

# News

From MCDONNELL DOUGLAS



Los Angeles Area Contact:

St. Louis, Missouri 63166

(314) 232-5911

## MCDONNELL DOUGLAS A-4 AND TA-4 SKYHAWKS

### FOR THE UNITED STATES NAVY

#### Background Information

The versatile Skyhawk military aircraft, produced by the McDonnell Douglas Corporation, is operated by United States and overseas military forces as an attack bomber, strike fighter or advanced jet trainer.

Seven different versions of the small but powerful A-4, effective either as a bomber or quick-response strike fighter, and the TA-4, a two-place trainer, were delivered to the United States Navy for carrier operations and operational training and for Marine Corps use as a tactical aircraft.

In addition, with the authorization of the U.S. Government, Skyhawks in several versions were exported overseas for operation by the Israeli Air Force, Royal Australian Navy, Royal New Zealand Air Force, Argentina Navy and Air Force, Singapore Air Defense Command and the Kuwait Air Force.

The agile Skyhawk also is used by the U.S. Navy's Blue Angels flight demonstration squadron for their spectacular aerobatic maneuvers.

McDonnell Douglas built a total of 2960 Skyhawks during a 26-year period, the longest continuous production run for any U.S. military aircraft. Last delivery of a Skyhawk occurred February 27, 1979, at the Douglas Aircraft Company division of McDonnell Douglas in Long Beach, California. The aircraft was an A-4M, delivered to the U.S. Navy and Marine Corps.

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The A-4M, latest of the tactical Skyhawks in U.S. military service, is the most powerful of the family of rugged, bantamweight aircraft. Built for operation by the Marine Corps, the single-seat A-4M was produced under contract to the Naval Air Systems Command.

The multi-mission armament of the A-4M includes air-to-air missiles and guns for fighter assignments or bombs, guns and missiles for close air support of ground forces from forward airfields or from carriers.

Incorporated in the A-4M are a number of improvements over its predecessor Skyhawks. Chief among the advances is the more powerful Pratt & Whitney engine -- the J52-P-408, generating 11,200 pounds (49,817 N) of takeoff thrust.

The additional power increases the Skyhawk's maneuverability, rate of climb and acceleration, enhancing its combat survivability. Speed of the A-4M is in the high subsonic range -- about 700 m.p.h. (1126 kms/hr).

Other A-4M features include an advanced navigation and weapons delivery system. In addition, a ribbon-type drag chute combines with wing-lift spoilers and the more powerful engine to improve the Skyhawk short-field landing performance, making it the first of the series with combat operational capability from 4000-foot (1219 m) landing fields.

Other A-4M changes include a greater ammunition capacity for the two internally mounted 20mm or 30mm guns, a more powerful generator, a self-contained engine starter and a larger windscreen and pilot canopy, providing greater head room and visibility.

Also incorporated in the A-4M are basic Skyhawk design features of earlier models, such as nose-wheel steering, in-flight refueling capability and the McDonnell Douglas ESCAPAC 1-C-3 zero-altitude, zero-speed emergency ejection system.

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Weighing only 10,600 pounds (4808 kg) empty, the A-4M can take off fully loaded at a gross weight of 24,500 pounds (11,113 kg), including 9000 pounds (4082 kg) of all types of modern tactical armament. It is 40.3 feet (12.2 m) long, 15 feet (4.5 m) high and has a wingspan of only 27.5 (8.3 m) feet. As with other Skyhawks, this wingspan dimension permits it to be housed comfortably in carriers without folding the wings.

Flight characteristics of the A-4M, particularly its high-speed stability and its excellent controllability, make it an effective platform for the sophisticated weapons delivery system it carries.

The A-4M made its maiden flight on April 10, 1970, and was first delivered to the U.S. Navy on November 3, 1970.

The newest international versions of the Skyhawk were designated the A-4N and contained many of the A-4M advances, including the Pratt & Whitney J52-P-408A engine. Maiden flight of the A-4N occurred on June 12, 1972.

Latest jet trainer version of the Skyhawk is the TA-4J. It was built without combat equipment, resulting in a lighter aircraft and simplifying maintenance requirements. Flown by Navy operational training squadrons, the TA-4J has a maximum range of 2000 miles (3218 km) when equipped with external fuel tanks and an endurance of more than four hours, nearly double the flight training time of earlier jet trainers.

Other TA-4 versions of the Skyhawk possess the performance and armament capabilities of the tactical Skyhawk, in addition to their training function. Designed to operate from carriers or from forward landing strips, these two-place models can carry bombs, rockets, missiles and guns.



Design of the Skyhawk trainer is essentially the same as that of the basic Skyhawk, with the exception of a 28-inch (71 cm) extension of the fuselage to accommodate the second seat and a dual set of controls.

Basic Skyhawk versions and the year each became operational:

A-4A in 1956, A-4B in 1957, A-4C in 1959, A-4E in 1962, TA4F in 1966, A-4F in 1967, TA-4J in 1969 and A-4M in 1970.

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