

## The CH-53K "King Stallion" . . .

- ✈ is the most powerful helicopter in the Department of Defense
- ✈ is built by Sikorsky a Lockheed Martin Corporation
- ✈ is the only fully maritized helicopter capable of lifting 100% of the MAGTF's vertical "Middle Weight Force"
- ✈ is the only heavy lift helicopter with the range and payload to be capable of off-loading the MEB of 2024 in one cycle of darkness and supporting Expeditionary Force 21
- ✈ is a new build helicopter that evolves the CH-53E design to improve operational capability, interoperability, reliability, maintainability, survivability, and cost of ownership
- ✈ was designed with the maintainer in mind, reducing maintenance man hours per flight hour while maximizing work effectiveness and efficiency, and while improving overall reliability

### Performance

- ✈ can externally lift up to 36,000lbs; the max rated design capability of the external cargo hook
- ✈ has single, dual and triple external cargo hook capability that will allow for the transfer of three independent external loads to three separate landing zones in support of distributed operations in one single sortie without having to return to a ship or other logistical hub
- ✈ has been designed to carry a 27,000 pound external load 110 nautical miles, taking off at sea level with an ambient temperature of 103 degrees Fahrenheit; deliver the external load to a landing zone at a pressure altitude of 3000 feet with ambient temperature of 91.5 degrees Fahrenheit; and return to the original pick-up zone with thirty minutes of fuel in addition to the prescribed minimum fuel requirements. Furthermore, it is required to perform this mission at the maximum allowable engine degradation. This nearly triples the capability of the CH-53E
- ✈ can externally transport x 2 up-armored HMMWVs (~27,000lbs)
- ✈ can externally lift Light Armored Vehicles (~31,000lbs)
- ✈ can externally lift dual Joint Tactical Vehicle (JLTV) (~32,500lbs)
- ✈ cabin can internally load a HMMWV
- ✈ has an intermodal cargo system, that will allow it to transfer AMC 463L pallets directly from fixed wing transport aircraft (without the need for reconfiguration) and lock them in place with an internal pallet locking system, significantly enhancing the speed of internal cargo operations
- ✈ cabin can internally load 2 x 10,000lb AMC 463L pallets or 5 AMC 463L half-pallets
- ✈ max speed is 195.6 miles per hour (170 knots)
- ✈ internal load consists of 30 troops or 24 litter patients plus four attendants or up to 30,000 pounds (13,636 kg) of cargo
- ✈ has triple redundant full fly-by-wire flight controls
- ✈ Main Gear Box is a split torque design
- ✈ has seven anhedral swept tip composite main rotor blades
- ✈ cabin is mostly comprised of composite materials
- ✈ is more survivable than the CH-53E
- ✈ weighs 43,750 pounds empty
- ✈ max weight on wheels is 74,500 pounds (33,792.6 kilograms)
- ✈ max gross weight w/External load: 88,000 pounds (39,917.1 kilograms)
- ✈ has three General Electric T408-GE-400 turboshaft engines producing in excess of 7,500 shaft horsepower each
- ✈ T408-GE-400 turboshaft engines sustained 7,600 shaft horsepower
- ✈ T408-GE-400 engines achieved 8,300 shaft horsepower
- ✈ T408-GE-400 engine to date has accumulated over 5,000 test hours
- ✈ has a fuel capacity of 15,620 lbs/2297 gal excluding TBFDs tanks
- ✈ endurance is up to 4 hours (unrefueled)
- ✈ max range without refueling is up to 406 nautical miles
- ✈ max range with air to air refueling is indefinite
- ✈ max operating ceiling is 18,500 feet (ambient dependant)
- ✈ is armed with three GAU-21 .50 caliber machineguns
- ✈ crew consists of 2 Pilots and 1 to 3 Air Crew (mission dependent)

## Dimensions

- + is 99 feet .5 inches (30.3 meters) long with rotors turning
- + fuselage is 73.4 feet (22.4 meters)
- + is 28 feet 4 inches (8.6 meters) in height
- + main rotor diameter is 79 feet (24.0 meters) wide
- + cabin length is 30 feet (9.1 meters)
- + cabin width is 9 feet (2.8 meters)
- + cabin is 12 inches wider than the CH-53E
- + fuselage: 18 feet 4 inches (5.6 meters 10.16m)

## Programmatics

- + first flight was conducted on 27 October 2015
- + Initial Operational Capability (IOC) is 2019
- + Full Operational Capability (FOC) is 2029
- + Program of Record (POR) is 200 aircraft
- + program has 4 Engineering Demonstration Model (EDM) developmental test (DT) aircraft
- + program has 6 System Demonstration Test Article (SDTA) operational test (OT) aircraft
- + program achieved Milestone B (System Development & Demonstration (SDD) initiation) in Dec 05
- + Roll-out ceremony was 5 May 2014
- + was named "King Stallion" on 5 May 2014
- + first flight aircraft initially turned its rotors on 25 February 2015
- + program was initiated at Milestone B as an Acquisition Category (ACAT) ID program, based on total estimates for Research, Development, Test and Evaluation (RDT&E) and Aircraft Procurement, Navy (APN) costs
- + Milestone Decision Authority (MDA) is the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L))
- + Ground Test Vehicle (GTV) is a fully operational aircraft, mounted on a test pedestal performing Developmental Test (DT) unique first in developmental history
- + Unique in aviation build and test history, the program has a dedicated Ground Test Vehicle (GTV) that is a fully flyable airframe, Static Test Article (STA), and a Fatigue Test Article (FTA)
  - The GTV is a new and significant development in aircraft acquisition and has played a major role in the development of the CH-53K. The GTV is a flying aircraft bolted to the ground built to test all subsystems to include, dynamic components, airframe fatigue, systems and flight control surfaces and controls in order to work out any issue prior to conducting first flight
  - The STA is used to measure strain and critical loads under several thousand load conditions, allowing a rigorous testing program in a safe environment. It is an instrumented airframe and main gear box, lacking the dynamic components allowing testing of individual loads up to 30,000 lbs giving Sikorsky and NAVAIR engineers proof of safe structures before the CH-53K flew.

## As of 27 January 2016

- + EDM-1 is in developmental flight test. First flight conducted 27 October 2015.
- + EDM-3 Aircraft is in developmental flight test. EDM-3's first flight conducted on 22 January 2016.
- + EDM-2 in final stages of assembly; expect first flight spring 2016
- + EDM-4 in final stages of assembly; expect first flight summer 2016
- + GTV conducting Pre Flight Acceptance Testing (PFAT)
- + SDTAs 1-4 in various stages of assembly
- + SDTAs 5 & 6 critical parts under contract