NCOs Lead the Charge with Gray Eagle UAVs

By Pablo Villa - NCO Journal

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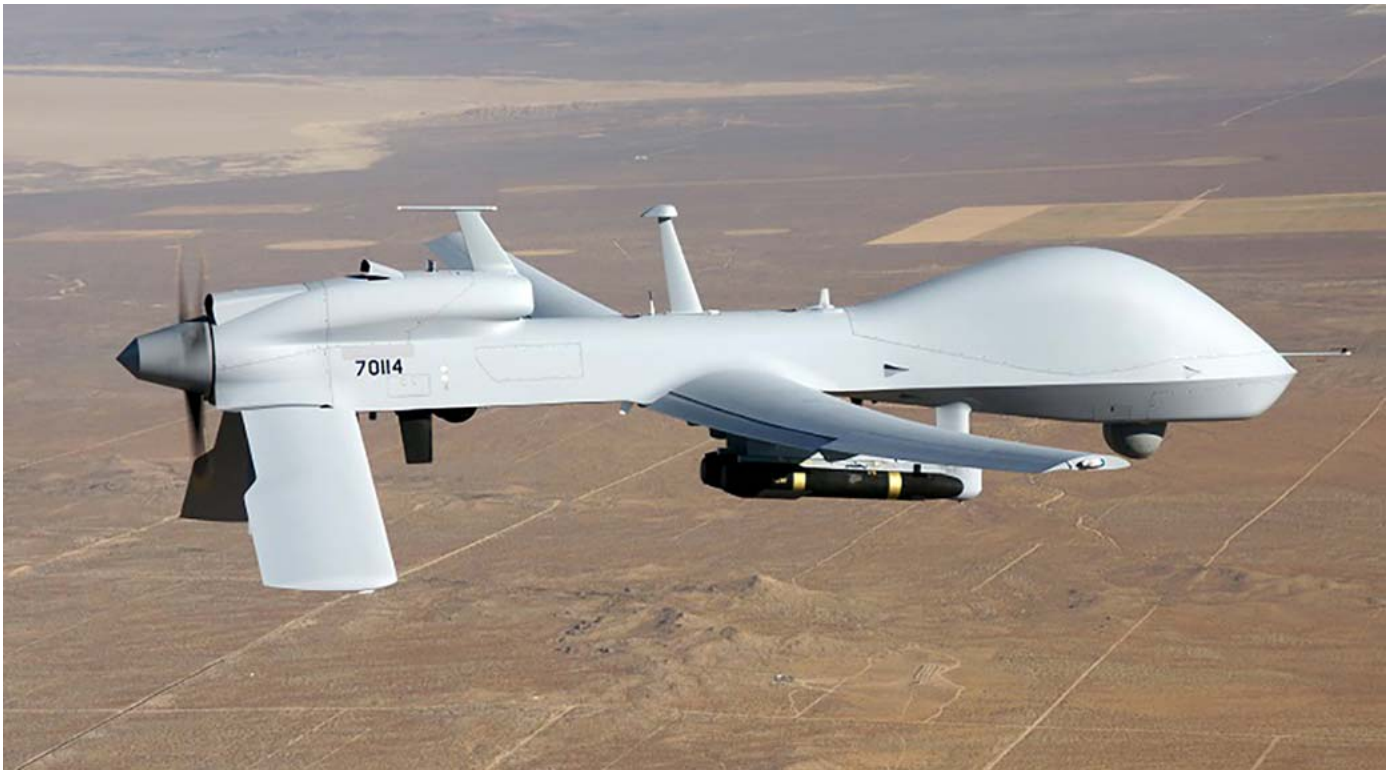
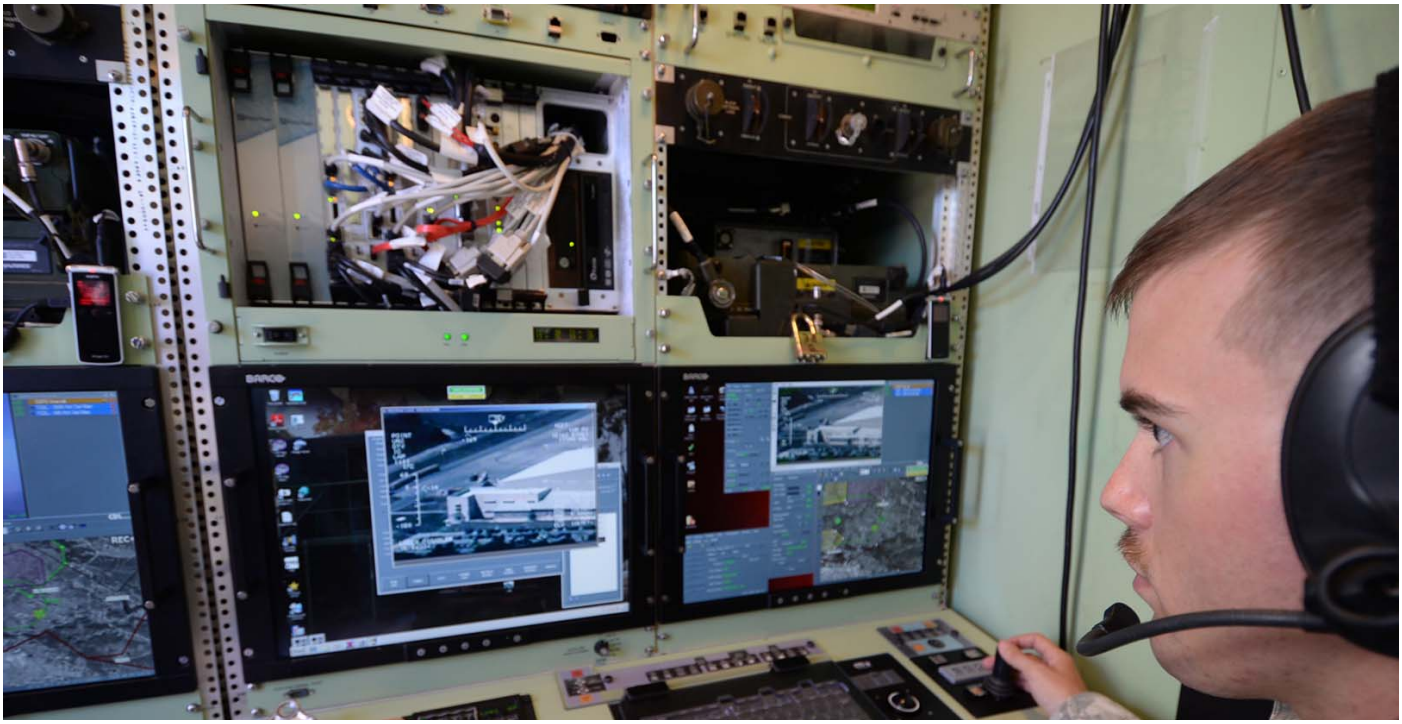


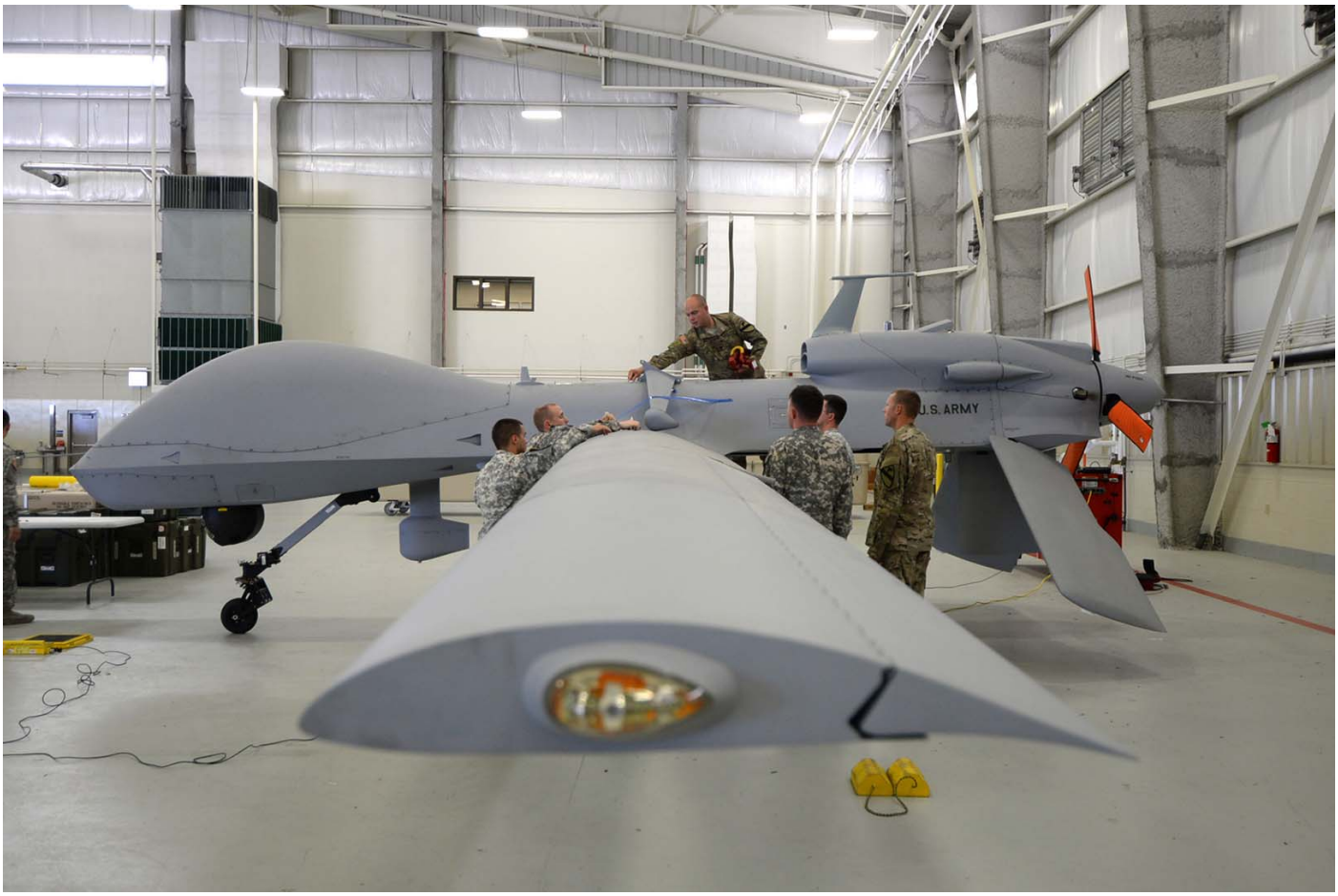
The MQ-1C Gray Eagle is the Army's largest unmanned aircraft system. (U.S. Army photo)

An NCO's mind fills with doubt and apprehension as he leads his Soldiers toward an area where they have been ambushed in the past. But now, instead of waiting for a report from a scout or a pilot flying ahead, he can talk directly to the NCO operating an MQ-1C Gray Eagle unmanned aerial vehicle and access the drone's feed on a laptop to see what awaits his unit up the road and around the corner.



Staff Sgt. Mark Mushen works as the payload operator during the flight of a Gray Eagle unmanned aerial vehicle, monitoring all of the drone's cameras and sensors from within a ground control station. (Photo by Meghan Portillo/NCO Journal)

"You can hear the relief in peoples' voices when you talk to them on the radio," said Staff Sgt. Mark Mushen, a 15W unmanned aerial vehicle operator in E Company, 1st Attack Reconnaissance Battalion, 227th Aviation Regiment, 1st Air Cavalry Brigade, 1st Cavalry Division at Fort Hood, Texas. "They feel more prepared for their mission because we are looking over them. I know those leaders are worried about their Soldiers, and it makes me feel good to be able to say 'I got you. You are going to be OK, and your Soldiers are going to be OK because I'm watching over you. I'm watching ahead of you. I'm watching behind you. I'm watching your right and your left. I got your back.'"



Sgt. Will Scott (top) and other unmanned aircraft systems repairers perform a preflight weight and balance check on a Gray Eagle UAV. (Photo by Meghan Portillo/NCO Journal)

Mushen has seen a lot of firsts when it comes to Gray Eagle UAVs, which are both maintained and operated by enlisted personnel. He was a graduate of the first Gray Eagle certification course at Fort Huachuca, Arizona, and was sent to the Army's first Gray Eagle unit at Fort Hood, the first unit to deploy with the new UAVs.

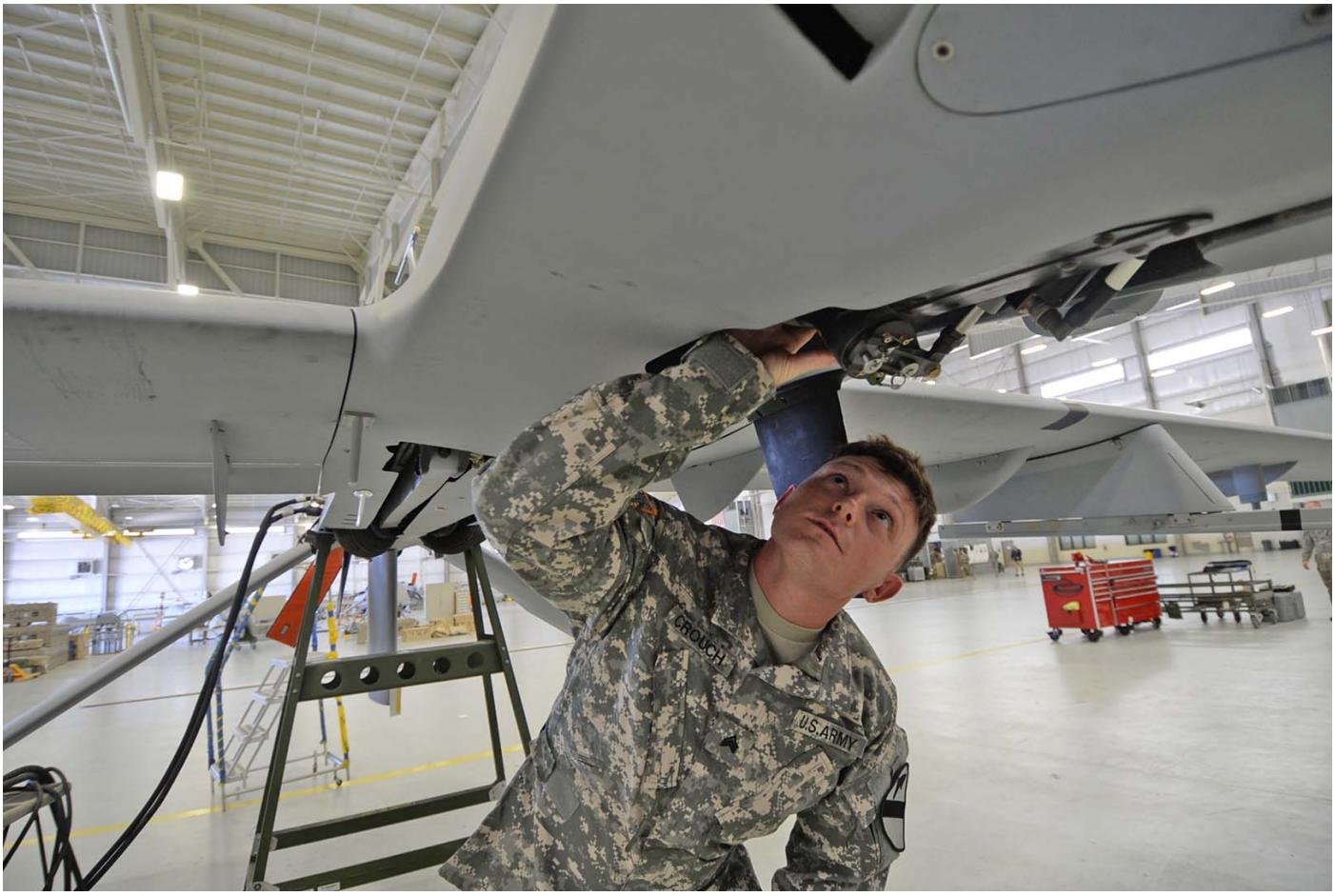
He has seen from the start how important NCOs are to the UAV program, and said teaching junior Soldiers to work with such valuable and high-tech equipment comes with its own set of rewards and challenges.

"Junior enlisted often work on aircraft, but it is uncommon for junior enlisted to be involved in the operation of aircraft like they are here. So as NCOs, we have to focus on keeping our Soldiers trained on flying this system as well as on other Army doctrine to make sure they master the basic soldiering skills," Mushen said. "There is so much going on. As an operator, you've got to teach them how things on the ground are working, how convoys are going to move. You've got to teach them how to communicate properly on the radios. The main mission of an NCO is to train

Soldiers, and we are training Soldiers constantly."

Utilizing enlisted Soldiers to operate and maintain the Gray Eagles is saving the Army a lot of money, Mushen said, and the NCOs training them are leading the Army into a new era.

“Imagine the whole Army is a boat, all heading in the same direction. I feel like I’m on the front of the boat, among the first to see new territory,” Mushen said. “It’s good to be part of something so new and technologically advanced. I feel like I am ahead of the game.”

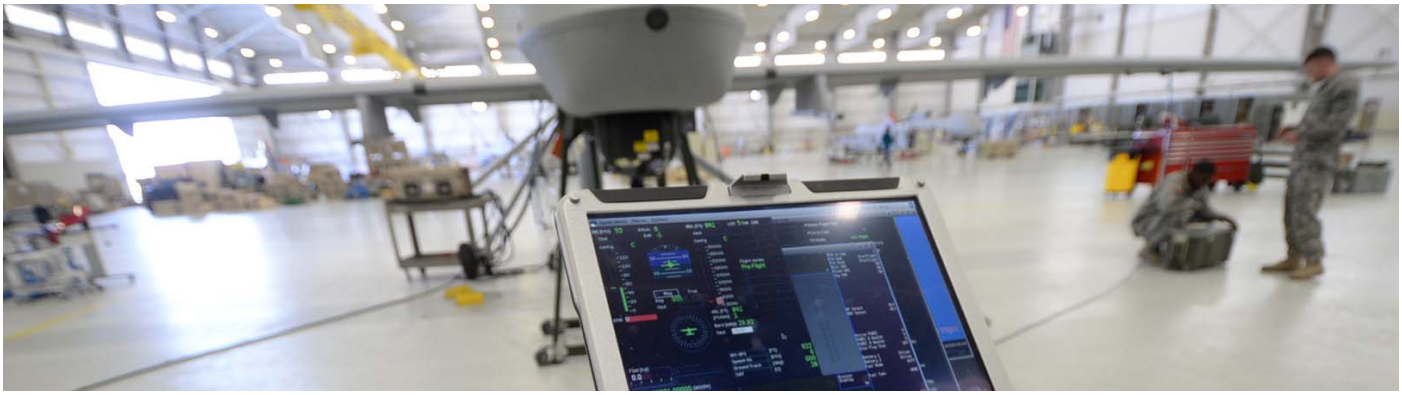


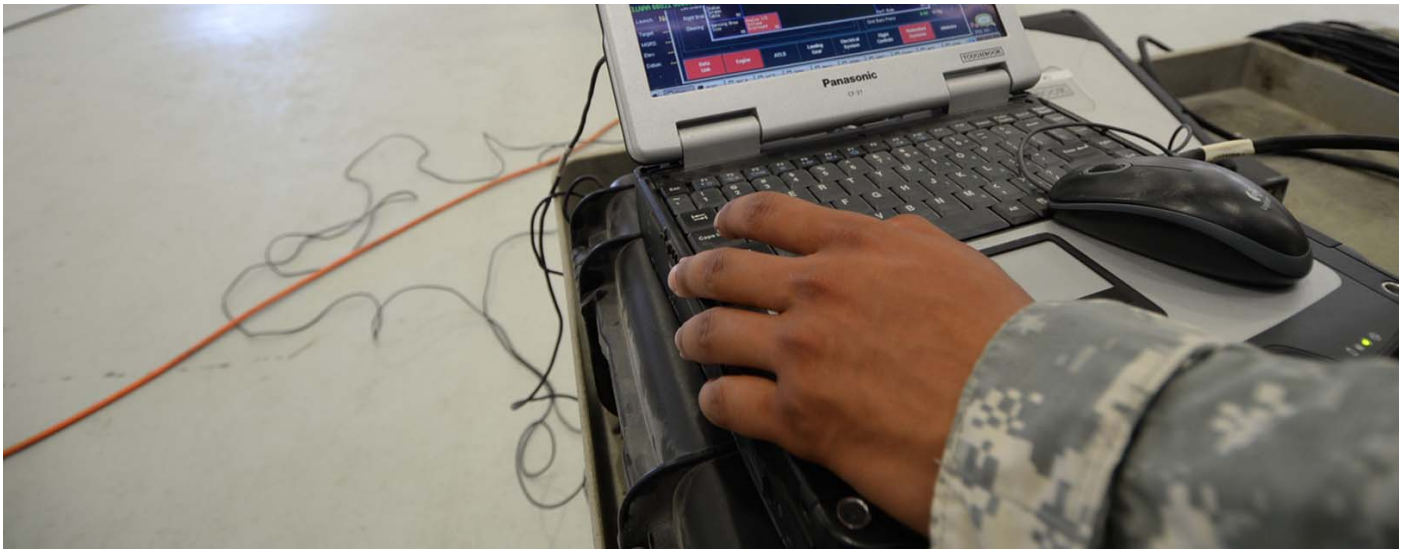
Sgt. Joseph Crouch, an unmanned aircraft systems repairer, performs preflight operational checks on a Gray Eagle UAV’s landing gear. (Photo by Meghan Portillo/NCO Journal)

Maintenance and repair

The Gray Eagles are used for reconnaissance as well as attack missions. The UAVs are equipped to carry up to four Hellfire missiles, and the drone’s lightweight composite body, small diesel engine and 56-foot wingspan allow it to stay up for approximately 16 hours, depending on the weight of its load.

“These are worth between $15 million and $18 million, and the payload itself – the camera on the front with all of the laser designators – is worth $8 million to $10 million,” Mushen said. “There is so much under that hood. You would be bedazzled at all of the computers and antennae in there.”



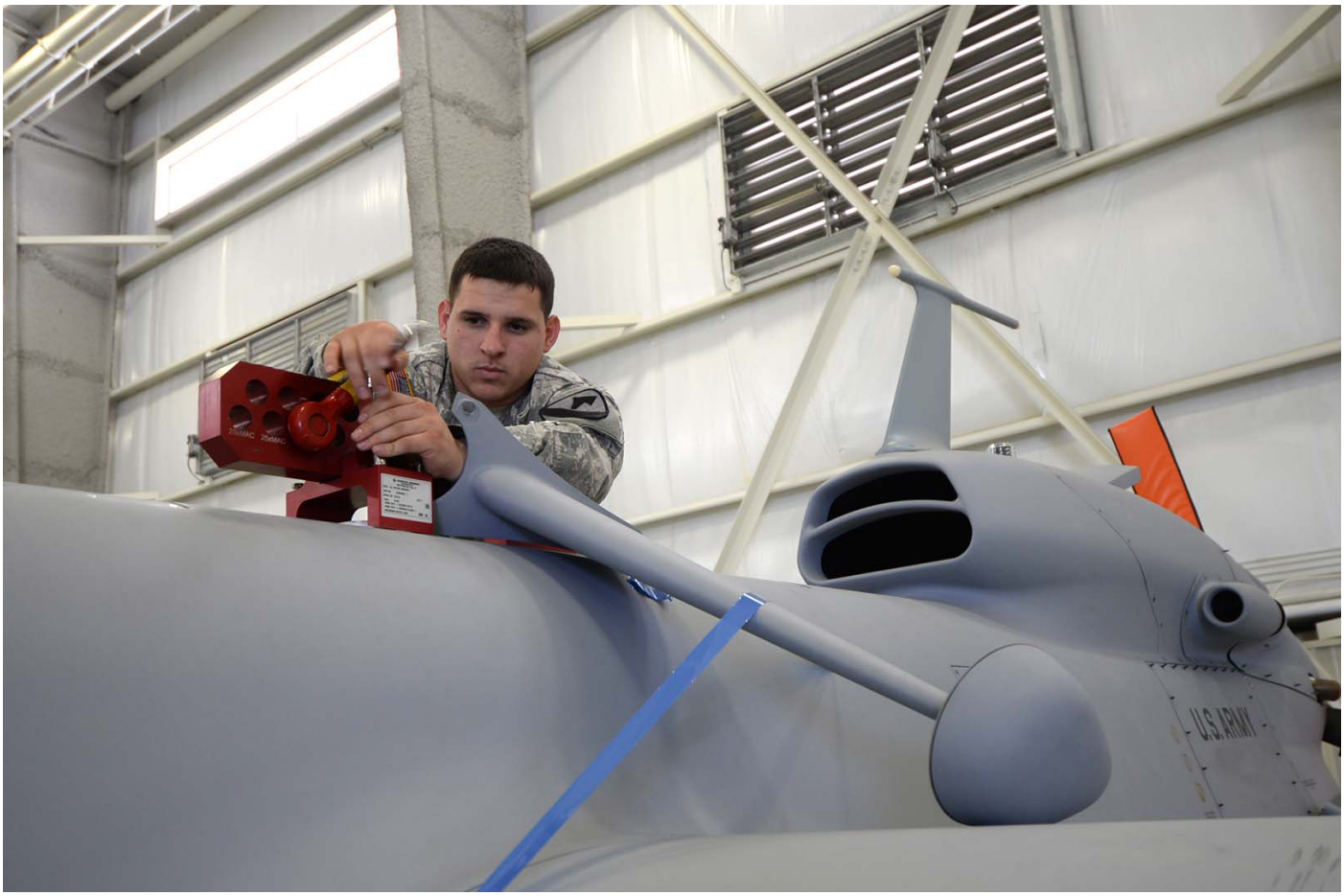


NCOs and junior enlisted connect a portable maintenance aid, or PMA, to the Gray Eagle UAVs to monitor preflight operational checks. (Photo by Meghan Portillo/NCO Journal)

Sgt. Juan Trinidad, a 15E unmanned aircraft systems repairer, also in E Company, said the Gray Eagle is much more complex than the better-known R-Q7 Shadow UAV, and NCOs have their hands full teaching Soldiers to maintain the system.

Before a flight, maintainers charge batteries, check tires and fuel levels, run tests to ensure the landing gear is functioning properly and weigh and balance the aircraft. During a flight, they may need to fix a UAV's link with the ground control station. Should the link be lost, the UAV is programmed to loiter in a safe space until it is fixed. It will default to a certain speed and altitude, then fly along predetermined points until the link is re-established.

"Our NCOs are good at their jobs, and we are responsible for training and supervising the junior enlisted who also work on the UAVs," Trinidad said. "We always have an experienced guy working with a new guy. You let them do as much as they can so they can learn, and we have multiple checks to make sure nothing falls through the cracks."



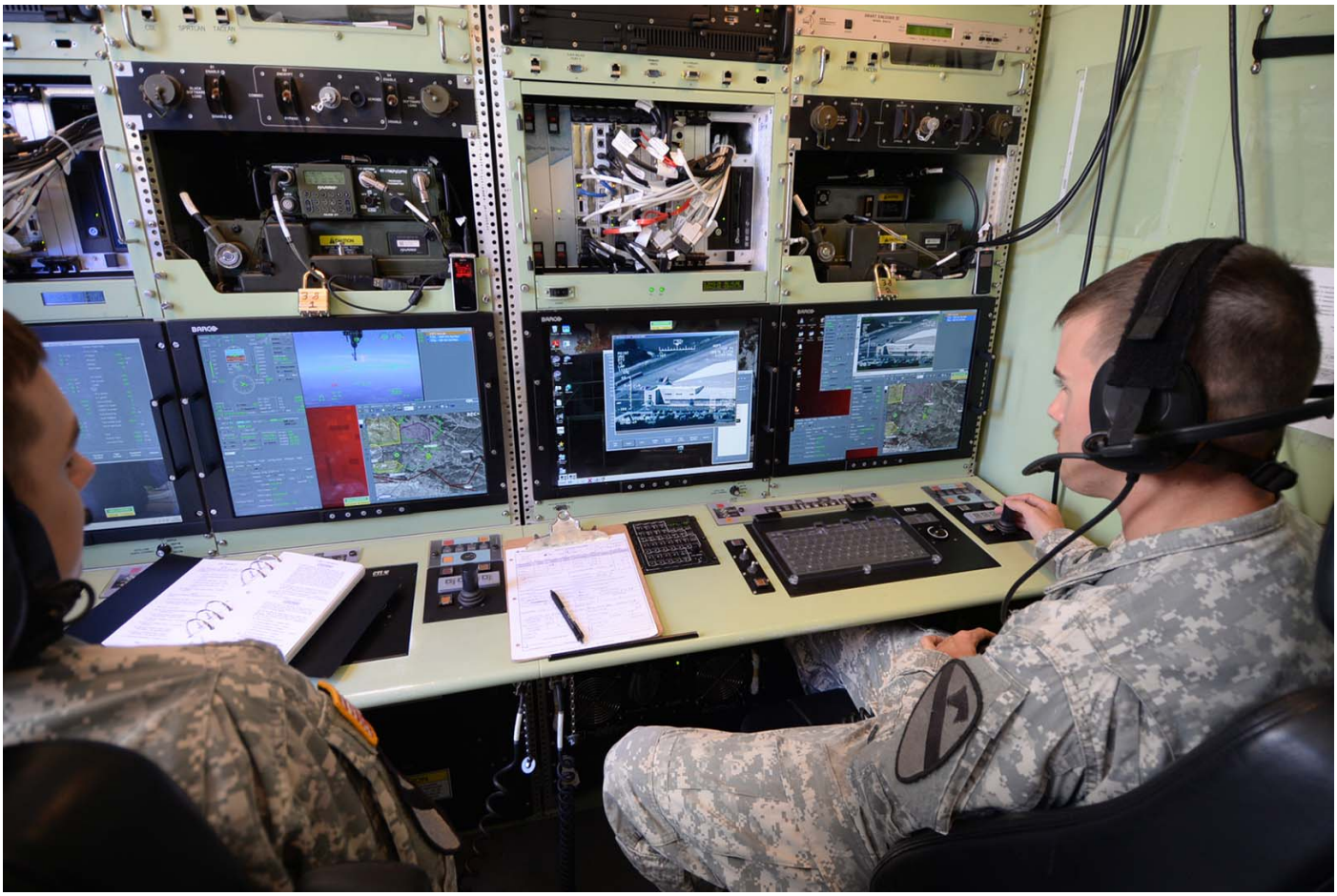
Spc. Michael Chartrand, a 15E unmanned aircraft systems repairer, performs a weight and balance check on a Gray Eagle unmanned aerial vehicle to get the drone ready to fly. (Photo by Meghan Portillo/NCO Journal)

Trinidad said his company is always flying and training. Weather permitting, the unit has Gray Eagles in the air every day. Lasers are used in the place of Hellfires, but everything else is done just as it would be during a deployment. Once the company is ready to move one of the unit's other Gray Eagles, the maintainers break it down and pack it into a "coffin" for shipment, then rebuild it on location.

"I love what I do. I like the mechanics of it," Trinidad said. "I take pride in learning my job, because as an NCO, you have to be an expert in what you do. It's how you lead. It's how you train your Soldiers and prep them for deployment. Here, there is no room for error."

Flying the Gray Eagle

UAV operators follow almost all of the same guidelines as pilots, and even wear aircrew wings on their uniforms, but their daily work has a much different view. The ground control station is a small brown box filled with buttons, dials and screens, big enough to fit only three people. The payload – or camera – operator sits on the left, and the aircraft operator sits on the right, with barely enough room for an instructor to stand behind them.

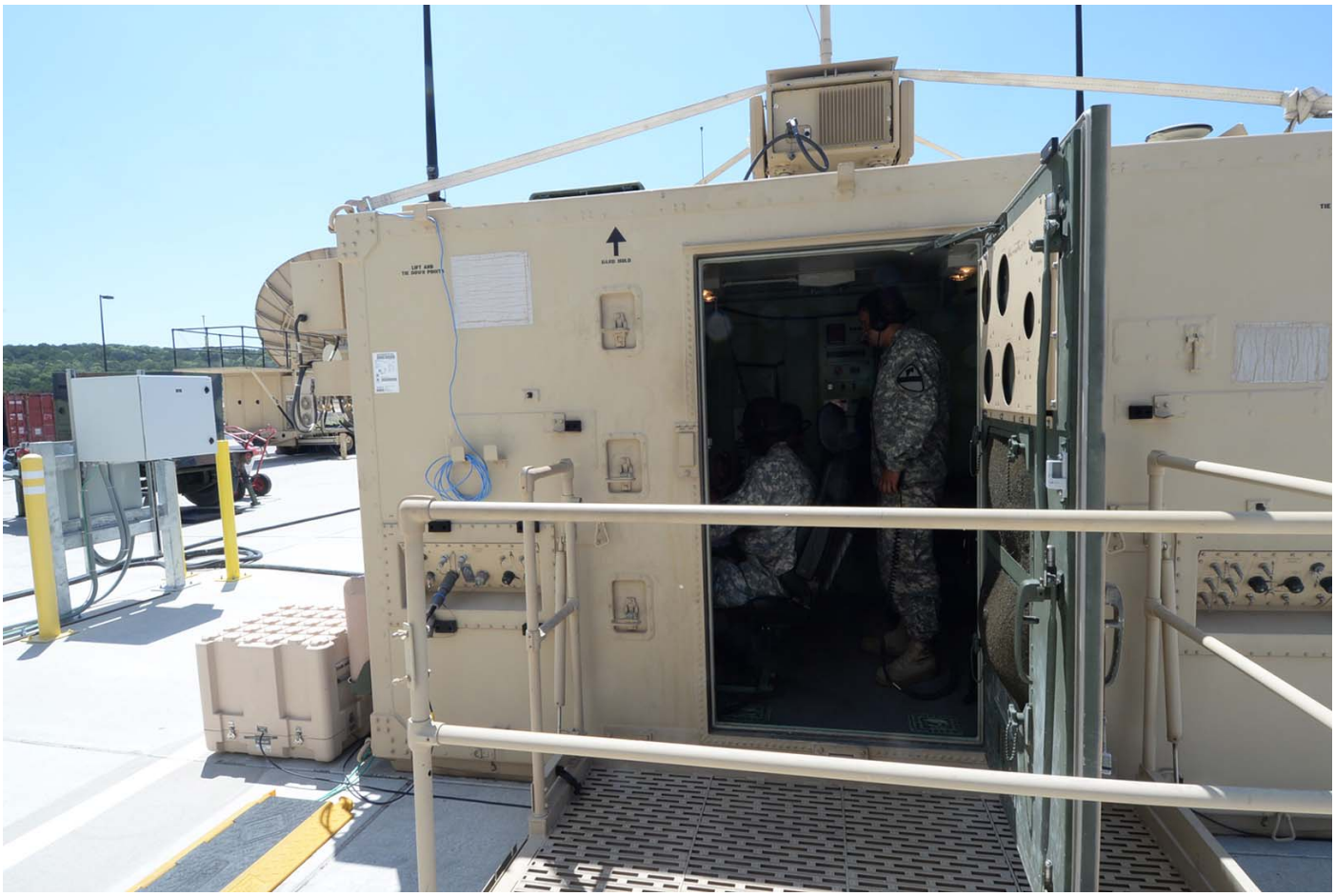


Gray Eagle UAVs are operated from within a ground control station. Spc. Zachary Zimmerman, left, works as the aircraft operator, while Staff Sgt. Mark Mushen controls the cameras and sensors as the payload operator. (Photo by Meghan Portillo/NCO Journal)

The aircraft operator controls the autopilot, specifying the altitude, speed, location and pattern in which the drone will fly, while the payload operator monitors the cameras and the UAV's sensors. The mission coordinator, also a UAV operator, works in the main tent or building, checking the weather and gathering other pertinent information. The operators may not turn a joystick or feel the wind as the aircraft turns, Mushen said, but in many ways, these differences are advantages.

"Apache pilots are focused on so many different things at once," he said. "I think we are more available to react to the situation at hand. It's not as much of a sensory overload as it can be for an Apache pilot, and we are still right there listening to the people on the ground, hearing what is going on."

Plus, AH-64 Apaches are loud.



Gray Eagle UAVs are operated from within a ground control station. The small room has space enough for only three people. The payload operator sits on the left and the aircraft operator sits on the right, with barely enough room for an instructor to stand behind them. (Photo by Meghan Portillo/NCO Journal)

“We will be anywhere from 10 thousand to 25 thousand feet, and they won’t hear us. They won’t know the Gray Eagle is there,” Mushen said. “The only way you would be able to see us is if you are looking at exactly the right spot in the sky. Then you might barely see us, but only in perfect conditions. If we need to engage a target, they don’t see us coming. They don’t know how long we have been there or how long we can stay there, which is a long time.”

The Gray Eagle’s capabilities give a unit the upper hand, Mushen said. Operators are able to cut out any middle men and speak directly with the Soldiers they see on their screen. They can tell them what is happening right then and there, and even show them what the Gray Eagle sees with the help of the one system remote video terminal, or OSRVT.

The OSRVT allows an individual, usually a team or convoy leader, to view a Gray Eagle’s camera feed on a special laptop. Or, on missions when Gray Eagles and new models of the Apache are flying together, the OSRVT enables an Apache pilot to take control of the UAV camera. Pilots work closely with the operators in the ground control station so that they don’t waste time and fuel trying to acquire a target, and don’t put themselves in danger while doing so.

Lines from the ground control station can also be connected to a hub granting access to anyone with the credentials to log in. Special software picks up feeds not only from Gray Eagles, but also from UAVs flown by other branches of the military. Any commander wanting to monitor a particular mission, for example, can just click on a screen and view any feed in real time. Often on a deployment, Mushen said, there are so many UAVs in the air that you can see the entire battle space at any given time.

“While we are overseas, there are really no breaks,” he said. “If an aircraft is in working order and we are able to put it in the air, it is always in the air, because we’re a hot commodity. Everybody wants to have a UAV, and then when you tell them it can be up for hours, not be seen and also be armed and provide over-watch to any sort of unit, then we are like candy. Everybody wants us.”

An expanding field

Both Trinidad and Mushen jumped at the chance to train on the Gray Eagle UAV.

“When I talked to the recruiter, he told me this is something new,” Trinidad said. “I started on Shadow, but then I heard about the Gray Eagle. When I had the chance to go back to Fort Huachuca for that certification, I definitely didn’t hesitate.”