

KC-130J: NEW HERCULES FOR THE MARINES

Story and Photos by Rick Llinares



The venerable Hercules, or Herk, has been serving the Marine Corps since 1962. The aircraft is a crucial, but perhaps unsung, component within Marine aviation. The KC-130 is the Marine Corps' only aerial refueling and transportation platform. Fixed or rotary wing Marine aircraft rely on the Hercules to get to and from the fight. Assault support helicopters can refuel from the Herk in midair or on the ground from forward area refueling points closer to the battlefield. Key parts, personnel and other cargo to support the Marine Air-Ground Task Force (MAGTF) are transported to where they are needed by the Herk. The aircraft's newest model, the KC-130J, above, promises to expand the capabilities of this platform.

Major Dave Krebs, a USMC KC-130 pilot with Marine Aerial Refueler Transport Squadron (VMGR) 252 and the current KC-130J Fleet Introduction Team Operations Officer, explained, "In the war on terrorism, the MAGTF is looking for maximum flexibility. The configuration of

the KJ, as the KC-130J is known, allows for just that. The primary mission of the Marine Hercules is to conduct aerial refueling. With the standard external wing tanks on every KJ model, the MAGTF commander has both a tanker and logistics transport in the same platform. Operations in Afghanistan underscored the importance of both fuel and logistical resupply to forward deployed units."

When asked to describe the enhanced capabilities of the J over the current KC-130F and KC-130R Hercules models used by the Marine Corps, Maj. Krebs noted, "The KJ brings many new and improved capabilities to the Marine Air-Ground Task Force, including night systems capability, advanced avionics and defensive countermeasures."

With the addition of the KC-130J, the Marine Hercules community provides a completely integrated

night-vision imaging systems (NVIS)-capable platform. Prior to initial KJ introduction, the Marine Corps KC-130 NVIS capability resided within a select few 4th Marine Air Wing KC-130T aircraft. To ease the transition period from legacy Hercules to the J model, the Marine Corps recently secured funding to retrofit some legacy aircraft with NVIS capability. But the KJ is the future answer to the Corps' Hercules NVIS requirements.

The KJ is the first tactical transport aircraft equipped with a head-up display (HUD). With the elimination of the navigator's position in the KJ's flight crew, the HUD is essential to ensure that the pilots spend maximum time looking outside the aircraft for terrain and threat avoidance. In the low-altitude environment, both navigation and threat symbology are projected onto the HUD to visually cue the pilots' eyes on target, thereby improving situational awareness and airdrop target acquisition accuracy.

With two separate global positioning systems and inertial navigation systems that "talk" to each other and compare positions, the aircraft's navigation accuracy is significantly enhanced. Four multifunction head-down displays (HDD) round out the situational awareness improvements for the pilots. The KJ's low-power color radar provides excellent doppler ground mapping, weather, wind shear and skin-paint displays. The HDDs also display digital moving maps and a variety of system-specific information in easy-to-read formats.

Aircraft survivability equipment (ASE), formerly known as defensive electronic countermeasures, is part of the basic aircraft delivered to the Corps. ASE has become more important than ever for the KC-130. Recent missions have taken Marine Hercules deep into enemy-held territory and into threat envelopes not previously contemplated for large transport aircraft. Every KJ will now deploy with an integrated, improved countermeasures capability.

Maj. Krebs compared the J model to the older versions of the KC-130, "The handling of the KJ is essentially the same, but there is a significant improvement in takeoff and climb performance. The cruise speed is approximately 30 knots faster, but maximum effort landing performance is essentially the same." There's a need to upgrade the well-used fleet of Herks in operation. "Current legacy aircraft are becoming very maintenance intensive," he continued. "The KC-130F models have exceeded their design life and are flying on 'borrowed time,' which impacts the maintenance Marines working excessively long hours and the pockets of the program budgeters. The service life extension programs are quickly becoming cost prohibitive."

Marine Aerial Refueler Transport Training Squadron (VMGRT) 253 was the first Marine unit to accept delivery of a KJ, with the first aircraft used exclusively as a maintenance training aid. On 18 June 2002, under the command of Lieutenant Colonel R. D. Allen, the KJ took off for the first instructor cadre training flight. VMGRT-253 accepted a second aircraft later that fall and transferred both to VMGR-252 during January 2003. Since that time VMGR-252 has accepted several additional aircraft, assumed the fleet readiness squadron training responsibilities for the KJ and continued the instructor cadre training program.

There is no shortage of challenges associated with the introduction of the KJ. The transition process affects every member of the squadron. Normally, a squadron under transition to a new aircraft would stand down from normal operations for a period of time. Training would be focused strictly on J-model conversion for both maintenance and operations, and a relatively rapid conversion would occur. The terrorist attacks on 11 September 2001 changed everything. The country is in the grasp of war and current contingency requirements cannot go unanswered to afford VMGR-252 the luxury of standing down. This presents the Marines with the daunting task of simultaneously training and reorganizing to accommodate the introduction process while answering the nation's call to war.

All of the Marine KJ aircrew members who were previously qualified in the legacy aircraft underwent conversion training to the KJ. Common training similarities in the airframe and related systems between older Hercules models and the KJ allow reduced training time for

The KC-130J provides the Marine Corps with a completely integrated, night-vision imaging systems-capable platform. Among the upgrades to the "KJ" are a glass cockpit with a head-up display, right; six-bladed propellers, below; and aircraft survivability equipment.



Photos by Cpl Chris Flurry



conversion. The pilots and loadmasters undergo a period of approximately seven weeks of classroom, systems trainers and practical application mission training. The pilots then spend one week with Lockheed Martin for simulator training prior to their first flight in the aircraft. Since there is currently not a KJ load trainer, the loadmasters conduct multiple ground training sessions on the actual aircraft parked on the flight line. The aircrew flight phase of instruction lasts about two months, resulting in combat-capable aircrews minus NVIS qualification. Crew chiefs undergo intensive maintenance and systems training at MCAS Cherry Point, N.C., followed by flight training with VMGR-252.

As the United States' premier "force in readiness," the Marines must be able to immediately deploy anywhere they are called and be ready for combat operations. As the Marine Corps' only organic long-range aerial refueling platform, the KC-130J's ability to carry additional combat troops and fuel provides the MAGTF commander with the flexibility needed to take to the fight.

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The author is grateful to the following individuals for their support: Major General John Castellaw; Lieutenant Colonel William Dickerson; Majors