CH-53E SUPER STALLION

SIKORSKY AIRCRAFT

Division of UNITED TECHNOLOGIES

THE NEED

A helicopter with enough muscle and stamina to perform heavy lift and other essential missions existing aircraft can't handle - that was the need of both the U.S. Navy and Marine Corps ten years ago.

THE SOLUTION

The New Sikorsky-built CH-53E, *SUPER STALLION.*

To satisfy the requirements of both services, the Department of Defense authorized the Navy in 1971 to proceed with the prototype development of the CH-53E, a triple-turbine powered, seven-bladed helicopter with a 16-ton payload capability over a radius of 50 n.m. - and one that is shipboard compatible. Named the *SUPER STALLION*, this helicopter built by Sikorsky, doubles the lift of the Marine CH-53D medium transport.

The *SUPER STALLION* will perform the heavy lift helicopter missions of the U.S. Marine Corps and the U.S. Navy in the 1980's and beyond.

MISSIONS

U.S. Marine Corps:

- Lift for Amphibious Assault
- Retrieval of Aircraft and Equipment
- Heavy Weapons and Equipment Deployment

U.S. Navy:

- Airborne Mine Counter Measures
- Delivery of Priority Cargo at Sea
- Clearing Carrier Decks of Unflyable Aircraft
- Movement of Construction Equipment
- Movement of Cargo in Mined or Unimproved Ports

NO OTHER HELICOPTER IN THE WESTERN WORLD CAN MATCH IT

The *CH-53E* is *NEEDED* for

AMPHIBIOUS ASSAULT/ WEAPONS & HEAVY EQUIPMENT DELIVERY

Marine studies of past combat operations and scenarios of potential combat areas have highlighted the vulnerability of unsupported heliborne assault forces against a highly mechanized enemy. The CH-53E provides the lift required for essential weapons, vehicles and engineering equipment needed immediately upon landing the assault forces.

The CH-53E responds quickly.

AIRCRAFT/EQUIPMENT RETRIEVAL

With the CH-53E, all Army, Navy, Marine and Air Force helicopters can be retrieved - even another CH-53E. All present Navy and Marine tactical fixed wing aircraft can be retrieved. Only the F-14, E-2, and A-6 require minor disassembly.

By lifting battle-damaged aircraft from carrier decks to another ship or directly to a repair facility, the CH-53E allows carriers to maintain a higher state of combat readiness.

The CH-53E keeps proving it has the muscle and stamina to do the job.

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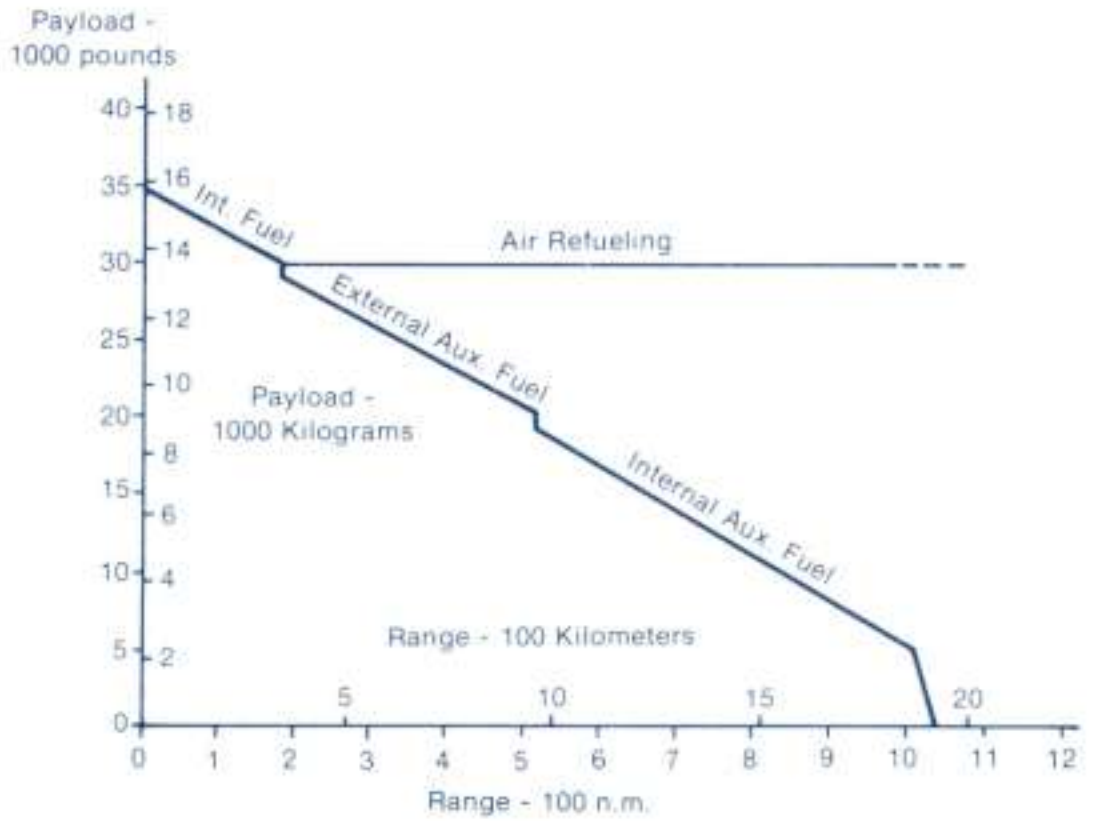
PAYLOAD/RANGE



The *CH-53E* is *NEEDED* for

VERTICAL ONBOARD DELIVERY

With extended range and increased payload, the CH-53E can deliver men, high priority goods, needed spare parts and mail to virtually all kinds of ships - whether at anchor or underway. It can make hover deliveries to ships without landing platforms.

A J-79 engine used in F4s in its shipping container can be delivered on board.

CABIN DIMENSIONS:

30 ft. (9.14 m.) long
6-1/2 ft. (1.98 m.) high
7-1.2 ft. (2.29 m.) wide

ACCOMMODATES:

7 standard 40 in. x 48 in. (1.02 m. x 1.22 m.) pallets or 55 troops

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The *CH-53E* is *NEEDED* for

CONTAINER LOGISTICS

Ship to Shore/Ship to Ship

By 1980, more than 80 percent of all cargo will be containerized. Because these containers are large and bulky, they cannot be transferred from ship to shore without sophisticated port facilities, nor can they be transferred from one ship to another at sea.

In any future military emergency, service fleet activities on the open sea will include transferring containerized supplies - from the deck of a delivering commercial containership to the deck of a replenishment ship servicing combat forces.

The *CH-53E* is

SHIPBOARD COMPATIBLE

With powered main rotor and tail pylon fold systems, the aircraft is fully compatible with and can be based aboard the LPH and LHA amphibious ships. It can conduct operations from the flight decks of the LPD, LSD and LST ships of the Amphibious Task Force.

The versatile CH-53E can also operate from the flight decks of the Navy's AOEs and AORs.

When folded the CH-53E occupies only 10 percent more space than a folded CH-53D.

AIRBORNE MINE COUNTERMEASURES

U.S. Navy MH-53E

(AMCM) Mission:

Clear mine fields by sweeping, countering, locating and neutralizing mines.

MH-53E Provides significant increase in operating capability

- Greater lift capacity
- Greater one-engine inoperative performance and safety margin
- Higher tow tensions
- Greater Reliability and Maintainability
- Longer station operating time
- Better hot day capability
- Higher sea state operations

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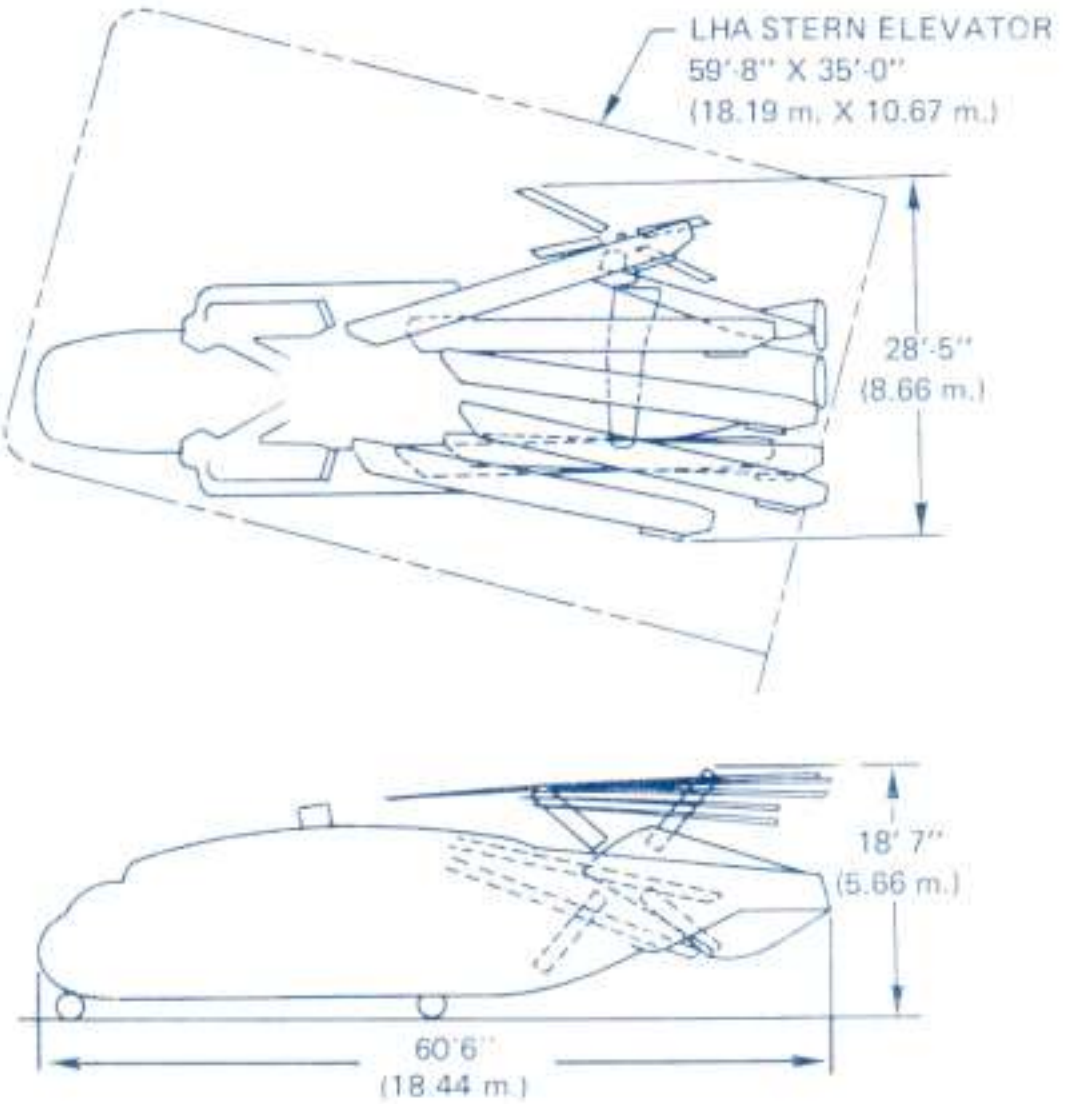
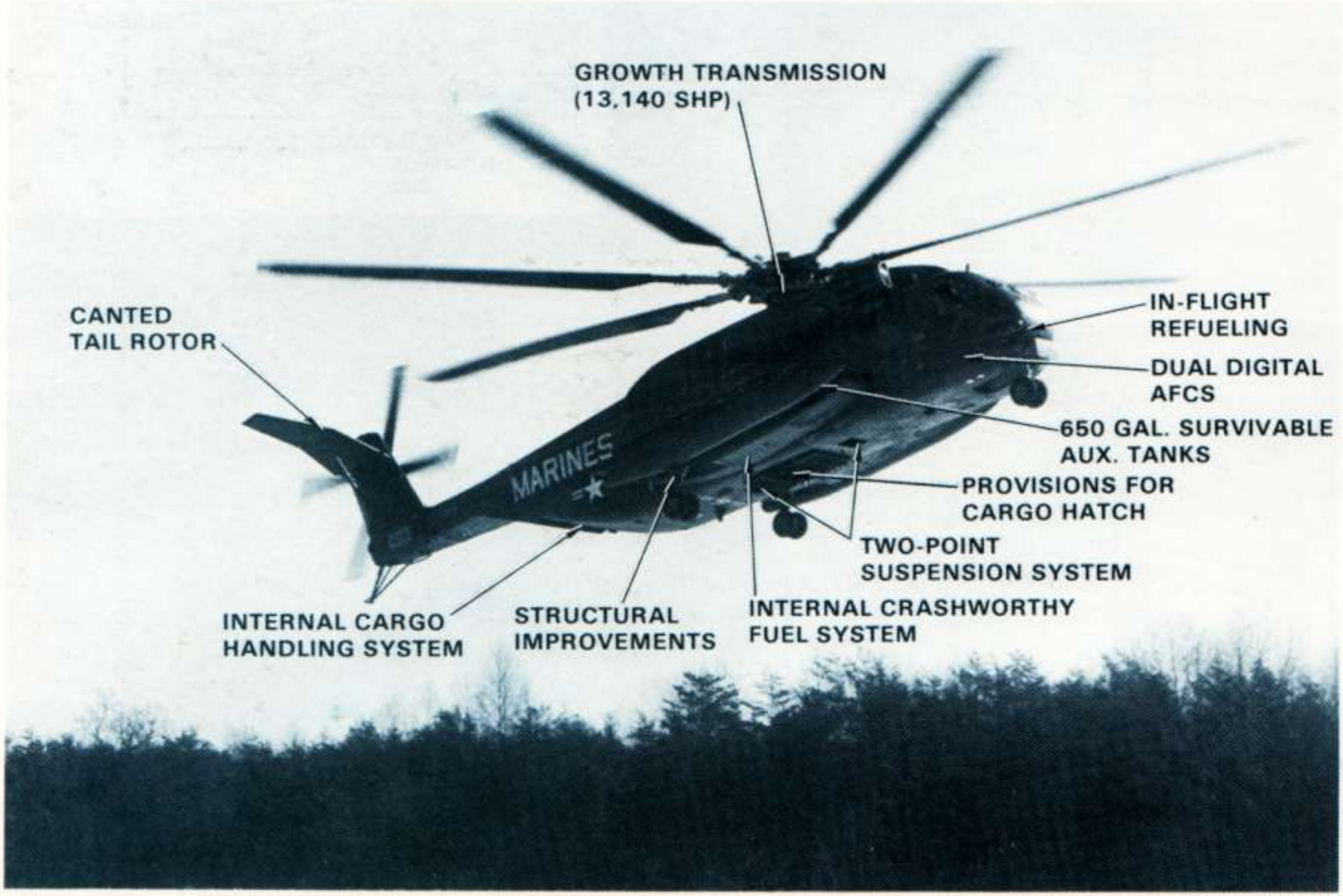


From a stowed configuration, the aircraft can be spread and ready for flight checkout in less than two minutes. Primary flight systems also can be checked in the stowed position.


GROWTH TRANSMISSION
(13,140 SHP)
CANTED
TAIL ROTOR
IN-FLIGHT
REFUELING
DUAL DIGITAL
AFCS
650 GAL. SURVIVABLE
AUX. TANKS
PROVISIONS FOR
CARGO HATCH
TWO-POINT
SUSPENSION SYSTEM
INTERNAL CRASHWORTHY
FUEL SYSTEM
STRUCTURAL
IMPROVEMENTS
INTERNAL CARGO
HANDLING SYSTEM
MARINES

The outstanding performance of the CH-53E is possible because of

THESE DISTINCTIVE DESIGN FEATURES

- Three T64-GE-416 engines (13,140 SHP)
- Seven main rotor blades with titanium spars
- Main rotor diameter: 79 feet
- Tail rotor diameter: 20 feet

Although the CH-53E has exceptional capabilities that set it apart, it retains much commonality with other H-53s, minimizing the need for special parts, ground support equipment or training.

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With these design features, the CH-53E provides

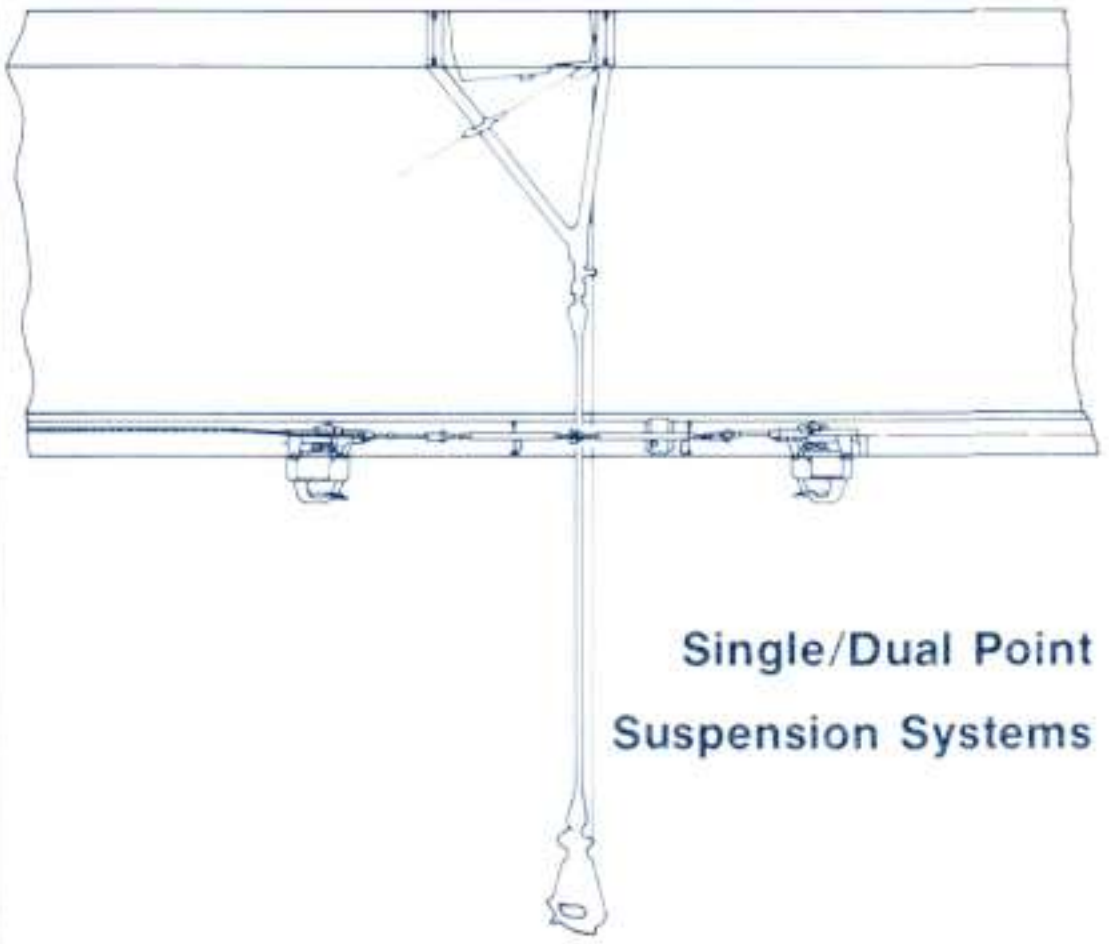
HIGH RELIABILITY/ MAINTAINABILITY

- BIM® blade inspection method
- In-cockpit monitoring of critical fluid levels
- New digital automatic flight control system with built-in test capability
- Main and tail rotor blades removed "on condition"
- Main blade with titanium spar, Nomex trailing edge and fiberglass cover for greater durability and performance

ADAPTABLE TO MANY MISSION ENVIRONMENTS

MISSION FEATURES

- Emergency water landing capability
- Engine air particle separator (EAPS)
- Towing and mine sweeping
- Single/dual point suspension system
- In-flight refueling capability
- Extended range
- External auxiliary fuel tanks - 650-gal. (2460 liter) each
- Enlarged sponsons
- Utility hoist
- Armor and armament



Single/Dual Point Suspension Systems

Engine Air Particle Separator (EAPS)

Rescue Hoist

External Fuel Tanks

In-Flight Refueling

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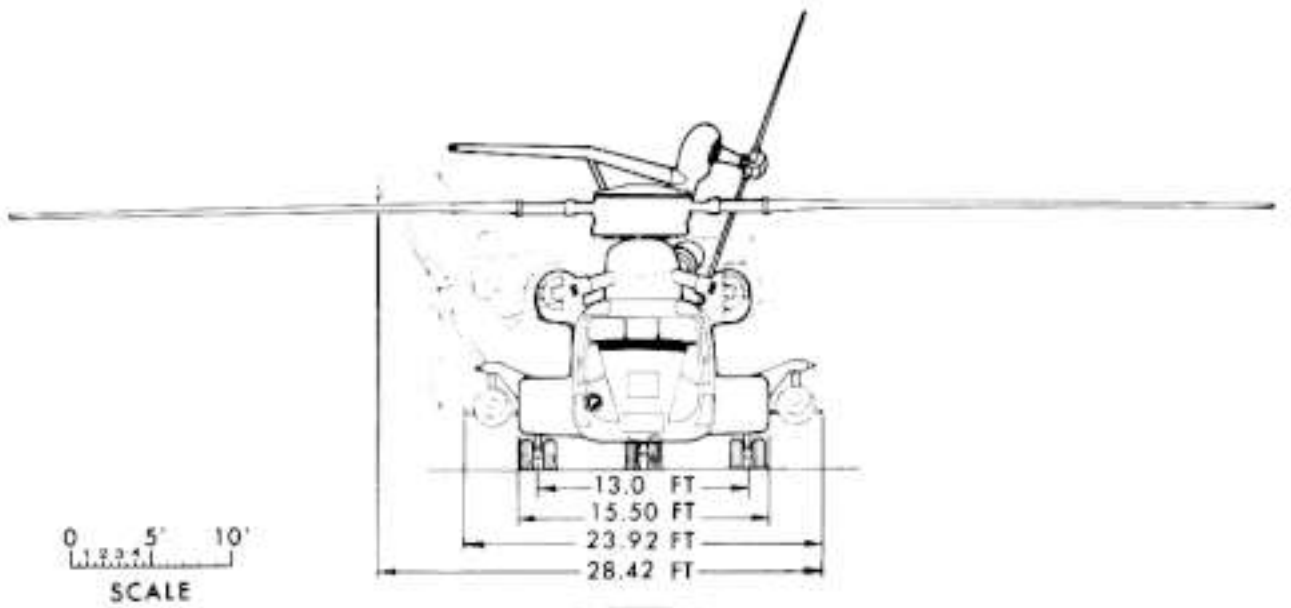
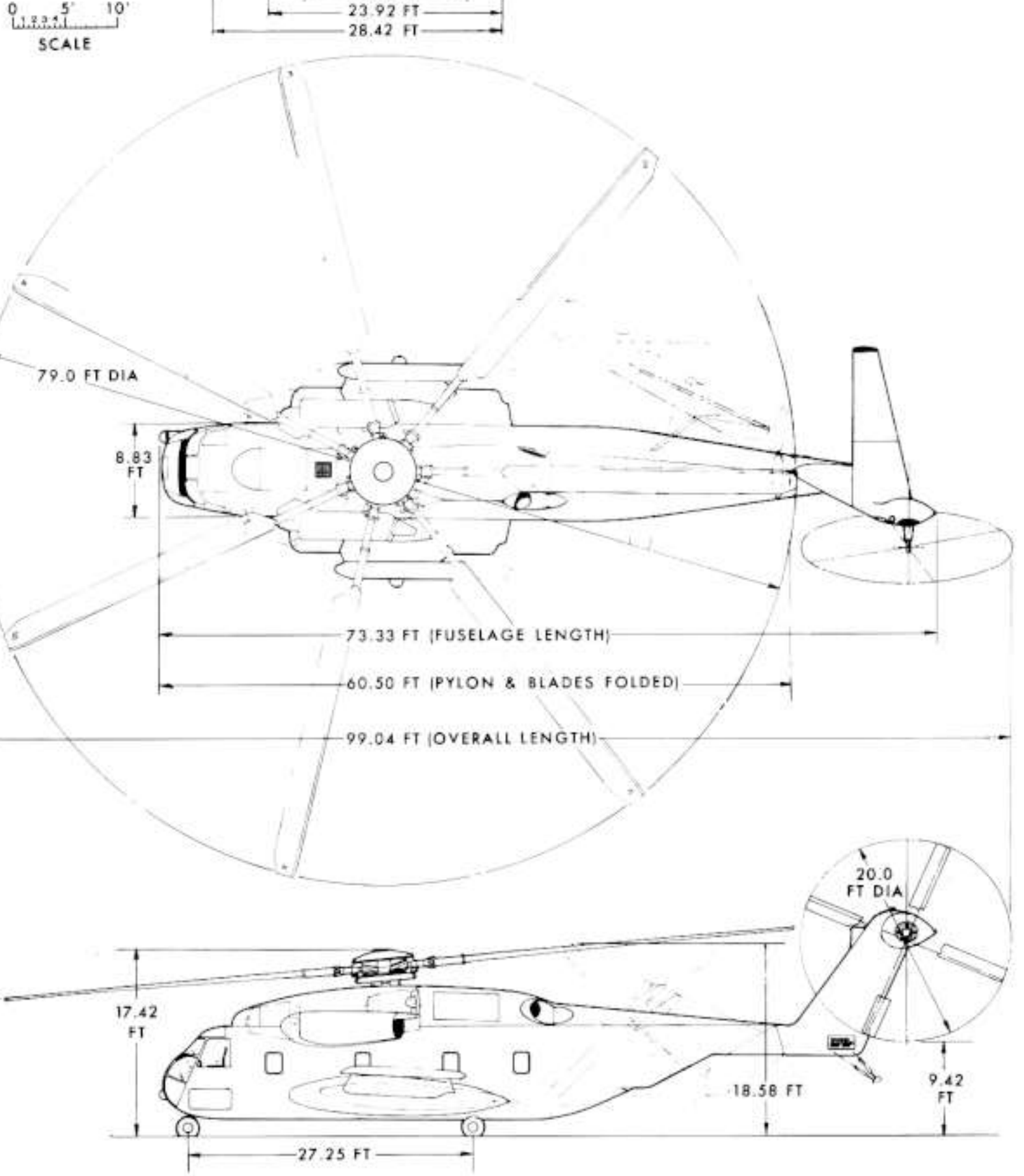
Sea Level, Standard Day	English	Metric
PERFORMANCE		
High speed	170 kts.	315 km./hr.
Cruise speed	150 kts.	278 km./hr.
Maximum rate of climb (15,000 lb payload)	3,500 fpm	17.8 m/sec.
Engines: (3) T64-GE-416		
Rating:		
Maximum (10 min.)	4,380 SHP	4,380 SHP
Total (SHP)	13,140 SHP	13,140 SHP
Main transmission	13,140 SHP	13,140 SHP
WEIGHTS		
Maximum gross weight, external	73,500 lbs.	33,339 kg
Maximum gross weight, internal	69,750 lbs.	31,638 kg
Weight empty	33,226 lbs.	15,089 kg
Basic mission payload	32,000 lbs.	14,515 kg
DIMENSIONS		
Overall length (spread/folded)	99'1/2"/60'6"	30.18 m/18.44 m
Overall height (spread/folded)	28'5"/18'7"	8.66 m/5.66 m
Overall width (folded)	28'5"	8.66 m
Main rotor diameter	79'0"	24.07 m
Tail rotor diameter	20'0"	6.10 m
Internal:		
Cabin length	30'0"	9.14 m
Cabin width	7'6"	2.29 m
Cabin height	6'6"	1.98 m
Seating capacity:		
Crew	3	3
Troops	55	55





0 5' 10'
SCALE

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The *CH-53E*

ACCOMPLISHMENTS

- Through Navy/Marine Corps testing, the CH-53E has verified its mission capabilities.
- It has demonstrated lift capability
- The CH-53E successfully completed its shipboard compatibility demonstration and more than proved its mission suitability.
- Testing to date has demonstrated that the CH-53E meets or exceeds Navy/Marine Corps requirements.

  19,500 pound M-54 truck
  20,000 pound S-3 aircraft
  26,500 pound A-6 aircraft
  28,500 pound Case 1150 bulldozer
  30,400 pound 155 mm howitzer including its basic load of ammo and 10-man gun crew
  32,000 pound 8' x 8' x 20' maritime cargo container

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