



SGT MARIA NOYOLA, USMC



Above: A power line Marine with VMFA-232 marshals an F/A-18C Hornet onto the flight line during a MAG-11 training exercise at MCAS Miramar, Calif., Feb. 1, 2019. (Photo by Cpl Nadia Stark, USMC)

Left: Cpl Bryce W. Potter, left, and Cpl Charles A. Hutchinson Jr., fixed-wing aircraft mechanics with VMFA-232, conduct crew supervisor pass-down during a shift changeover as part of Exercise Red Flag-Alaska at Eielson Air Force Base, Alaska, Oct. 9, 2018.

“FIX, FLY, FIGHT”

During Time of Transition, VMFA-232 Maintainers Keep F/A-18 Mission Ready

By Sara W. Bock

When Major Patrick Mullen pulls on his G-suit and dons his helmet and oxygen mask before climbing into the cockpit of an F/A-18C Hornet to prepare for takeoff, he does so with the utmost confidence that the aircraft is ready for a safe flight. He credits the often-unsung heroes of Marine aviation—aircraft maintainers—for allowing him to focus fully on the mission at hand.

Whether there’s a routine training flight or a combat sortie ahead of him, Mullen says he’s 100 percent comfortable signing for an aircraft that the maintenance department has declared “good to go.”

Aircraft maintenance, primarily a behind-the-scenes effort, requires in-depth systems knowledge and meticulous attention to detail and is the linchpin of the 3rd Marine Aircraft

Wing’s straightforward motto: “Fix, Fly, Fight.”

The venerable legacy Hornet, now an out-of-production aircraft slated to be replaced fleet-wide by the fifth-generation F-35B/C Lightning II over the next decade, presents a number of maintenance challenges for the Marines tasked with keeping them in the air. But Mullen says he’s “blown away” by the ability of the enlisted maintainers, from

LCpl Andrew Demars, an airframe mechanic with the "Red Devils," works on an F/A-18C Hornet during scheduled phase maintenance during a UDP at MCAS Iwakuni, Japan, in June 2017. When aircraft go through phase maintenance, mechanics are able to perform in-depth maintenance to enhance the welfare of the aircraft.



LCPL MASON ROY, USMC



SARA W. BOCK

Left: Cpl Spencer Ritchie, left, and Cpl Tyler Guy, electrical systems technicians with VMFA-232, test the electrical system of an F/A-18 outside the squadron's hangar at MCAS Miramar, Calif., Nov. 22, 2019.

the youngest Marines to the most senior, to troubleshoot and fix even the most complex of issues. They are, he says, the greatest asset to Marine Fighter Attack Squadron (VMFA) 232, one of four active component F/A-18 squadrons that belong to Marine Aircraft Group 11, 3rd Marine Aircraft Wing.

“At the end of the day, even though parts and everything else can be limited, the resource that is absolutely irreplaceable and is the most valuable thing is the Marines downstairs,” said Mullen of the maintainers, who specialize in a wide range of subfields like avionics and ordnance.

As the quality assurance officer for VMFA-232, Mullen spends his non-flying hours working his ground



LCPL CLARE MCINTIRE, USMC

Left: An F/A-18C Hornet with VMFA-232 flies in a formation over Southern California, May 24, 2018. The Red Devils are proud of their distinction as the Corps' oldest active fighter squadron.



SARA W. BOCK



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Above: GySgt Brandon McDowell, VMFA-232 power line chief, secures a panel on an F/A-18C on the flight line at MCAS Miramar, Calif., Nov. 22, 2019.

Left: Maj Patrick Mullen, an F/A-18 pilot and the quality assurance officer for VMFA-232, says that working in the maintenance department has given him a greater appreciation for the Marines who work behind the scenes to keep the squadron's Hornets flying.

job—standard practice for Marine aviators—in the San Diego-based squadron's maintenance department, which occupies the ground floor of a sizable hangar on the flight line at Marine Corps Air Station Miramar, Calif. While his counterparts occupy various billets in other departments, such as operations or safety, Mullen's position has provided him with a better understanding of the crucial role of maintenance to the squadron's operational readiness, as well as the strenuous work it entails. The seasoned pilot says he feels more confident than ever in the abilities of the approximately 200 Marines who are responsible for keeping the squadron's aging airframes mission capable.

Having functioning aircraft is not only essential to the mission of the F/A-18 platform of providing supporting arms coordination, conducting reconnaissance and destroying surface targets and enemy aircraft, but also to keeping up both the skill currency of the pilots and the overall morale within the squadron itself.

The oldest active fighter squadron

in the Marine Corps, VMFA-232, better known as the "Red Devils," transitioned from the F-4 Phantom to the F/A-18 Hornet in 1989, and in 2010, the Red Devils were the first F/A-18 squadron to be land-based in Afghanistan in support of Operation Enduring Freedom. According to the 2019 Marine Corps Aviation Plan, the squadron is scheduled to be the last of

VMFA-232 maintainers conduct a preflight function check of an F/A-18C Hornet at MCAS Miramar, Calif., Feb. 1, 2019.



CPL NADIA STARK, USMC

the active component Hornet squadrons to transition to the F-35 beginning in fiscal year 2028.

As he sat down in the squadron's hangar with *Leatherneck* in November 2019, power line chief Gunnery Sergeant Brandon McDowell pointed to a wooden plaque on the wall bearing the inscription "VMFA-232: First to Fight, Last to Leave."

"We take pride in that," said McDowell of the squadron's motto. "It's fitting that we'll be the last to transition."

And while some might presume that

being tasked with maintaining older aircraft that have met or exceeded their intended service life—which is measured in flight hours—is particularly challenging, McDowell sees it differently.

"When you think about it, how old they are, that means they're reliable," he said of the Hornets, some of which have been flying for 30 years. "Because it's been around for so long, there's Marines that have worked on this aircraft that have seen it all. It's very rare that a new challenge appears. You can quickly train your junior Marines if they haven't

seen it yet, and because [the aircraft] are older, you'll get different challenges more frequently."

The frequency in which repairs are needed on the aircraft, added McDowell, gives newer maintainers a considerable amount of experience over a short period of time. It's a manifestation of the "training is continuous" philosophy the Deputy Commandant for Aviation, Lieutenant General Steven R. Rudder, emphasized in the Corps' most recent aviation plan.

"Even as a gunnery sergeant, I'm still learning new things every day," said McDowell. "They're constantly updating publications and making things more efficient."

During his time as an F/A-18 maintainer, McDowell has seen numerous changes in maintenance "best practices" and the elimination of redundancies in standard procedures.

New maintainers leave the schoolhouse and arrive at their first fleet squadron with a basic knowledge of both general and F/A-18-specific maintenance, but McDowell emphasizes that the "on-the-job" training they receive once they arrive at the squadron is crucial and, he says, it "never stops."

"There are various billets within

Sgt Zachary Jackson, an airframe mechanic with VMFA-232, conducts maintenance on an F/A-18C Hornet during a UDP at MCAS Iwakuni, Japan, in June 2017.



LCPL MASON ROY, USMC

the squadron and within the [military occupational specialty], and you'll be trained for the next billet in whatever you're doing," McDowell said.

With billets that range from equipment technicians and airframe mechanics to avionics technicians and seat shop Marines, who conduct daily inspections and repairs of the fighter jet's ejection seats, the maintenance department presents a management challenge for those who occupy its leadership positions.

"It can be done effectively just by knowing what capabilities you have in each shop at any given time based on personnel and qualifications, and then if you can effectively manage those and effectively allocate and prioritize them, it can be infinitely more effective," said Mullen. "The end goal is to have those airplanes flying as much as possible and as effectively as possible."

Each day the squadron's maintenance department starts with a meeting led by maintenance control that brings together leaders from all of the different divisions or specialties. On the agenda are the priorities for that specific day, as well as each division's "plan of attack," said Mullen. Each division then gets to work on executing those daily priorities.

"If you walk downstairs, it can seem kind of chaotic because you have Marines, they're all doing very different jobs, but all driving towards that same goal of getting the airplanes ready," Mullen said.



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Above: Cpl Tyler Guy, an electrical systems technician with VMFA-232, performs routine checks on an aircraft's systems at MCAS Miramar, Calif., Nov. 22, 2019.

Left: Cpl Spencer Ritchie works to ensure that an F/A-18C Hornet has a fully functioning electrical system before its next scheduled flight.

It's all about balancing both short-term and long-range plans with the inevitable reaction to unexpected issues as they arise, he added.

"With older airplanes sometimes your plans can kind of get dashed at the last minute, but in general, we always have a plan of attack and we're always reviewing it and assessing it," said Mullen.

Typically the squadron runs two 10-hour maintenance shifts each day, with occasional adjustments to 24-hour around-the-clock maintenance if the unit is gearing up for a training event, operation or deployment.

A maintainer with VMFA-232 fastens panels on an F/A-18C Hornet prior to a February 2019 training exercise at MCAS Miramar, Calif.



CPL NADIA STARK, USMC

In September 2019, the Red Devils returned to MCAS Miramar after participating in a six-month unit deployment program (UDP) in Japan. Whether deployed aboard a carrier or land-based, McDowell says that from a maintenance perspective, the work is no different from being at home.

“We train like we fight. It really doesn’t matter where we go. We operate the same,” said McDowell. “It was a successful deployment, we got to do various training with different countries, and we actually made it back on schedule. All of our aircraft made it back exactly when they were supposed to—no issues. [The Marines] are just dedicated to that type of maintenance.”

Mullen agreed, saying that other than adjusting to the demands and challenges associated with being away from home, the actual work the maintainers conduct while deployed remains the same.

“Overall from a maintenance perspective, we just pick up, move, and essentially execute the same tasks elsewhere that we do here,” said Mullen.

Whether forward deployed or back at MCAS Miramar, safety is of the utmost concern, said both Mullen and McDowell. And while the safety of the pilots who fly the aircraft is undoubtedly the overarching goal of maintenance, the safety of the maintainers themselves is equally vital.

While he wasn’t permitted to disclose the exact ratio of maintenance man-

hours to flight hours, Mullen emphasized that a full shift of maintenance far exceeds the number of hours the aircraft actually spend in flight.

“That is a huge thing that’s a concern,” said Mullen. “Really my primary role as the quality assurance officer is making sure that maintenance is done safely.”

As a precaution against injuries, maintainers are required to wear cranial helmets when near the aircraft, as well



LCpl Jesse Schmitt, a power line mechanic with VMFA-232, signals to an F/A-18C Hornet pilot that he is clear to start his engines at Japan Air Self-Defense Force Hyakuri Air Base in July 2017. (Photo by LCpl Mason Roy, USMC)

LCpl Dustin Delgado, a fixed-wing aircraft mechanic with VMFA-232, prepares to launch an F/A-18C Hornet during preflight checks at Anderson AFB, Guam, June 19, 2019. VMFA-232 increases operational readiness by training in new environments through the Aviation Training Relocation Program.



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as proper hearing protection.

“At the end of a 10-hour shift, we can all forget those things. We always have Marines that are walking around making sure that stuff is done right,” said Mullen. “Similar to aviation, we follow procedures, we follow checklists ... to make sure to keep you on track maybe when you’re tired or you’ve been doing things for a long time, to make sure that you are doing things right and by the book and safely.”

Within the department, Marines selected for the position of Collateral Duty Inspector (CDI) observe and oversee all maintenance and are responsible for “signing off” on the aircraft after the work is complete. Many are young Marines who have only been in the Corps for a few years, said Mullen, who is particularly impressed by their capacity to take on a substantial amount of responsibility.

As Marine aviation continues to move toward modernization while

remaining ready to support the warfighter in every clime and place, the 2019 Aviation Plan underscores “supporting the maintainer” as one of the Deputy Commandant for Aviation’s key priorities.

“Strong maintenance departments are able to generate materially sound, healthy aircraft in the right numbers to enable our aircrews to be successful in training and in combat, and set conditions for ‘operations and maintenance balance,’ ” reads the Aviation Plan. “Maintenance departments serve as the ‘center of gravity’ of our flying squadrons and maintenance capacity ultimately determines our ability to provide sustainable readiness in support of operational requirements.”

Mullen has seen this increased emphasis on maintenance support in action at VMFA-232.

“That has been a focal point since I got to this unit,” Mullen said, adding that that squadron’s commanding

officer, Lieutenant Colonel Mark Bortnem, has made it very clear that the maintainers are the squadron’s most important resource and should be prioritized as such.

With a planned “sunset” of 2030, the F/A-18—considered to be the Corps’ primary bridging platform to the F-35B/C—will continue to be an essential part of Marine aviation for the next decade.

And while the transition will mean the eventual end of the Hornet community in the Marine Corps, McDowell says he and the other maintainers are just focused on the day-to-day and doing their job to the best of their ability. Some will transition to the F-35 in the coming years, while others may end up working on other platforms.

“When we join, we’re first told ‘needs of the Marine Corps,’ ” McDowell said when asked about the future. “We’ll be placed wherever is best for the Marine Corps.”

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