FRCE inducts first CH-53K King Stallion for maintenance

Marine Master Sgt. Richard Hughes, maintenance chief at Fleet Readiness Center East (FRCE), prepares to secure the rotor blades of a CH-53K King Stallion helicopter that arrived at the depot April 4 for routine maintenance. FRCE inducted the aircraft April 17 as the first of 14 planned for induction as part of the Age Exploration Program, Depot (AEPD); it is the first King Stallion ever inducted for depot-level maintenance. (U.S. Navy photo)
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MARINE CORPS AIR STATION CHERRY POINT, N.C. – Fleet Readiness Center East (FRCE) opened a new chapter in its support of naval aviation's heavy lift mission with the induction of a CH-53K King Stallion April 17, marking the first time the platform has ever been inducted for depot-level maintenance.

The aircraft arrived April 4 from Marine Heavy Helicopter Squadron 461 (HMH-461) onboard Marine Corps Air Station New

River, and is the first of 14 CH-53K helicopters that will undergo routine maintenance at FRCE as part of the Age Exploration Program, Depot (AEPD). AEPD collects information regarding the aircraft's condition through controlled testing and analysis and assists in the development of effective and efficient maintenance schedule for new aircraft.

FRCE Commanding Officer Capt. Randy J. Berti said the induction of the CH-53K – also known as the "Kilo" – allows the command to continue its long history of supporting the H-53 community while expanding its role in sustaining the new heavy lift platform.

"For many years, FRC East has provided the heavy lift community with world-class service in support of sustainment," Berti said. "As aviation technology continues to evolve, we're excited to add the CH-53K King Stallion to our portfolio. This first induction as part of the Age Exploration Program will allow us to learn more about the aircraft and refine the processes and procedures that will help us continue our critical role in driving flight line readiness for our nation's warfighters."

The CH-53K King Stallion is the U.S. Marine Corps' heavy-lift replacement for the venerated CH-53E Super Stallion. The King Stallion is the largest and most powerful helicopter in the U.S. Department of Defense and will expand the fleet's ability to move more material, faster throughout the area of responsibility. The CH-53K is designed to carry 27,000 pounds at a mission radius of 110 nautical miles in U.S. Navy high/hot environments, which is almost triple the baseline of the CH-53E. Its maximum external lift capability is 36,000 pounds. It is also designed to have a smaller shipboard footprint, lower operating costs per aircraft, and fewer direct maintenance man hours per flight hour.

The AEPD induction arrives following years of coordination between FRCE, the Fleet Support Team, the Naval Air Systems

Command H-53 Heavy Lift Helicopters Program Office (PMA-261) and the Marines who fly the Kilo.

“This first CH-53K induction into depot maintenance signifies the maturation of the platform and the readiness of our sustainment enterprise,” said PMA-261 Assistant Program Manager for Logistics Lt. Col. Matthew Russell. “The exceptional collaboration between PMA-261, FRC East, Marine Aircraft Group 29, and the Fleet Support Team, which began over three years ago, has established a foundation for long-term support of the King Stallion’s heavy-lift capability.”

FRCE H-53 Branch Head Michael Paul said the arrival of the CH-53K, in many ways, represents a new horizon – both for the rotary-wing program at the depot and for the fleet.

“Simply put, it’s our future. The legacy platform, the CH-53E, has been there for 40-plus years and it’s slowly being phased out,” he explained. “The MH-53E, the last few are in the plant right now – we have four left – and then that will be the end of our planned maintenance for the MH community, the Navy version of the aircraft. The CH variant flown by the Marine Corps is shrinking its footprint here, with just about five inductions per year.

“And so the future, not only for FRC East but also for the fleet, is the K model program. It’s the newest generation helicopter out there, and so that means that this is the future for the next 20, 30 or 40 years, for the product team here.”

Jeff Warren, CH-53K capability establishment lead at FRCE, said the Kilo’s arrival at the depot also represents the future of the platform’s sustainment schedule. The 14 inductions under AEPD will help determine the aircraft’s planned maintenance interval (PMI) schedule. A planned maintenance interval is a period of time prescribed for the execution of a maintenance event.

“This aircraft’s induction corresponds with a specific number of flight hours, which has been set as a mark on the wall,” he said. “It will be inspected to see if there’s any major structural damage, along with the 13 more behind it. Their condition is going to dictate whether future aircraft PMI events need to happen at this number of flight hours or, if we’re not seeing any major structural issues or overall fatigue of the aircraft, whether the PMI event can be bumped out by an additional number of flight hours. It’s setting a precedent of what the future schedule will look like for depot-level maintenance.”

Warren said the depot’s findings during AEPD will have implications that stretch down to all levels of maintenance, from the heavy maintenance, repair and overhaul at the depot level (D-level) to the maintenance performed at the organizational level (O-level) by the squadrons flying the aircraft, and the intermediate level (I-level) performed by the maintenance and logistics squadrons in between.

“The squadron’s already doing those O-level maintenance actions, but during AEPD, we’re performing O-level and I-level maintenance in conjunction with the depot level. We’re verifying processes and procedures,” Warren said. “This allows us to critique and refine the O- and I-level technical data, to red-line it, effectively, and then develop the depot-level tech data to assist with future depot requirements, because FRC East is the first-ever to conduct depot-level maintenance on the CH-53K.”

Paul said his team on the H-53 line will perform around 800 inspections on the aircraft in order to properly assess its condition, a process that will take almost half of the planned AEPD cycle time.

“We developed a generic template for the inspect and repair phase using the CH-53E and MH-53 as a starting point, assuming the work on the Kilo will be like and similar,” Paul

explained. “However, this is the first time any K model aircraft will be disassembled and inspected at this level, and there are differences. It’s computer-based, sensor-based, fly-by-wire, with more composite.

“We have some ideas of what we’re going to find, but there are going to be some areas we’re looking into that nobody has inspected before. We are physically putting our eyes on everything: framing, composite, flight controls, every wiring harness, all the wiring … everything has to be looked at,” Paul continued. “We’re going to conduct these 800-plus inspections, gather the details of any discrepancies we find, correct those we know how to correct, and refer to engineering for solutions the ones we don’t have any knowledge of. Based on their solutions, we will implement those changes to correct those discrepancies, as well. There are a lot of unknowns going in, but it’s an exciting time for the group here.”

Current labor estimates for the AEPD process are based on the PMI process for the CH-53E and MH-53E, and only include work on the airframe itself and not on components that will eventually get routed to back shops, once those capabilities are established. Until then, components will be removed from the aircraft, visually assessed, and exchanged for new components if replacement is required.

According to Warren, the depot should stand up its first batch of CH-53K component capabilities this summer, with the first engines capability established in early fall. All told, FRCE plans to establish capability on about 150 components and dynamic components for the Kilo. The second CH-53K scheduled for AEPD induction should arrive at FRCE in late 2026, with the next two following within fiscal year 2027. FRCE will remain the only depot source of repair for the CH-53K until FRC Southwest, located on Naval Air Station North Island, California, establishes its King Stallion airframes capabilities, which should take place sometime in the early 2030s, he said.

FRCE is North Carolina’s largest maintenance, repair, overhaul and technical services provider, with more than 4,000 civilian, military and contract workers. Its annual revenue exceeds $1 billion. The depot provides service to the fleet while functioning as an integral part of the greater U.S. Navy; Naval Air Systems Command; and Commander, Fleet Readiness Centers.