat tire or collapsed strut requires:
  - one 12-ton jack, NSN 1730-00-201-4849, or one 10-ton jack, NSN 1730-00-912-4697.
- Changing a flat tail tire or collapsed gear strut requires:
  - one 12-ton jack, NSN 1730-00-201-4849, and one 10-ton jack, NSN 1730-00-912-4697.



**10-ton axle jack, NSN 1730-00-203-4697**

### Lakota

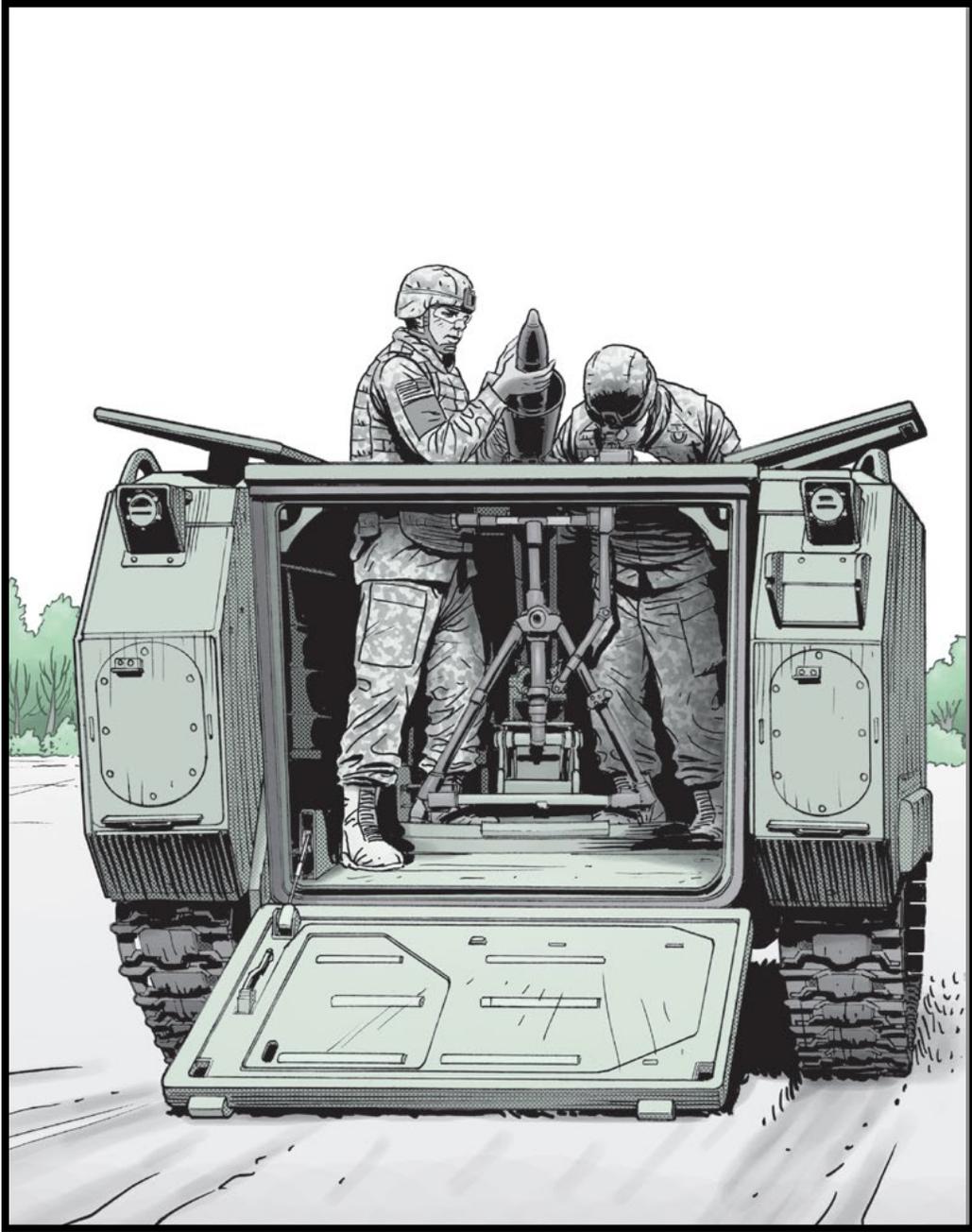
Jacking an entire UH-72A aircraft takes four jacks. The type of jack is **not** specified, but two 12-ton tripod jacks, NSN 1730-00-912-3998, and two 10-ton landing gear jacks, NSN 1730-00-203-4697, work well.

Weighing the Lakota requires three jacks. The type of jack is not specified, but one 12-ton tripod jack, NSN 1730-00-912-3998 and two 10-ton landing gear jacks, NSN 1730-00-203-4697 work well.

### Summary:

When it comes to jacking helicopters, don't just use the right number and the right type of jacks! Make sure you maintain them too! Be smart and be safe.

# Combat Vehicles





# Stryker: Calibrate and Maintain Height Management System

/ Published Jan. 24, 2022



Photo by [Charles Rosemond](#)

Stryker maintainer, this article covers the following aspects of the height management system (HMS):

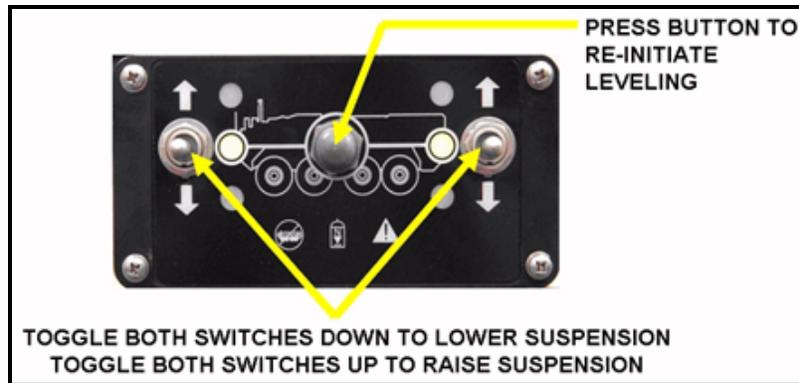
- Calibration
- Driving at correct height
- Operation
- Identification of faults
- HMS IBIT
- Event list
- Common HMS Issues
- W74/W75 Replacement
- Drain the Hull
- Air Transport Box

**NOTE:** To view any image more clearly, right click on it and select: open link/image in a new tab.

## Proper Calibration

The most important thing you can do to maintain a high level of readiness is to properly calibrate the HMS.

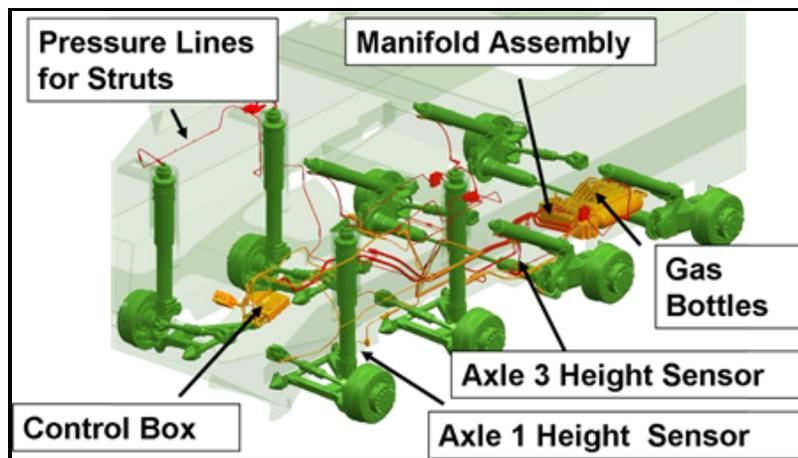
Proper calibration requires use of the height management unit (HMU), which consists of a level button, height adjustment toggle switches, height adjustment activity LEDs and status indicators.



Height management unit (HMU)

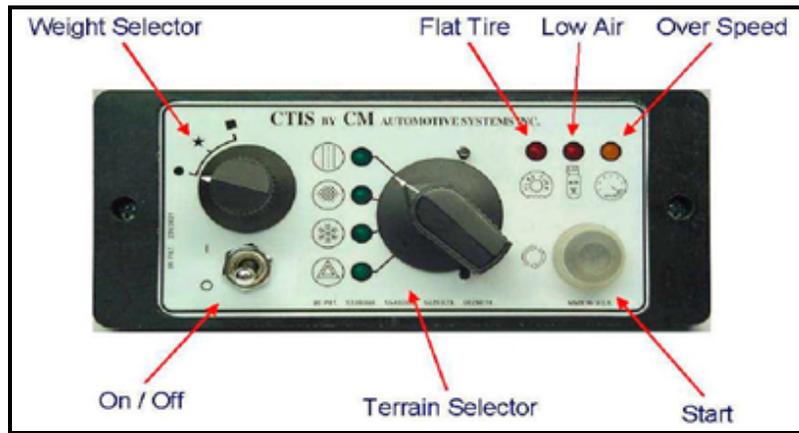
1. Be sure to use the calibration tool (shorting plug), NSN 5935-20-001-3861. The charge fittings on the quadrants (nitrogen manifold) to the hydropneumatic struts should be

open.



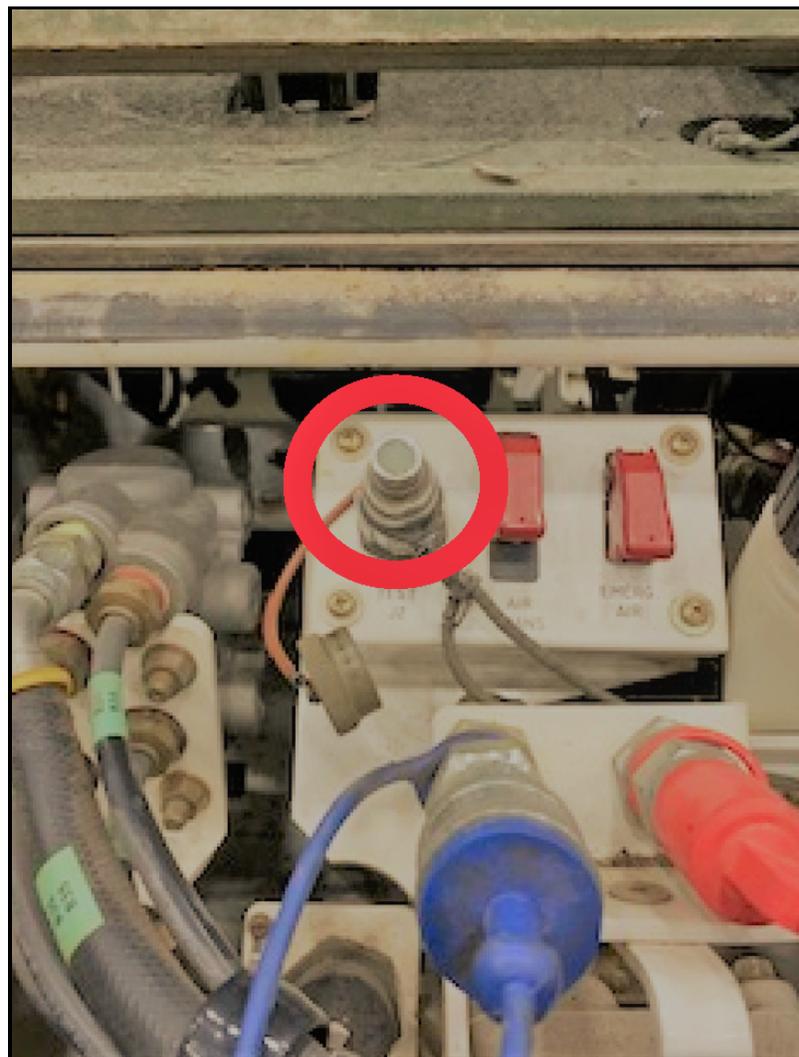
Nitrogen critical to keeping HMS working

2. Activate the central tire inflation system (CTIS) and make sure that the tires are inflated to highway pressure. For more info, see TM 9-2355-311-13&P (Sep 16), TM 9-2350-450-23&P (Aug 21), TM 9-2355-363-23&P (May 21) and TM 9-2355-326-23&P (Jun 21).



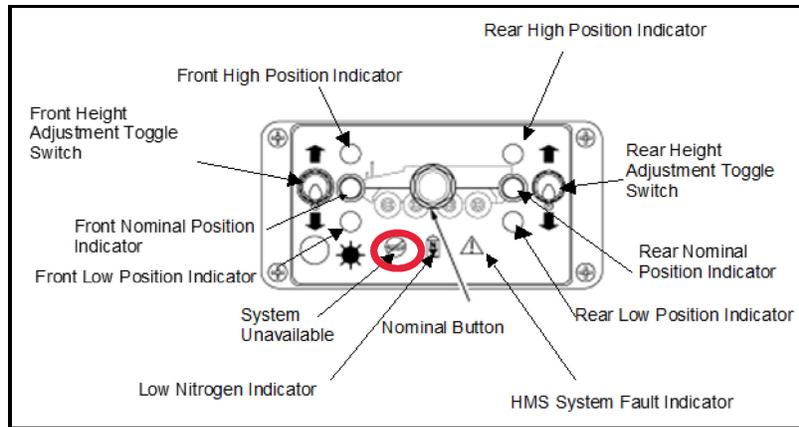
**Activate CTIS**

3. Place the calibration tool into the J2 port on the air transport box located in the front access cover by the drivers hatch. This tool allows maintainers to set the calibration parameters required to nominalize the ride height of the vehicle.



**Install calibration tool on J2 port**

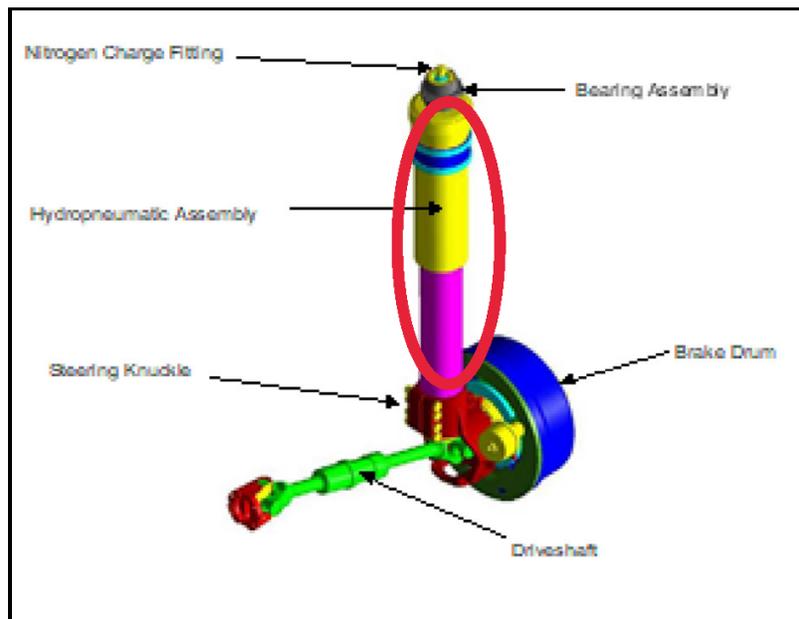
4. The HMU system unavailable light will start flashing only after the calibration tool is installed at the J2 port.



**System unavailable light will flash**

5. Push the two (2) toggle switches on the HMU up and hold it for two (2) seconds, allowing the vehicle to raise to the maximum height. The low nitrogen light and the system fault icons will flash on the HMU. Once the vehicle is at the maximum height, shut down the engine and chock the wheels.

6. Measure the first and third axle struts between the collar and dust shield to make sure that the 1st axle struts measure greater than 22 inches and the 3rd axle strut is greater than 21 inches. Then have the operator start the engine, remove the wheel chocks and then depress the center button on the HMU, registering the max height.



**Measure first and third axle struts**

7. Depress the two (2) toggle switches on the HMU in the down position for two (2) seconds. The front and rear lower LEDs will flash.



Depress two toggle switches

8. Ensure that the low nitrogen and system fault lights go out.

9. Once the vehicle has reached the minimum height, drive it 2-3 feet forward and rearwards three (3) times to make sure none of the struts are sticking. Then shut down the engine and chock the wheels.

10. Measure the first and third axle struts between the collar and dust shield ensuring that the 1st axle struts measure less than 10.75-11 inches and the 3rd axle strut is less than 12-12.3 inches.

11. Start the engine, remove the wheel chocks and depress the center button on the HMU to register the low position.

- Toggle the two (2) switches up for two (2) seconds.
- Remove the calibration tool from the air transport box J2 connector.

- Depress the center button on the HMU to level the vehicle.



**Depress center button on HMU**

12. Once the vehicle has reached its nominal ride height, shut down the engine and chock the wheels.

13. Measure the 1st and 3rd axle struts to ensure that the 1st measures 16.4-17.6 inches and the 3rd measures 16.25-17.4 inches. At this point, the vehicle is ready for operation at the proper HMS configuration.

### **Driving at Correct Height**

The HMS is capable of operating in the following modes:

- Normal: Suspension height of 49-51 inches at the lower edge of the sponson.

- Mine High: This position is used in high-risk areas, as well as for increased ground clearance and enhanced self-recovery.

## Operation

When a level operation is initiated by the driver, the HMU interconnects the nitrogen paths between the two rear quadrants. This allows the nitrogen pressure in the rear quadrants to equalize and create one virtual rear “half.”

The HMU then compares the average height of the rear of the vehicle with the two front quadrants. If there is a height differential, the HMU continues the leveling procedure.

The HMU repeats the adjustment procedure until no further adjustments are required. The HMU will “time out” if the procedure isn’t completed within four (4) minutes.

## Identifying Faults

Maintainers can identify faults with the height management system by using the video display terminal (VDT)/video display electronic terminal (VEDET). Here’s some info that

will come in handy for maintainers:

- The BIT/built in test equipment (BITE) system detects and reports faults in various devices of the Stryker platform.
- The BIT in each device notifies the VDT/VEDET and fault codes are sent through the controller area network (CAN) bus to the VDT/VEDET where faults can be retrieved to aid in proper diagnostics and fault code identification.
- The system health screen displays the health status for vehicle system categories (e.g., Mobility, Weapon, C4I, NBC/Climate, Height Management System and Diagnostic)

Each vehicle system category has a rolled up sub-system screen that allows operators and maintainers to view specific system component failures related to that system.

- Fault Critical Colors:
  - Red: Fail Status Key
  - Yellow: Degraded Status Key
  - White: Waiting Status Key

- Green: Pass Status Key
- Initiated BIT (IBIT): A more thorough check of the line replaceable unit (LRU) that is selected in the System Health status screen of the VDT/VDET.

### Height Management System IBIT

Follow the prompts on the VDT/VDET to run Height Management IBIT:

- Select “System Health”
- Select “Height Management”
- Select “IBIT”

### Event List

The event list contains fault details for all subsystems and displays fault details, such as fault codes and possible corrections.

- Select “Active Fault” and click on “Full Details” to display diagnostic details:
  - Fault code
  - Type of fault
  - Effect of fault
  - Course of action (COA)
  - Potential sources of fault (**Note: Do not** use this for part swapping. Instead, use it for preliminary checks and diagnostic checks of the system.)
  - Listed CAGE code & part number (**Note:** Before ordering parts, verify part numbers and NSNs in the RPSTL section of the Stryker parts TM.)
  - Time of recorded fault
  - Number of fault occurrences
  - Status of fault

### Common HMS Issues

It’s important for maintainers to ensure all quadrants and struts are open. If struts and quadrants are isolated, nitrogen will not flow properly, causing internal damage to the struts.

- **Note:** When any kind of maintenance is performed on the HMS manifold, check that all wires leaving the manifold are connected properly to the W71 wiring

harness. Also, check that the cannon plugs to the harness tree are all tight. Check for plugs that are backed out, too. If you can see red on the plug, it's loose. The wires all have the same cannon plug and are easy to mix up.

Correctly connect the gas and oil sensor. If you don't:

- The transfer pump will not operate.
- Struts solenoids won't open to allow nitrogen to flow.
- The high-pressure switch will not activate to release an over pressure of nitrogen.
- The HMS will not go up or down.
- The HMS will not properly calibrate.

Make sure the sensor gas (SG) and sensor oil (SO) sensors are connected correctly. Remember that the SG is on the gunner side and the SO is on the operator side.

- The low-pressure sensor (LPS), high-pressure sensor (HPS) and relief pressure sensor (RPS) all have the same type of fittings, so don't mix them up when connecting them to their ports.
- Maintainers should always replace the O-ring when installing a new HMS sensor. If not, the sensor can be damaged and fail. Also, the HMS sensors need to be lubricated when being installed.
- Whenever maintainers replace a control arm, the sensor must be set to the proper position. A thrust adjustment is also required. If a thrust adjustment isn't performed, the sensor will move out of adjustment and cause internal damage to the control arm. Refer to TM 9-2355-311-13&P (Sep 16), TM 9-2350-450-23&P (Aug 21), TM 9-2355-363-23&P (May 21) and TM 9-2355-326-23&P (Jun 21).

### **W74/W75 Replacement**

If the W74/W75 isn't installed correctly and tightly, water damage and corrosion will result, causing the control arm sensor to fail. The rear sensor can also fail.

### **Drain the Hull**

Failure to drain the hull can cause damage to all harnesses, manifolds, sensors and solenoids.

The relief valve between the pressure tanks can also clog if the hull isn't drained.

In cold weather the nitrogen valve can stick open and cause nitrogen to leak from the

system. Keeping the hull free of fluid can help prevent this.

Here's a previous *PS Magazine* article on draining the hull:

### [Stryker: Prevent Component Snorkeling](#)

#### **Rear HMS Sensors**

The biggest problem with the rear HMS sensors is that when they are replaced, the O-ring that goes on them is often not installed. If this O-ring is not installed, internal damage will occur causing the sensor to fail.

Ensure rear HMS sensors are lubricated. Failure to lubricate the sensors causes them to seize and not correctly operate.



**Lubricate rear HMS sensors**

#### **Air Transport Box**

Whenever maintainers use the air transport box, they often forget to install the dust cover. If the dust cover isn't installed, water gets into the box and causes the transport box to short out, making the HMS system stuck at the height that it is currently.

In summary, proper calibration, operation and attention to detail when maintaining all other aspects of the HMS is essential for proper functioning of the HMS. You can't properly calibrate without using the calibration tool. Don't use a jumper wire! It will cause internal damage to the HMU. When in doubt, follow the TM or contact your local TACOM logistics assistance representative (LAR) for help.



# Combat Vehicles: 2021 Year-in-Review

/ Published Jan. 25, 2022



Photo by [Charles Rosemond](#)

**Note:** text spot-colored in blue is hyperlinked.

Another year, another 525,600 minutes of preventive maintenance. Although it's hard to pinpoint a definitive trend when it comes to maintenance issues among combat vehicle fleets in 2021, one clear trend was the need to improve combat readiness through improved preventive maintenance.

This trend was particularly true with the Strykers fleet, which has had recent issues with batteries and vehicle fires. *PS Magazine* published a series of Stryker-related articles in 2021 focused on getting back to the basics of preventive maintenance. Here's a list of them:

[Stryker: Height Management System PM](#)

[Stryker: Maintain RWS to Get Most Bang for the Buck](#)

[Strykers: Maintaining the Mortar Carrier Vehicle's RMS6-L](#)

[Stryker: Only You Can Prevent Fires!](#)

[Stryker: Prevent Component "Snorkeling"](#)

[Strykers: Prevent N2 Gauge Damage with Simple Fix](#)

[Stryker: Charging System Diagnostics and Troubleshooting](#)

The Stryker articles about preventing fires and charging system diagnostics and troubleshooting were two of the most read articles in the combat vehicles category on our website in 2021.

The M1A2 SEPV3 tank is being fielded to units now. As with any new system, there are immediate lessons that need to be learned to keep the vehicle in tip-top shape. Below are a couple articles *PS* published the past year:

[M1A2 SEPV3 Tank: Keep Engine Timer Powered Up](#)

[M1A2 SEPV2/v3 Tank: EMU Key to Keeping Engine Running](#)

In 2022, *PS Magazine* will publish the latest maintenance info on the new variant when it becomes available.

Older vehicles like the M113A3 FOV and M60/M48-Series AVLB require a lot of attention to keep them operating. *PS* had them covered, as well:

[M113A3-Series FOV: Inspect Transmitter Temperature Sensor](#)

[M60/M48-Series AVLB: Inspect Transmitter Temperature Sensor](#)

Safety is always a top issue, which is why *PS Magazine* devotes a lot of effort to keeping Soldiers informed about ways to prevent injuries and damage to equipment. The automatic fire extinguishing system (AFES) found in many vehicles is a frequent topic in *PS* and 2021 was no exception:

[Combat Vehicles: Always Heed These AFES Safety Tips](#)

Turning in line replaceable units (LRUs) is also a frequent hot topic. *PS* brought you the latest info to help units avoid turning in LRUs that are actually serviceable, thus

helping to save money:

[Combat Vehicles: LRU Troubleshooting and NGATS/DSESTS](#)

Whatever the maintenance issue is, you can count on *PS Magazine* to bring you the latest and most accurate info available in 2022 and beyond!

# Commo/Electronics





# Commo/Electronics and Soldier Support: 2021 Year-in-Review

/ Published Jan. 20, 2022

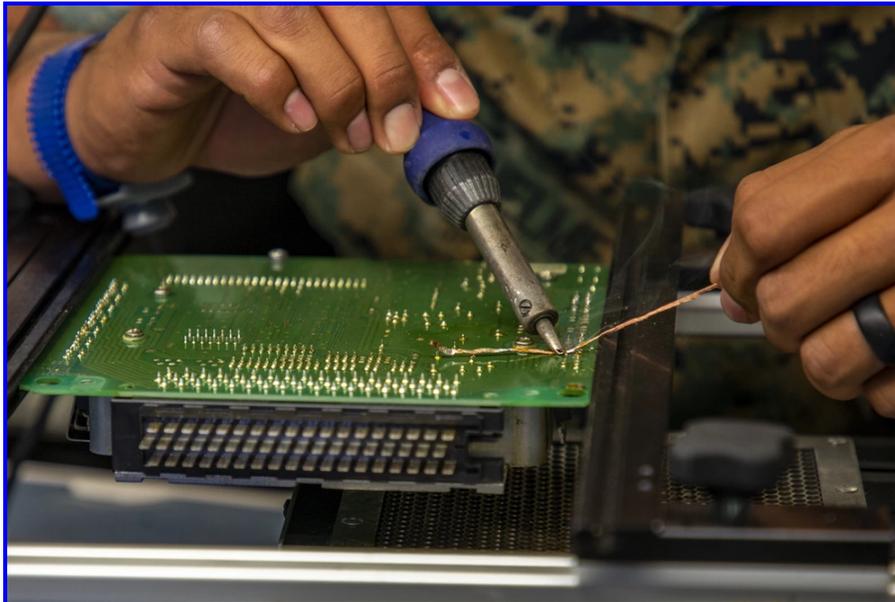


Photo by [Cpl. Christian Garcia](#)

If there's one thing 2021 taught us, it's to expect the unexpected. Some things stay the same, though...like the need for preventive maintenance, and solving perplexing problems, especially when it comes to commo and electronics.

## Commo/Electronics

As part of the 2021 year-in-review, we analyzed the most viewed communications/electronics articles since our website launched. Here are the top three (click on each title):

1. [CSS VSAT AN/TSC-183A: New TM Powers Up](#)
2. [AN/PYQ-10 SKL: Software Updated](#)
3. [AN/PYQ-10\(C\): SKL Software and Support](#)

Other communications/electronics topics we covered during the year include:

### **Generators**

With dozens of models, generator FAQs are some of the most frequent we receive:

- [MEP-531A TQG: AC versus DC Voltmeter](#)
- [Generators: Hunting for Terminal Clips](#)
- [MEP-831A 3kW TQG: NSN Confusion Leads to Faulty Orders](#)

### **Communications Devices**

- [AN/TSC-156D: Protect Phoenix Antenna Assemblies](#)

### **Computers and Software**

- [Communications: Have You Downloaded the RSAM Update Yet?](#)

## **Soldier Support**

Whether it's something to read or something to wear, Soldier Support covers a wide range of subjects.

The top three most requested articles since our website launched were:

1. [Army Combat Fitness Test Equipment NSNs](#)
2. [UTAP: You're Just a Click Away!](#)
3. [Cloth Face Masks Now Available](#)

Other topics that captured readers' interest included:

### **Publications**

- [Two Fuel System Supply Point TMs](#)

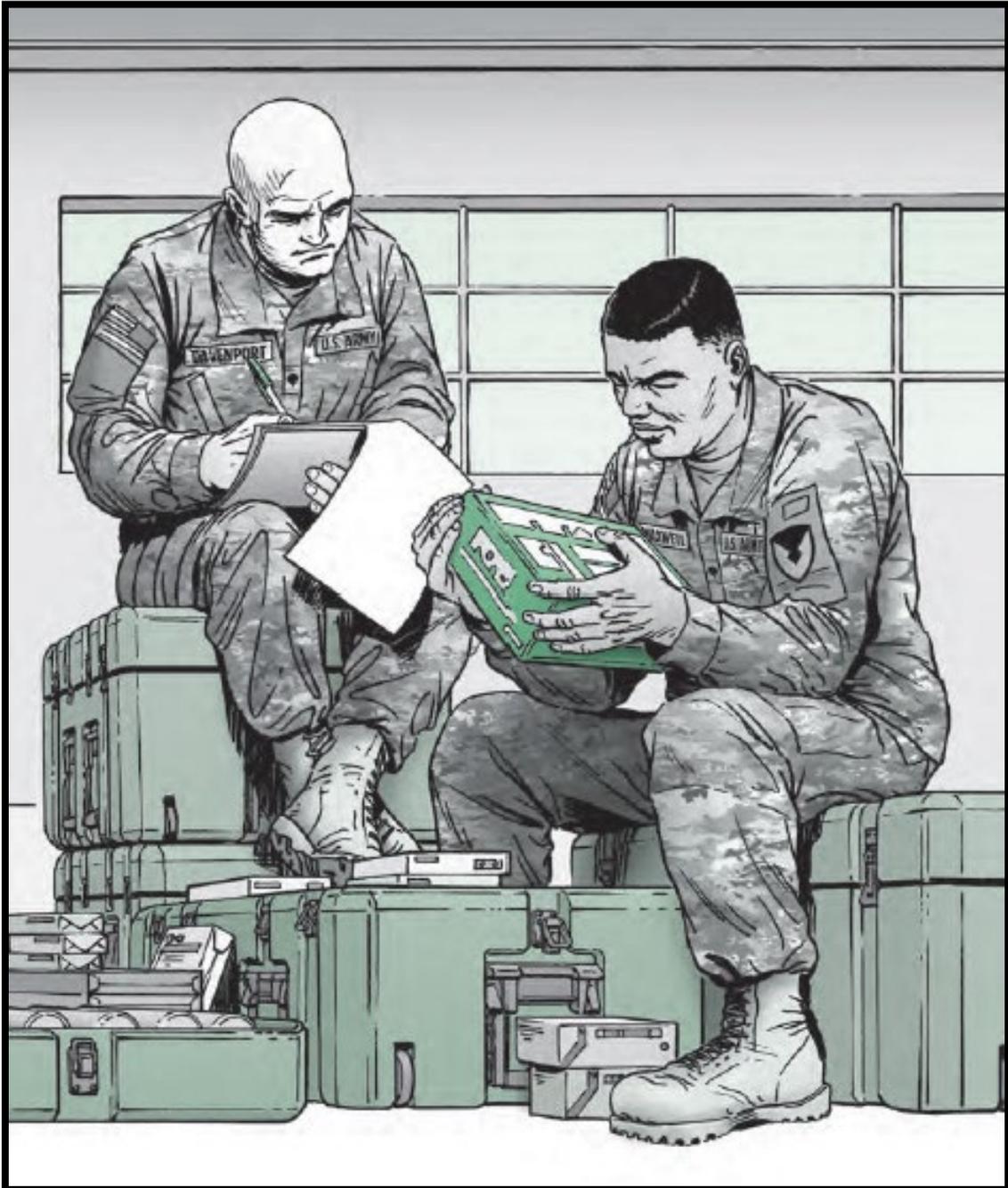
### **Training**

- [LandWarNet Offers Many Options](#)

### **Uniforms**

- [Clothing: Instructions for Wearing the AGSU](#)

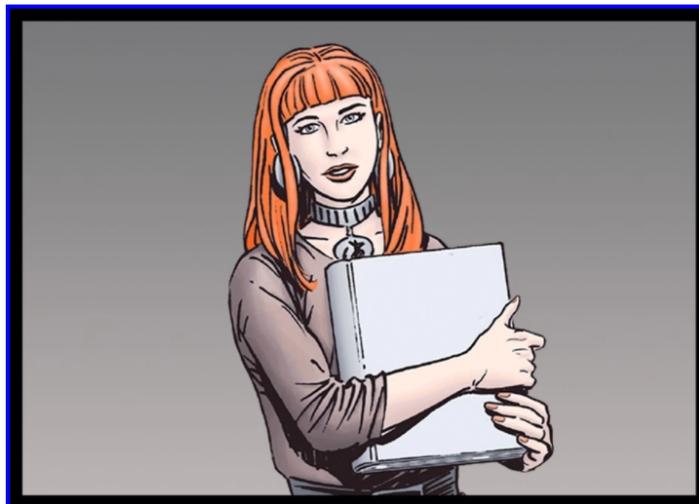
# Logistics Management





# Logistics & Maintenance Management: 2021 Year-In-Review

/ Published Jan. 26, 2022



**PS Magazine's Cloe**

**Note:** text spot-colored in blue is hyperlinked.

From January 1, 2021, through December 31, 2021, the Logistics/Maintenance Management section of the *PS Magazine* website welcomed 6,667 visitors who viewed 9,385 articles. As a part of the *PS Magazine* year-in-review, we took a look back at the most popular articles.

The most popular three (3) articles in the Logistics/Maintenance Management section in 2021 were [Modernization Displacement and Repair Sites: MDRS 101](#) with 3,275 views, [GCSS-Army: Deciphering Document Numbers](#) with 3,111 views and [Army Equipment: Need to Look Up An Item Manager?](#) drawing 2,124 views.

There were two prominent themes that ran through articles devoted to logistics and maintenance management in 2021. The first was the need to train PMCS, safety and proper logistics procedures. The second was recognizing those who excel at it.

These articles touch upon the importance of maintenance training, safety and leadership involvement:

[Maintenance Mgmt: Ground Guiding is Serious Business](#)

[Maintenance Mgmt: Leaders Teach & Train PMCS](#)

[Maintenance Mgmt: The Cold Reality about PMCS](#)

[Ground Vehicles: QR Codes for PMCS Not TACOM-Endorsed](#)

[ASC Materiel Readiness Training Div Offers Virtual Option](#)

[Logistics: Commander's Actionable Readiness Dashboard](#)

[Maintenance Training: Find Every Chance to Teach](#)

Taking advantage of Army maintenance recognition programs is an excellent way to acknowledge those who go above and beyond when it comes to sustainment excellence. Take a look at these articles:

[Log/Maint Management: 2021 AAME, DEA and SEA Award Winners](#)

[Logistics Management: 2020 Petroleum Excellence Awards](#)

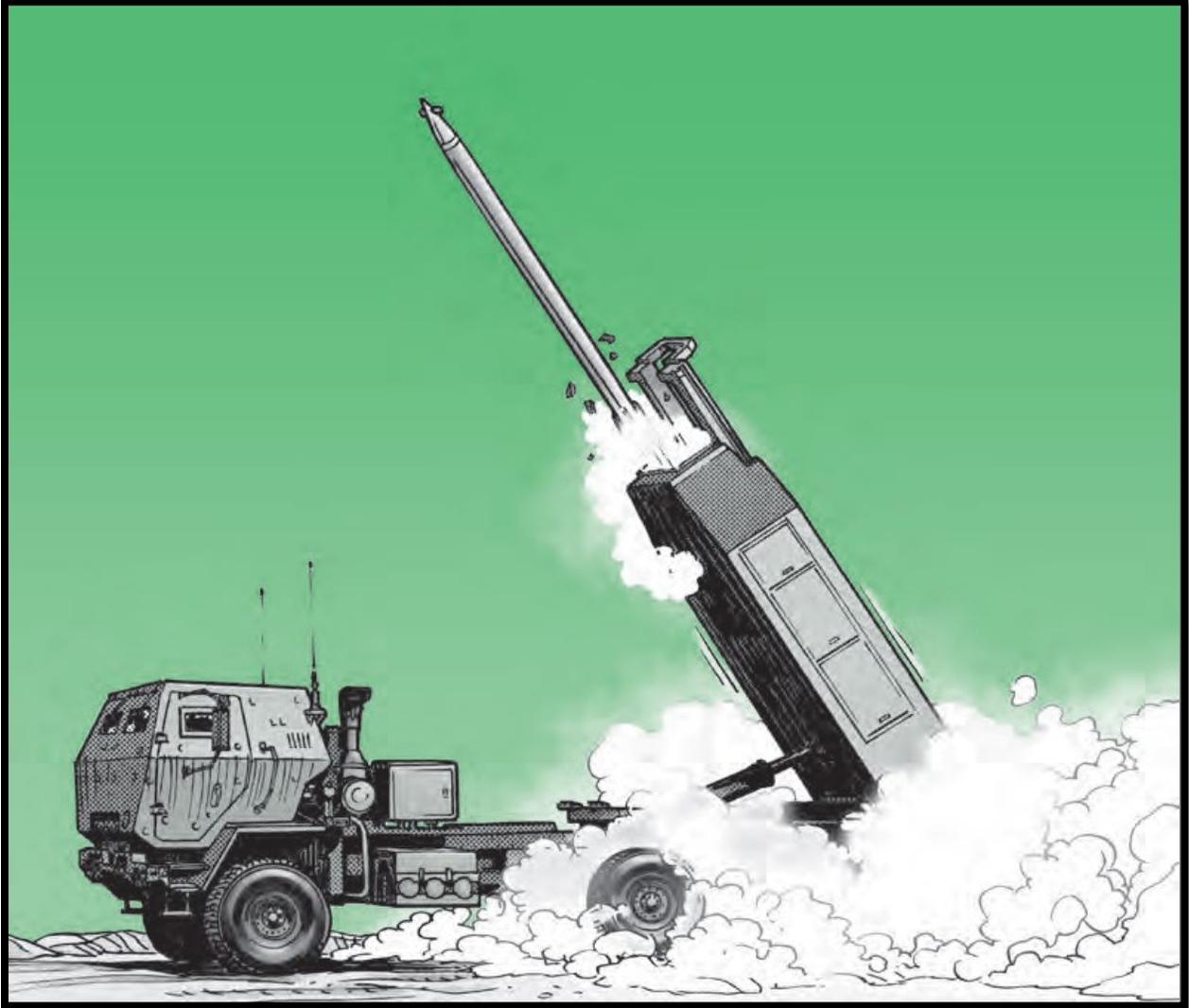
[Maintenance Management: 2020 Army Award for Maintenance Excellence Winners](#)

Don't forget that PS Magazine's "[I Own This](#)" program is yet another way to recognize Soldiers and Warfighters who "own" their equipment and maintain it to the highest standards.

Click [HERE](#) to go directly to the Logistics/Maintenance Management section of the PS website to see all of its content.

Have an idea for an article? Click [here](#) to drop PS Magazine's staff a line to share it.

# Missiles





# Missiles: 2021 Year-in-Review

/ Published Jan. 18, 2022



Photo by [Sgt. Christopher Hernandez](#)

**Note:** text spot-colored in blue is hyperlinked.

In 2021, the US Army Aviation and Missile Command (AMCOM) introduced its [new corrosion website](#). The Patriot missile team set corrosion [training dates for both FY21 and FY22](#).

CW3 Robert T. Brower provided Patriot missile teams with tips on how to prevent hydraulic fluid contamination and how to properly store hydraulic fluid. You can read [Patriot: Contaminated Hydraulic Fluid Can Cause Faults](#) and get all his helpful advice.

While performing PMCS on the ITAS, operators were reminded to look for cracks in the tube. The article, [ITAS: Repair or Replace Damaged Tube?](#), told the operators what to do when they find cracks. It also told the mechanics what kit to use to repair a cracked tube.

[A Clean Javelin is a Happy Javelin!](#) reminded operators to clean the system before they store it. It also reminded them to remove the CLU batteries before shipping or turning the CLU in for repair.

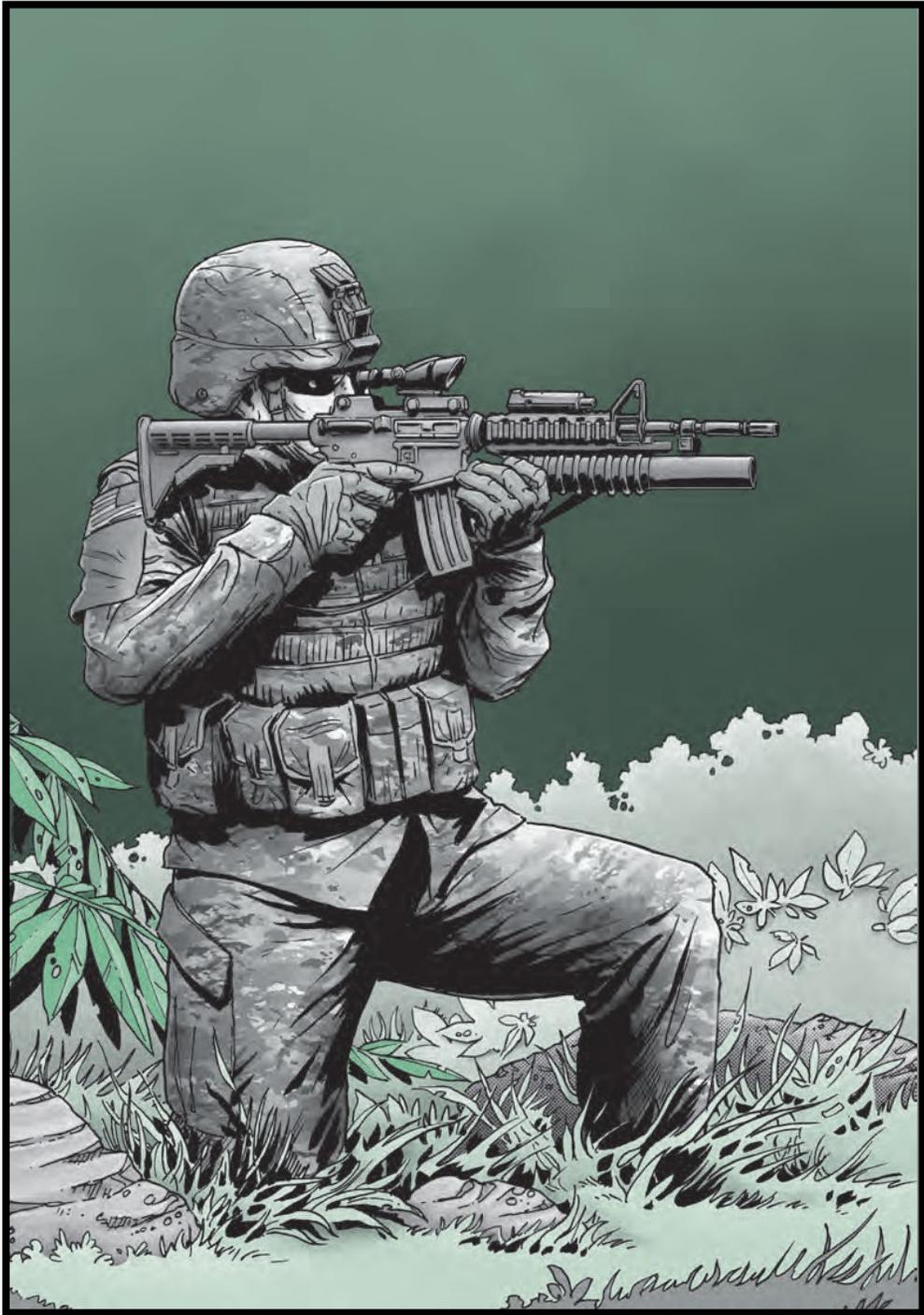
HIMARS crews received information on the [frame rail check](#). Checking the leaf springs around the U-bolts and mounting brackets was specifically stressed.

[MLRS: Don't Let the Cold Weather Stop You in Your Tracks](#) showed the most likely location of snow and ice buildup and how to remove it. And [PMCS tips that multiply system performance](#) reminded crews on ways to get the most out of their system when it counts the most.

In terms of most-viewed, missile-related articles for 2021, these three had the most traffic:

- [FMTV/HIMARS: Driveshaft U-Joint Kit](#) – **Visits:** 372 **Views:** 393
- [M41A7 TOW ITAS: Make Sure You're Doing Monthly and Annual PM](#) – **Visits:** 317 **Views:** 336
- [Corrosion: AMCOM Has New Corrosion Website](#) – **Visits:** 310 **Views:** 361

# Small Arms





# P-D-680/CID A-A-59601 Cleaning Solvent Is a NO-GO!

/ Published Jan. 5, 2022



Photo by [Pfc. Armando Elizalde](#)

P-D-680, also known as CID A-A-59601, contains harmful chemicals that adversely affect the environment. Bottom line: P-D-680 is **NOT** the same as MIL-PRF-680!

MIL-PRF-680 is better for the environment and user health, while maintaining cleaning performance.

**If you're using P-D-680/CID A-A-59601 in your cleaning processes, **STOP!**  
Use MIL-PRF-680 instead.**

This info applies to tactical vehicles and small arms. Here are the NSNs:

| NSNs for MIL-PRF-680 |        |         |          |         |
|----------------------|--------|---------|----------|---------|
| Container Size       | Type I | Type II | Type III | Type IV |
|                      |        |         |          |         |

| <b>NSNs for MIL-PRF-680</b> |                  |                  |                  |                  |
|-----------------------------|------------------|------------------|------------------|------------------|
| 1 Gallon                    | 6850-01-474-2302 | 6850-01-474-2319 | 6850-01-474-2318 | 6850-01-472-2722 |
| 5 Gallon                    | 6850-01-474-2309 | 6850-01-474-2317 | 6850-01-474-2320 | 6850-01-472-2717 |
| 55 Gallon                   | 6850-01-474-2313 | 6850-01-474-2316 | 6850-01-474-2321 | 6850-01-472-2719 |

Note that when units are updating from P-D-680 to MIL-PRF-680, the solvent type should remain the same. For example, P-D-680 Type I should be replaced by MIL-PRF-680 Type I, and so on.

Questions? Send an email to the DEVCOM GVSC Fuels and Lubricants Branch at:

[usarmy.detroit.devcom-gvsc.mbx.pol-help@army.mil](mailto:usarmy.detroit.devcom-gvsc.mbx.pol-help@army.mil)



# Small Arms: 2021 Year-in-Review

/ Published Jan. 25, 2022



Photo by [Sgt. Steven Lewis](#)

**Note:** text spot-colored in blue is hyperlinked.

In 2021's article, [Ammunition: Report Malfunctions!](#), Soldiers learned about ammo malfunctions and what Army regulations they need to become familiar with. The [experts at DA explain the ammunition authorization process](#). It's important to properly manage ammunition as [Ammunition: Don't Waste it!](#) explains, and not indiscriminately fire rounds. And finally, Soldiers learned how both [hot](#) and [cold](#) weather affects ammo.

M16-series rifle and M4/M4A1 carbine operators were reminded how to properly perform [C-SPORTS](#). The article [Dry Up Dry Firing](#) explained proper clearing procedures and told you who can dry fire the rifle. Check out the [advice for Ft Leonard Wood](#) and learn how to maintain your M16/M4 weapon. Also, make sure to [check for loose barrels and mounting rails](#). Finally, [the firing pin is not for cleaning](#). A bad firing pin means the rifle won't fire reliably.

Some Soldiers were having problems with the M17 pistol. [M17 Pistol: Takedown Lever Getting Stuck During Disassembly](#) not only explained the procedures but included a short video on how to fix the problem. Some M17/M18 pistols come in for maintenance with the loaded chamber indicator (LCI) not completely flush and the rear sight loose. To avoid these problems, read these [new rear sight installation instructions](#), and then keep them handy until the -10 TM is updated. Use only a small amount of CLP when lubricating your pistol and avoid other problems by reading [this](#) article.

The M249 machine gun article, [Dimple Usually Not a Problem](#), explained that barrels with a dimple are considered good to go as long as there are no extraction problems. [Check the piston pin](#) if you have an M249 that functions manually but will not fire. After cleaning your M249, check the [gas port hole](#) and make sure there are no obstructions. If your M249 collapsible buttstock is coming loose, [learn how to tighten it](#).

Make sure to readjust the M2A1 machine gun timing during scheduled maintenance. Get the whole story [HERE](#).

Make sure to lace the MK19 machine gun bolt correctly to reduce as much movement as possible. Make sure to follow TACOM's [recommended lacing guidance](#). When the MK19 machine gun is disassembled, after removing the sear plate assembly, make sure to [always lock the sear in place](#).

[Watch your fingers](#) when firing the M320 grenade launcher. It has a very short barrel and your fingers can be injured when the round explodes out of the barrel.

If you need M3E1 recoilless rifle training information, get it [HERE](#).

The M500 shotgun isn't deadlined if the receiver is missing screws. There are [options to fill the holes](#).

The M9 pistol TM updates have been paused due to the M17/M18 pistol fielding. Get what you need to know [HERE](#). The [M9 Pistol: No Cracks Please!](#) article tells you how to catch cracks early.

If you have an M240 and need an ammo can for the UH-60M, get the NSN [HERE](#).

The article, [Small Arms: How to Treat Your Weapon When It's Hot](#), has some tips on taking care of your weapon in the three (3) types of hot weather.

Finally, always [store only clean weapons in the arms room](#). Doing so will prevent corrosion and protect the weapons stored there.

# Soldier Support





# Commo/Electronics and Soldier Support: 2021 Year-in-Review

/ Published Jan. 20, 2022



Photo by [Cpl. Christian Garcia](#)

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# Tactical Vehicles





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# HMMWV: NSN for ABS Brake Fluid

/ Published Jan. 5, 2022



Photo by [Staff Sgt. Benjamin D Applebaum](#)

Warfighters, if you only need to order small amounts of DOT 5.1 brake fluid for your HMMWV's ABS system, you're in luck!

Now you can get DOT 5.1 brake fluid in quart-sized packaging with NSN 9150-01-694-1600.

DEVCOM advises using the supply system rather than local purchase to be sure you're getting quality fluids. Just remember that DOT 5.1 **isn't** compatible with silicone brake fluids. Also be sure to check your vehicle's TM for any related instructions.

By the way, you can still get a 55-gallon drum of DOT 5.1 brake fluid using NSN 9150-01-671-8052.

For more info or help on brake fluid or any other Army ground fuels and lubricants,

contact DEVCOM at:

[usarmy.detroit.devcom-gvsc.mbx.pol-help@army.mil](mailto:usarmy.detroit.devcom-gvsc.mbx.pol-help@army.mil)



# Tactical Vehicles: 2021 Year-in-Review

/ Published Jan. 21, 2022



Photo by [2nd Lt. Sydney Murkins](#)

**Note:** text spot-colored in blue is hyperlinked.

Maintenance leaders,

NSNs were the most frequent topics covered in 2021 for tactical vehicles and trailers. Corrosion prevention and the roll-out of Non-Combat Operations Maintenance Plan (NCOMP) were also hot topics this past year, as were articles that dealt with safety and accident prevention.

If you missed some of the articles, no worries! Here's a rundown of the various articles in each of these topic areas. Just select/click on the title to read it:

## Corrosion Articles

[Corrosion: Protect Hoses from Getting Hosed by the Sun](#)

[Corrosion: Use Cavity Wax to Stop It Dead in its Tracks](#)

[Corrosion: Cleaning Is Key to Prevention](#)

[Corrosion: TACOM Corrosion Website Has Helpful Info](#)

[Corrosion: New TM 43-0139 Is Hot off the Press](#)

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## **Non-Combat Operations Maintenance Plan (NCOMP) Articles**

[M1082, M1095 Trailers: NCOMP Is the New Plan](#)

[HEMTT, PLS: The New Plan Is NCOMP](#)

[HMMWV: Non-Combat Operations Maintenance Plan](#)

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## **NSN Articles**

[Up-Armored HMMWV: NSN for Flap Assembly](#)

[M915A5 Tractor Truck: New NSNs for Channel Lifts](#)

[JLTV: Front-Rear Differential NSN Updates](#)

[M967/M969 Fuel Tankers: Correct NSN for Rear Axle Assembly](#)

[M915A5 Tractor Truck: Get Right NSN for Fuel Line](#)

[M915A5 Tractor Truck: Right NSN for Taillight](#)

[M200A1 Trailer: NSN for Axle Assembly with ABS](#)

[M967A2, M969A3 Fuel Tankers: Where's the Gasket NSN?](#)

[Fuel Tankers: Correct NSN for Engine Junction Box Switch](#)

[M149A2 Trailer: Brake Hose Assembly NSN](#)

[M997A3 HMMWV: Fan Speed Knob NSN](#)

[M1062 Fuel Tanker: Correct Globe Valve NSN](#)

[HMMWV: NSN for ABS Brake Fluid](#)

[M969A3 Fuel Tanker: Order Correct Differential Gage with CAGE and PN](#)

[M1112 Water Trailer: Tire and Wheel Assembly NSN Updates](#)

[Maintenance Mgmt: NSNs for Motor Pool Safety Items](#)

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### **Safety-Related Articles**

[M149 Water Trailer: Don't Learn Safety by Accident!](#)

[HMMWV: Driver Training and Safety](#)

[Maintenance Mgmt: Ground Guiding Is Serious Business](#)

[HMMWV: AFES System TM Updates](#)

[M1101, M1102 Trailer: Better Test the Handbrakes](#)

[JLTV: Avoid High-Pressure Water Damage](#)



# MRAP: Learn Your Rollover Lesson

/ Published Jan. 21, 2022



Photo by [Spc. Gavriel Bar-Tzur](#)

*This article initially appeared in PS 771 (Feb 17), p. 11.*

Operators,

It's always better to avoid a rollover than to experience one. Remember these lessons learned before you start the day's mission.

- Perform rollover drill rehearsals with the gunner and crew prior to all missions.
- Keep all equipment properly stowed.
- Maintain an appropriate speed for road conditions.
- Make sure crewmembers wear seat belts or their gunner's restraint systems (GRS).
- Use a ground guide whenever tactical procedures permit.

- Unlock combat door locks in non-conflict situations. That allows rescuers to enter the vehicle quickly, if needed.
- When planning mission routes, remember that MRAP vehicles have **larger** profiles than Up-Armored HMMWVs. And they weight more too!

Also consider the mission's criticality and keep weather and terrain in mind.

Here's a couple HMMWV safety articles you might find interesting too :

[HMMWV: Taking Measures to Reduce the Risk of Rollover Accidents](#)

[HMMWV: Driver Training and Safety](#)



# HMMWV: Winter Tires

/ Published Jan. 26, 2022



Photo by [Jerome Aliotta](#)

Warfighters, you may have heard the Army is testing a new winter tire for HMMWVs: the KO2. KO2 winter tires have a three-peak mountain snowflake (3PMSF) rating, which means they're considered severe snow service-rated.

For now, the KO2 tires aren't authorized outside of the units that have been performing user testing.

Until KO2s are more widely available, units will continue to use tire chains to ensure cold-weather mobility.

Get a tire chain assembly kit with NSN 2540-58-001-1822.



