

-1 Skyraider

AD (A-1) Skyraider



US Navy Skyraider from Attack Squadron Fifteen (VA-15) catches a wire during carrier operations

Type Attack aircraft

Manufacturer [Douglas Aircraft Company](#)

Maiden flight [18 March 1945](#)

Introduced 1950s

Retired 1970s

Primary users [United States Navy](#)
[United States Air Force](#)

Produced 1945–1957

Number built 3,180

Variants [A2D Skyshark](#)

The Douglas **A-1** (formerly **AD**) **Skyraider** was a [U.S.](#) single-seat attack [bomber](#) of the [1950s](#), [1960s](#) and early [1970s](#). A propeller-driven anachronism in the [jet age](#), the Skyraider had a remarkably long and successful career well into the space age, and inspired a straight-winged, slow flying jet powered successor which is still in frontline service today.

It carried various nicknames including: "[Spad](#)" (a model of airplane flown in [World War I](#)), "Able Dog" (phonetic AD), the "Destroyer," "Hobo" (radio call sign of the USAF 1st Air Commando/Special operations Squadron), "Firefly" (602nd ACS/SOS), "Zorro" (22nd SOS), "The Big Gun," "Old Faithful," "Old Miscellaneous," "Fat Face" (AD-5/A-1E version, side-by-side seating), "Guppy" (AD-5W version), "Q-Bird" (AD-1Q/AD-5Q versions), "Flying Dumptruck" (A-1E), "Sandy" (Combat Search And Rescue helicopter escort) and "Crazy Water Buffalo" (South Vietnamese nickname).

Design and development



US Air Force Douglas A-1E with wings folded at McClellan Air Force Base, California, on [15 February 1968](#).

The A-1 was originally designed to meet [World War II](#) requirements for a [carrier-based](#), single-place, long-range, high performance [dive-/torpedo bomber](#). Designed by [Ed Heinemann](#) of the [Douglas Aircraft Company](#), the Skyraider was ordered in July 1944 as the XBT2D-1. In April 1945, one month after its first flight on [18 March 1945](#), it was evaluated at the [Naval Air Test Center](#) (NATC). In December 1946, after a designation change to **AD-1**, delivery of the first production aircraft to a fleet squadron was made to VA-19A.

The AD-1 was built at Douglas' [El Segundo](#) plant in Southern California. In his memoir [The Lonely Sky](#), test pilot [Bill Bridgeman](#) describes the routine yet sometimes hazardous work of certifying AD-1s fresh off the assembly line (quoting a production rate of two aircraft per day) for delivery to the [US Navy](#) in the 1949-50 time frame.

The low-wing monoplane design started with a [Wright R-3350 radial engine](#), later upgraded several times. Its distinctive feature was the presence of seven hardpoints on each wing. The large straight wings give it excellent low speed maneuverability, and enable it to carry a tremendous amount of ordnance over a considerable combat radius and loiter time for its size, comparable to much heavier subsonic or supersonic jets. The aircraft is optimized for the ground-attack mission, and is armoured against ground fire in key locations, unlike faster fighters adapted to carry bombs such as the [F4U Corsair](#) or [P-51 Mustang](#) which would be retired by US forces long before the 1960s.

The piston engined prop-driven Skyraider was a postwar follow-on to World War II dive bombers and torpedo bombers such as the Helldiver and Avenger. It was replaced in the 1960s by the [A-4 Skyhawk](#) as the Navy's primary light attack plane. Used over Korea and briefly over North Vietnam, it was adopted as the primary ground support attack for the US Air Force and South Vietnamese [VNAF](#) during the Vietnam war, before being supplanted by the jet powered [A-37 Dragonfly](#) and [A-7 Corsair II](#).

Korea



Douglas A-1Es (S/N 52 - 133884 and 52 - 132686).

Though the Skyraider was produced too late to take part in World War II, it became the backbone of [U.S. Navy](#) aircraft carrier and [United States Marine Corps](#) (USMC) strike aircraft sorties in [Korean War](#), with the first ADs going into action from the [USS Valley Forge](#).^[citation needed] Its weapon load and ten-hour flying time far surpassed the jets that were available at the time.^[citation needed] On [16 June 1953](#), a USMC AD-4 from [VMC-1](#) piloted by Major George H. Linnemeier and CWO Vernon S. Kramer shot down a Soviet-built [Polikarpov Po-2](#) biplane, the only documented Skyraider air victory of the war.^[1] During the Korean War (1950-1953) A-1 Skyraiders were flown only by the US Navy and US Marine Corps, and were normally painted in dark navy blue. A total of 101 Navy and Marine AD Skyraiders were lost in combat during the Korean War, and 27 were lost to operational causes, for a total loss of 128 Skyraiders in the Korean War.

[\[edit\]](#) Vietnam



A-1E Skyraiders fly in formation over South Vietnam on way to target on June 25, 1965. The aircraft are assigned to the 34th Tactical Group, based at Bien Hoa, South Vietnam.

Although the [carrier air wing](#) was rapidly transitioning to jet aircraft, the A-1 Skyraider was still the medium attack aircraft in many air wings in 1965 with the [A-6A Intruder](#) slated to replace it. Skyraiders participated in the first strikes against [North Vietnam](#), but were eventually replaced by Intruders. US Navy Skyraiders shot down two Soviet-built [Mikoyan-Gurevich MiG-17](#) jet fighters during the war — on [21 June 1966](#) by LT Clinton B. Johnson and LTJG Charles W. Hartman III (shared victory) of [VA-25](#), and on [9 October 1966](#) by LTJG William T. Patton of [VA-176](#).^[1] As they were released from Navy service, Skyraiders were introduced into the [Vietnam Air Force](#) (VNAF) and adopted by the USAF as one of the Skyraider's most famous roles as the "Sandy" helicopter escort.^[citation needed] [USAF Major Bernard F. Fisher](#) piloted an A-1E on the [March 10, 1966](#) mission for which he was awarded the [Medal of Honor](#) for rescuing Major "Jump" Myers at [A Chau Special Forces](#) Camp.^[citation needed] [USAF Colonel William A. Jones, III](#) piloted an A-1H on the [September 1, 1968](#) mission for which he was awarded the Medal of Honor. In that mission, despite significant damage to his aircraft and suffering serious burns, he returned to his base and reported the position of a downed [flight crew](#) member.^[2]

After November 1972, all A-1s in US service in [Southeast Asia](#) were transferred to the South Vietnamese Air Force (VNAF) and their former roles were taken over by the subsonic [A-37 Dragonfly](#) and [A-7 Corsair II](#).^[citation needed] The Skyraider in Vietnam pioneered the concept of tough, survivable aircraft with long loiter times and large ordnance loads. The USAF lost 201 Skyraiders to all causes in Southeast Asia, while the Navy lost 65 to all causes. Of the 266 lost A-1's, 5 were shot down by surface to air missiles (SAMs), and 3 were shot down in air to air combat; two by North Vietnamese MiG-17s. The first A-1 was shot down on 29 April 1966, and the second A-1 was lost on 19 April 1967; both were from the 602 Air Commando Squadron (ACS). The third A-1 Skyraider was from Squadron VA-35 and was lost to a Red Chinese MiG-19 (J-6) on 14 February 1968. LTJG Joseph P. Dunn (USN), had flown too close to the Communist Chinese held island of Hainan, and had been intercepted. Lieutenant Dunn's A-1 Skyraider was the last US Navy A-1 lost in the war, and he did not survive. Shortly thereafter, A-1 Skyraider naval squadron's transitioned to A-4 Skyhawks. [3]

In contrast to the Korean War, fought a decade earlier, the US Air Force, in Vietnam, utilized the naval A-1 Skyraider for the first time. As the Vietnam war progressed, USAF A-1's were painted in [camouflage](#), while USN A-1 Skyraiders were gray/white in color; again, in contrast to the Korean War, when A-1's were painted dark blue.

In 1965, to highlight the dropping of the six millionth pound of ordnance; CDR Clarence J. Stoddard, flying an A-1H, dropped a special, one time only, object in addition to his other munitions. It was a (no longer working) toilet. [\[1\]](#)

Adaptability

In addition to serving during Korea and Vietnam as an attack aircraft, it was modified into a carrier-based airborne early warning aircraft, replacing the [Grumman TBM-3W Avenger](#). It served in this function in the USN and [Royal Navy](#), being replaced by the [E-1 Tracer](#) and [Fairey Gannet](#) respectively in those services. ^{[citation needed](#)}

Variants



Douglas A-1E (AD-5W) (S/N 52-135206) in flight

Production ended in [1957](#) with a total of 3,180 built. However, in [1962](#) the existing Skyraiders were redesignated **A-1D** through **A-1J** and later used by both the [USAF](#) and the [Navy](#) in the Vietnam War.

The Skyraider went through seven versions, starting with the **AD-1**, then **AD-2** and **AD-3** with various minor improvements, then the **AD-4** with a more powerful **R-3350-26WA** engine. The **AD-5** was significantly widened, allowing two crew to sit side-by-side (this was not the first multiple-crew variant, the **AD-1Q** being a two-seater and the **AD-3N** a three-seater); it also came in a four-seat night-attack version, the **AD-5N**. The **AD-6** was an improved AD-4B with improved low-level bombing equipment, and the final production version **AD-7** was upgraded to a **R-3350-26WB** engine.

- **XBT2D-1**: Single-seat dive-bomber, torpedo-bomber prototype for the US Navy.
- **XBT2D-1N**: Three-seat night attack prototypes. Only three aircraft built.
- **XBT2D-1P**: Photographic reconnaissance prototype. Only one built.
- **XBT2D-1Q**: Two-seat electronics countermeasures prototype. One aircraft only.
- **BT2D-2 (XAD-2)**: Upgraded attack aircraft, one prototype only.
- **AD-1**: The first production model. 242 built. (statistics in table)
- **AD-1Q**: Two-seat electronic countermeasures version of the **AD-1**. 35 built.
- **AD-1U**: **AD-1** with radar countermeasures and tow target equipment, no armament and no water injection equipment.
- **XAD-1W**: Three-seat airborne early warning prototype. **AD-3W** prototype, one aircraft only.
- **AD-2**: Improved model, powered by 2,700 hp (2,000 kW) **Wright R-3350-26W** engine. 156 built.
- **AD-2D**: Unofficial designation for **AD-2s** used as remote-control aircraft, to collect and gather radioactive material in the air after nuclear tests.

- **AD-2Q**: Two-seat electronics countermeasures version of the **AD-2**. 21 built.
- **AD-2QU**: **AD-2** with radar countermeasures and target towing equipment, no armament and no water injection equipment. One aircraft only.
- **XAD-2**: Similar to **XBT2D-1** except engine, increased fuel capacity.
- **AD-3**: Proposed turboprop version, initial designation of [A2D Skyspark](#).
- **AD-3**: Stronger fuselage, improved landing gear, new canopy design. 125 built.
- **AD-3S**: Anti-submarine warfare model, only two prototypes were built.
- **AD-3N**: Three-seat night attack version. 15 built.
- **AD-3Q**: Electronics countermeasures version, countermeasures equipment relocated for better crew comfort. 23 built.
- **AD-3QU**: Target towing aircraft, but most were delivered as the **AD-3Q**.
- **AD-3W**: Airborne early warning version. 31 built.
- **XAD-3E**: **AD-3W** modified for ASW with Aeroproducts propeller
- **AD-4**: Strengthened landing gear, improved radar, G-2 compass, anti-G suit provisions, four 20 mm cannon and 14 Aero rocket launchers, capable of carrying up to 50 lb (23 kg) of bombs. 372 built.
- **AD-4B**: Specialised version designed to carry nuclear weapons, also armed with four 20 mm cannon. 165 built plus 28 conversions.
- **AD-4L**: Equipped for winter operations in Korea. 63 conversions.
- **AD-4N**: Three-seat night attack version. 307 built.
- **AD-4NA**: Designation of 100 **AD-4Ns** without their night-attack equipment, but fitted with four 20 mm cannon, for service in Korea as ground-attack aircraft.
- **AD-4NL**: version of the **AD-4N**. 36 conversions.
- **AD-4Q**: Two-seat electronic countermeasures version of the **AD-4**. 39 built.
- **AD-4W**: Three-seat airborne early warning version. 168 built.
- **Skyraider AEW. Mk 1**: 50 **AD-4Ws** transferred to the Royal Navy.
- **A-1E (AD-5)**: Side by side seating for pilot and co-pilot, without dive brakes. 212 built.
- **A-1G (AD-5N)** - Four-seat night attack version, with radar countermeasures. 239 built.
- **EA-1F (AD-5Q)** - Four-seat electronics countermeasures version. 54 conversions.
- **AD-5S**: One prototype to test [Magnetic anomaly detector \(MAD\)](#) anti-submarine equipment.
- **EA-1E (AD-5W)**: Four-seat airborne early warning version.
- **A-1H (AD-6)** - Single-seat attack aircraft with three dive brakes, centerline station stressed for 3,500 lb (1,600 kg) of ordnances, 30 inches (760 mm) in diameter, combination 14/30 inch (360/760 mm) bomb ejector and low/high altitude bomb director. 713 built.
- **A-1J (AD-7)**: The final production model, powered by a **R3350-26WB** engine, with structural improvements to increase wing fatigue life. 72 built.
- **UA-1E**: Utility version of the **AD-5**.

Operators

-  [Cambodia](#)
-  [Central African Republic](#)
-  [Chad](#)
-  [France](#)
-  [Gabon](#)
-  [South Vietnam](#)
-  [United Kingdom](#)
-  [United States](#)
-  [Vietnam](#)

Specifications (A-1H Skyraider)



Thunder Over Michigan Air show, 2006.

Data from ^{[[citation needed](#)]}

General characteristics

- **Crew:** One
- **Length:** 38 ft 10 in (11.84 m)
- **Wingspan:** 50 ft 0 in (15.25 m)
- **Height:** 15 ft 8 in (4.78 m)
- **Wing area:** 400.31 ft² (37.19 m²)
- **Empty weight:** 11,970 lb (5,430 kg)
- **Loaded weight:** 13,925 lb as scout; 18,030 lb as bomber (6,315 kg as scout; 8,180 kg as bomber)
- **Max takeoff weight:** 25,000 lb (11,340 kg)
- **Powerplant:** 1× [Wright R-3350-26WA](#) [radial engine](#), 2,700 hp (2,000 kW)

Performance

- **Maximum speed:** 320 mph (280 knots, 520 km/h)
- **Cruise speed:** 295 mph (256 knots, 475 km/h)
- **Range:** 1,315 mi (1,142 nm, 2,115 km)
- **Service ceiling:** 28,500 ft (8,660 m)
- **Rate of climb:** ft/min (m/s)
- **Wing loading:** 45 lb/ft² (220 kg/m²)
- **Power/mass:** 0.15 hp/lb (250 W/kg)

Armament

- **Guns:** 4 × [20 mm](#) (0.787 in) [cannon](#)
- **Other:** Up to 8,000 lb (3,600 kg) of ordnance on 15 external hardpoints including bombs, torpedoes, mine dispensers, unguided rockets, or gun pods

Popular culture

While the Skyraider is not as iconic as some other aircraft, it has been featured in some Vietnam-era films such as [Flight of the Intruder](#) flying as Sandy escort, and in [The Green Berets](#) and [We Were Soldiers](#) in the ground support role. The Skyraider also played a leading role in Werner Herzog's 2007 film, [Rescue Dawn](#).

External links

- skyraider.org
- [Douglas AD/A-1 Skyraider](#)
- [Air Force Fact sheet](#) on the Douglas A-1E Skyraider flown by Major Fisher.

[Wikisource](#) has several original texts related to:

[Audio recordings and transcripts with comments of actual Wild Weasel missions flown during the Vietnam War, including Sandy-assisted rescue.](#)

Related development

- [A2D Skyshark](#)

Comparable aircraft

- [A-4 Skyhawk](#)
- [A-37 Dragonfly](#)
- [T-28 Trojan](#)
- [A-10 Thunderbolt II](#)
- [Westland Wyvern](#)
- [Ilyushin Il-10](#)

Designation sequence

- Navy *BT* sequence (pre-1946):
 - [BTD](#) - [BT2D](#) - [BTM](#)
- Navy *A* sequence (pre-1962):
 - [AD](#) - [A2D](#) - [A3D](#) - [A4D](#)
- Unified sequence (after **1962**):
 - [A-1](#) - [A-2](#) - [A-3](#) - [A-4](#)

Related lists

- [List of attack aircraft](#)
- [List of military aircraft of the United States](#)