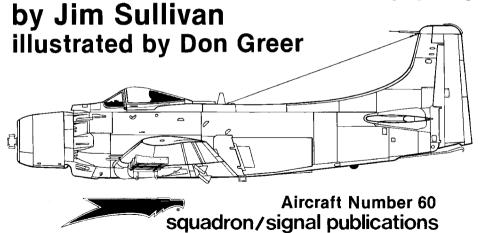


AD SKYRAIDER in action





Lifting off, an AD-4 Skyraider of VF-54, heads for a target in North Korea, carrying a full load of bombs and napalm from the deck of the USS Essex on 3 March 1952. Skyraiders of Air Group Five (VA-55), flying from the USS Valley Forge, participated in the very first Naval Air attacks against North Korean targets on 3 July 1950.



This AD-4 (123827), has been restored to the markings worn during its active duty career. Pilot Dave Forest taxis the NAS Atlanta marked Skyraider during a Valiant Air Command Fly-In at Wilmington, N.C. on 12 April 1981. (Jim Sullivan)

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Dedication:

This book is dedicated to the pilots and ground-support people who handled and maintained this powerful and most effective attack plane, the AD SKYRAIDER.

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Harold Reutebuch Fred Roos Doug Slowiak

Flight Leader Russell-Smith

Bob Stuckey Norm Taylor Ira Ward

John Woods

The National Archives USMC History Center

The National Air and Space Museum of the Smithsonian Institution

An AD-4 (123841) of VA-115 banks gently starboard. Belonging to Air Group Eleven, this Skyraider later saw Korean combat from the deck of USS Philippine Sea. 10 June 1950 (National Archives)



INTRODUCTION

As a replacement for the obsolete SBD Dauntless, Douglas Aircraft Company at El Segundo developed the XSB2D bestroyer, a single engine two place diev bomber with the secondary capability of torpedo attack. Equipped with a tricycle landing gear, and inverted gull wings similar to the FAU Corsari, the Destroyer was armed with two 50 caliber machine guns mounted in each wing and three 50s mounted in remotely controlled aft turrets. Maximum bomb load was 4000 lbs. which was carried internally.

However, while the two place Destroyer was under development, the Navy changed it's requirements from a two place SB (Scout Divebomber) to a single place BT (Divebomber Torpedo Attack). Douglas guickly went to work redesigning the XSB2D into a single seat aircraft under the designation XBTD-1. Unfortunately the inverted guil wing design proved to be impractical and the XBTD-1 project was cancelled in June of 1944.

The Douglas staff immediately went to work on a new design, after having literally created drawings overnight and gotten approval from the Navy the next day. Under the designation XBT2D-1. Douglas was awarded a contract for 15 experimental machines. However, other manufacturers were already at work on competing designs, and Douglas had to meet the same time schedule as those placely at which is a staff to the same time schedule as those placely at which is a staff to meet the same time schedule as those placely at which is a staff to the same time schedule as those placely at which is a staff to the same time schedule as the placely at which is a staff to the same time schedule as the

to meet the same time s	schedule as th	ose already at work:
Martin	ХВТМ	powered by a 3000 hp Pratt & Whitney R-4360 engine.
Curtiss	XBT2C	an updated version of the SB2C Helldiver featuring an aft fuselage radar compartment, the fore- runner of the all-weather concept.
Kaiser Fleetwings	XBTK	a small light attack bomber powered by a Pratt & Whitney R-2800 engine.
Boeing	XF8B	powered by a 3000 hp Pratt & Whitney R-4360 turning a six blad- ed contra rotating propeller. An in- ternal weapons bay could carry

Setting an engineering design completion date of January 1945, Douglas immediately began designing a completely new aircraft to the new Navy requirements. To insure that the weight restriction of 16,120 lbs. were met, the design team targeted the design to come in at 15.370 lbs. 750 lbs. under the weight restriction.

two 1600 lb. bombs and external racks could carry an additional pair of 1600 lb. bombs

The XSB2D Destroyer was designed as a replacement for the SBD Dauntless. A change in Navy requirements caused the cancellation of this two place Scout Divebomber.





Martin XBTM-1 Mauler (85162), the second prototype, is in its natural Aluminum finish while undergoing testing at NATC Patuxent River, 19 July 1947, (via Peter Bowers)

Curtiss XBT2C-1 (50881), the third prototype during flight testing near Columbus, Ohio, 1946. (via Hal Andrews)





Kaiser Fleetwings XBTK-1 (44313), the first prototype after flight testing at NATC Patuxent River, 8 August 1945. (via Peter Bowers)

Boeing XF8B-1 retained the older concept of an internal bomb bay for its bombs and torpedos. Powered by the Wasp Major engine, it could fly at 432 mph. 1944. (via Peter Bowers)





XBT2D-1 (09085), the first prototype Dauntless II in natural Aluminum during Douglas factory flight tests on 13 June 1945. (National Archives)

The Douglas "Dauntless II", as the new airplane was now called, was designed around the forthcoming 2500 hp Wirght R-3350-24 opwerplant. However, the new powerplant was proving more troublesome than expected and it was decided to install the Wright 2,300 hp R-3350-8 engine. Armed with a single 20mm cannon in each wing and three bomb racks, one on each wing and one on the fuselage centerline, the XBT2D-1 flew for the first time on 18 March 1945. Two weeks ahead of schedule.

The XBT2D-1 Dauntless II was delivered to Patuxent River Naval Test Center for evaluation on 7 April 1945. Reports from Naval test pilots were glowing, flight characteristics and performance were rated very good, and wave-off characteristics were excellent. Overall the XBT2D Dauntless II was considered to be the best divebomber ever tested at Patuxent River. One of the Naval requirements that the new divebomber exceeded, and one that impressed the evaluation people. was the XBT2D-1's simplicity to maintenance.

The wings were hydraulically folded, and the wheels, like the F4U Corsair, rotated and folded to the rear. The pilot was protected by armor plating in the cockpit area. Fuel capacity in the single internal fuel tank was 350 gallons, and provision was made for an additional external 150 gallon fuel tank to be mounted on the centerinal.

On 5 May 1945, the Navy signed a letter of intent to purchase 59B Dauntless IIs, and while this order was cut to 277 aircraft after VJ Day, the XBT2D's competitors did not fair nearly as well. Only the Martin XBTM Mauler received a production order, which was reduced to 99 machines after VJ Day. The Curitiss XBT2C was kept only as a back-up, in case a problem developed with the Dauntless II; the small Kaiser Fleetwings XBTK was dropped from the competition after flight problems developed; and the Boeing XFBB was cancelled after VJ Day.

The continuation of the Douglas program was largely because of the BT2D's versatility and adaptability. Early in the program aircraft were assigned and modified to become prototypes for a variety of specialized roles:

- (P) Photographic
- (W) Airborne Early Warning
- (N) Night Attack
- (Q) Electronic Countermeasure

Of the original 25 XBT2D-1 prototypes built, nineteen were built in the basic Attack Bomber configuration; two airtrames (090800999) were modified as XBT2D-1N Night tack; one as a XBT2D-1P (09096) Photo Reconnaissance model; one XBT2D-10 (09109) all weather machine; one airtrame was configured to a XBT2D-10 Wearly warning fiying radar



XBT2D-1 (09100) prototype in glossy Sea Blue with White Modex and numbers. 1949 (via Bob Esposito)



XBT2D-1Q (09109), the only Electronic Countermeasures (ECM) prototype built, was radar equipped for all-weather flying conditions. The radar operator compartment was located within the fuselage just aft of the cockpit. 1948. (via Hal Andrews)

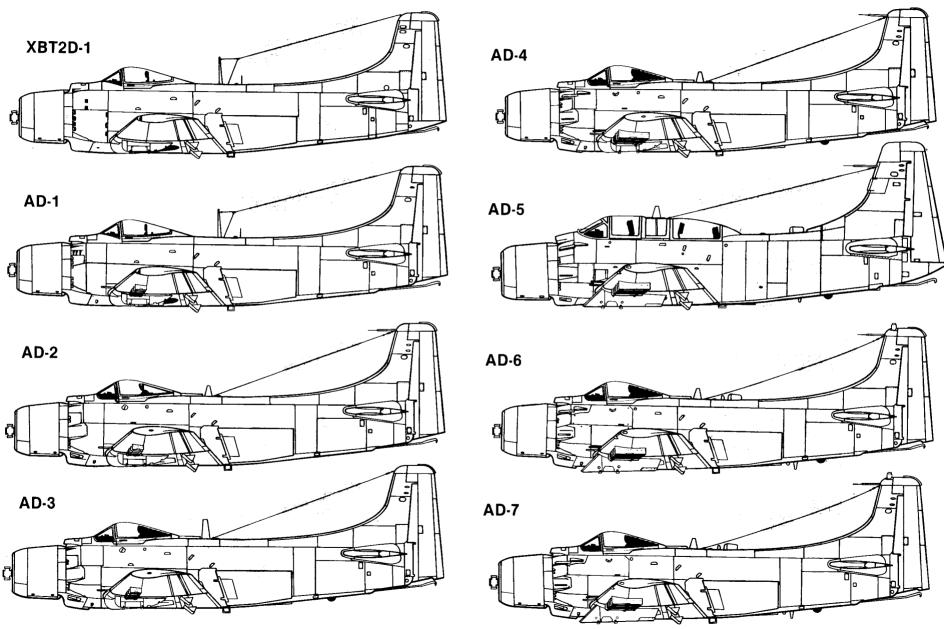
XBT2D-1 (09094) was modified for a unique experiment. The standard pair of 20мм cannon was replaced by a pair of tubes capable of liring 5 inch rockets. Each wing internally carried six rounds of spin-stabilized rockets for ground attack. This system was tested at NOTS Inyokern, CA., during 1946-47, but was not incorporated into 'fleet' aircraft. 7 June 1948. (via Hal Andrews)



station; and the 25th prototype was designated XAD-2. Of the first 25 machines only the first four were powered by the Wright R-3350-8, the balance were powered by the more powerful Wright R-3350-24W.

In February 1946, the BT2D Dauntless II was renamed the Skyraider, and in April when the Navy completely revised it's aircraft role designation system, the BT2D Skyraider became the AD Skyraider.

Development





AD-1 Skyraider

The only changes suggested by the evaluation team at Patuxent River was additional heat and oxygen for the crew, and additional lighting in the occeptia and aft compartment. The AD-I was at Fleet Air Headquarters, Alameda, California, undergoing service trials, when, during further testing of the XBT2D-I, It was discovered that after repeated carrier landings, structural weaknesses developed that required strengthening in the areas of the landing pear, wing and tail assemblies. These modifications were quickly incorporated into the AD-I series. Gross weight was 16,500 lbs. and the AD-I was powered by a R-3359-24W engine turning a 13 if t. 6 in four bladed prop. This combination produced 2500 hp. Armament was two 20w cannons (one in each wing), with provisions for six Mark 9 cockel launchers on each outer wing panel, and two bomb racks capable of carrying up to 2000 lbs. each. Maximum speed was 310 knots and range was 1350 naultical miles. By the RAD-1 series was 16 low-modified and with the AD-1 series and were the AD-1 series and the AD-1 series and completed its production run. From 1947 until mid-1948, Douglas produced two hundred forty-two AD-1 Skvariders.

Variants

AD-10 Electronic Countermeasurers (ECM) aircraft. Carried a crew of two and a gross weight of 16,900 lbs., which was the result of the addition of a compartment with-in the fuselage, just aft of the fuel cell, for the radio countermeasures operator and his equipment. Included in the ECM equipment was an AN/APR-1 Search Receiver. AD-1 (09162) from VA-3B during 1948 carrying the markings of USS Franklin D. Roosevelt. VA-3B and VA-4B, attached to CVA-42 on the FDR, were among the first operational squadrons to receive the Skyraider in April of 1947. (via Bob Esposito)

an AN/APA-11 Pulse Analyzer, an AN/APA-38 Panoramic Adapter, and a MX-356/A Window Dispenser. Besides the fuselage 'bumps' and antenna, the AD-10 was easily identified by the ECM compartment windows and doors located on the fuselage sides just aff of the cockpit area. Thirty-five AD Skyraiders were delivered in the AD-10 ECM configuration.

Carburator Intake

Early XBT2D

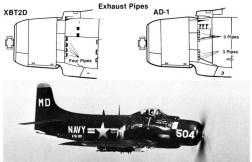
AD-1







AD-1 (09283) of VA-64 launches from the starboard cat off the USS Coral Sea. Markings are White with the tip of the tail in Yellow. 14 September 1948. (National Archives)



AD-1 (09114) of Air Training Unit-301. From this training squadron Naval aviators were assigned to Fleet units. 17 October 1952. (via Hal Andrews)

(Below) AD-1 of VA-6B, has just landed and is folding its wings while taxiing forward aboard USS Coral Sea. The horseshoe marking on the cowling is White. 20 May 1948. (National Archives)





Under Wing Attachment **Points**



XBT2D-1



AD-1 (09204) of VA-20A based at NAS Alameda, CA, flying along the Pacific coastline near San Francisco. All markings are White on glossy Sea Blue. Note the flat finish forward of the windscreen. The gun muzzle covers are still in place protecting the 20mm cannon. 2 June 1947. (Bill Larkins)

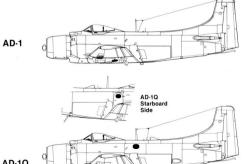
AD-1 (09192) of VA-4B from the USS Franklin D. Roosevelt, The cowl marking is a Green knight on a White shield. The pilot's name, Ens. Bill Newell, is in White forward of the canopy. A standard Mark 12 one hundred-fifty gallon drop tank on the centerline and an AN/APS-4 pod on the wing rack. Wilmington, N.C. 1949 (Paul J. McDaniel)



(Below) AD-1 (09226) of VMAT-20, a Marine training unit based at MCAS El Toro, CA. Note the canvas cover on the wing folding mechanism and a Mark 12 one hundred-fifty gallon drop tank on the wing, 1953, (via Bill Larkins)







AD-1Q (09366) from VX-1, a weapons development squadron carries an AN/APS-4 radar AD-14 (M3500) ITOM 1A-1, a weapons development squadron carries an AMAPS-4 radar pod under the port wing. The port window of the ECM operator's compartment can be seen between the White 10 and the national insignia. The ECM operator's entry hatch is on the starboard side. 6 January 1494, (National Archives)

Factory fresh AD-1Q (09354) with an ECM pod beneath each wing. The AD-1Q carried a crew of two. El Segundo, CA. August 1947. (via Hal Andrews)



AD-1Q



AD-1Q (09359) of VC-35 with an ECM bilister on the lower rear fuselage, and antennae on the bottom of the rear fuselage. Note the airscoop just aft of the radio mast. It was used to cool the ECM equipment. 1949. (via Bill Larkins)

AD-2 Skyraider

Continued structural failure caused by hard carrier landings, despite the beefing up which had already taken place, continued to plague the AD-1. These problems were solved on the AD-2, with AD-1s being rebuilt to the new standards.

The AD-2 was a much revised and improved airplane. The new 3,020 hp. R-3350-28W powerplant, capable of lifting a 6,650 lb, payload, was a major improvement. The exhaust collector ring was revised, as were the exiting exhaust pipes. With the addition of a law-ternal fuel tank, fuel capacity was increased to 500 gallions in the scouting role. The AD-2 could take off at 80 to 85 knots, would stall at 75 knots, and had a top speed of 328 knots. Alance was 1.386 nautical miles.

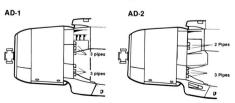
Numerous cockpit refinements were made, including a revised windscreen and canopy, and the pilots headrest was completely redesigned. Functionally designed controls (the use of a small flap for the flaps, and a small wheel for the wheels, etc.) were added. A new aerial mast and a revised short aerial wire, running directly to the fuselage, was added, and on later production AD-2s, a pitot tube was fitted to the leading edge of the fin. Hing-ed undercarriage doors were installed for the first time.

Even with all the changes and modifications, the Skyralders normal gross weight was only 16,332 lbs. One hundred seventy-eight AD-2s were delivered to the Navy.

Variante

- AD-2Q Electronic Counter Measure (ECM) aircraft with a compartment similiar to the AD-10. Even with the addition of ECM equipment and associated fuselage modifications, the -20 performed very similarly to the -2. Top speed was 31 fx nots at 18,300 ft., cruise speed was 205 mph, service ceiling was 31,500 ft., and range was 850 miles. 21 AD-20s were huilt
- AD-2QU a one of a kind modification in which a -2Q airframe (122373) was modified with provisions for target towing duties.

Exhaust Development



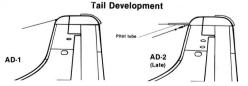


AD-2 (122225), freshly painted in the markings of VA-155, on the ramp at NAS Alameda, CA. This Skyraider was flown by the squadron C.O., LCDR. G.R. Stablein, and carried his name in White below the canopy. A new revised blade earlia mast replaced the older pole styled mast. The new aerial wire ran from the mast to the fuselage. 21 September 1948. (Bill Larkins)

Canopy Development









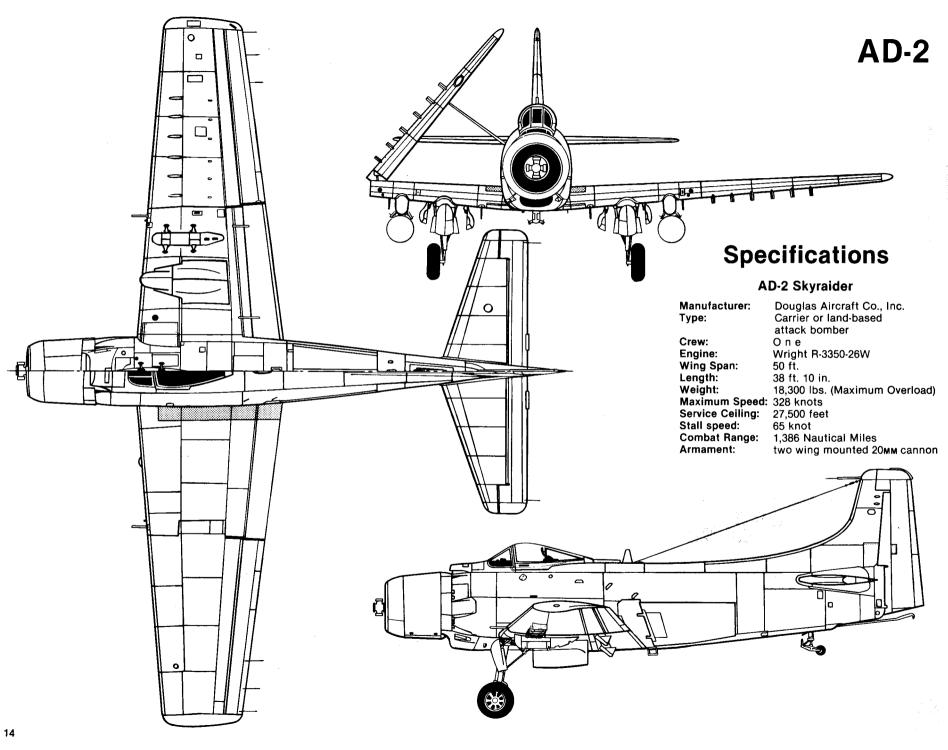
AD-2s of VMA-121 (AK-2 is serialed 122265) fly in echelon during a training flight prior to their Korean combat deployment. The mountainous terrain near MCAS EI Toro, CA., proved to be very close to the ground conditions they would encounter in Korea. (Clay Jansson via W.F. Gemeinhardt)



(Below Left) AD-2 (122225) in Korea serving with Marine Aircraft Maintenance Squadron 12 (MAMRON 12) at K-6 Pyongtaek, Korea. 13 November 1953. (Charles Trask via Bill Larkins) AD-2 (122269) of VA-65 (formerly VA-6B) makes a three-point landing at NAAS Santa Rosa, CA. VA-65 was between combat tours aboard the USS Boxer. August 1951. (Bill Larkins)





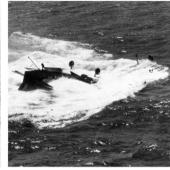




(Above) AD-2 (122231) of VA-155, goes into a torque roll after taking a wave-off by the LSO aboard the USS Valley Forge. The Skyraider splashed inverted, and the pilot was lost. 31 August 1948. (National Archives)



CARRIER CRASHES



(Below) AD-2 of VA-35, landed long aboard the USS Leyte off Korea, clipping a 5-inch gun mount with the wing. After trying desperately to fly away, the AD mushed into the ocean. The uninjured pilot was picked up immediately. 10 November 1950. (National Archives)









AD-2 (122251) of VC-33 warms-up prior to take off from NAS Atlantic City, N.J. Note the squadron insignia on the fuselage which can be seen below and in front of the wind-screen. 17 July 1951. (vil Bill Larkins)

AD-2 (122330), totes a torpedo on the centerline, a pair of 2,000 lb. bombs on the inner wing panels, and twelve 5-inch HVARs on the outer wing panels, during armament testing at the Naval Air Test Center at Patuxent Rilver. (National Archive)



(Below) AD-2 (122234) of VA-859 missed the wires and tangled with the barrier aboard USS Tarawa. The pilot is hastily exiting the burning Skyraider. 7 July 1952. (National Archives)



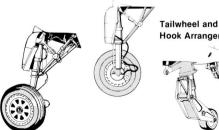


Landing gear

Main gear

AD-2 (122310) 'Jinx', of VA-702, took AA hits during strikes launched from USS Boxer. It was diverted to a Korean land base for repair. 13 June 1951. (National Archives)

during a firepower demonstration. Note how securely the lead AD is tied to the flight





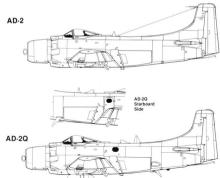
deck. May 1949. (National Archives)



AD-2Q (122366) of VF-152 is seen parked on display at the San Francisco Air Fair. The pilots name, Ens. W.B. Whitten, is painted just forward of the windscreen. Note the AN/APS-4 radar pod on the port wing. 30 October 1949, (Bill Larkin)

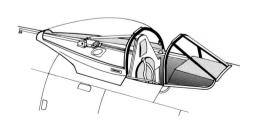
AD-2Q (122366), fresh from the production line at El Segundo, CA. It was accepted by the Navy in August of 1948 and served until January of 1952 when it was stricken from inventory. Its last duty was with VC-33. 9 August 1948, (via Hal Andrews)







AD-2 Canopy



AD-2Q (122383) of VC-33 on the flight line of NAS Norfolk, VA, where the 'Night Hawks' were stationed. Note the dull finish on the cowlings. 1949. (via Peter Mancus)

AD-2QU (122373), a one-of-a-kind conversion for target-towing duty is parked on the ramp at NOTS Invokern, CA. 1952. (via Bob Esposito)



AD-3 Skyraider

Under the designation AD-3, few changes were made. The main landing gear oleo stroke was lengthened by 14 inches. The tail wheel was revised and was no longer fully retractable, but now protruded slightly below the fuselage during flight. The propeller was improved and the cockpit was further refined. The pitot tube added to the tail of the 2 was deleted and the antenna wire was re-arranged. The bottom of rudder was changed slightly in shape. Top speed was 325 knots at 18,300 feet and range was 1,310 nautical miles. When production terminated in mid-1949, one hundred ninety-four AD-3s had been produced.

Variants

- AD-3Q ECM aircraft with a revamped ECM compartment and antenna system. Twenty-two were produced.
- AD-3W Airborne Early Warning Aircraft, a three man version with a large belly mounted radome housing search radar. This configuration was nicknamed "Guppy". Thirty-one were produced.
- AD-3E Modified from AD-3W aircraft, with special electronic equipment. Two were produced.
- AD-3N Night Attack aircraft carrying a crew of three. Fifteen were produced.
- AD-3S Anti-submarine Warfare (ASW) aircraft. Two were built from AD-3N aircraft.

AD-3 (122732), during testing at NATC Patuxent River, carrying a 2,000 lb. bomb on the centerline and an AN/APS-4 radar pod on the port wing rack. The AD-3 was capable of 325 knots. 8 March 1949. (USN via Hal Andrews)





AD-3 (122799) of VA-35 just landed on board USS Leyte off the Korean coast. The rudder tip is Green, all other markings, with the exception of the Red bar in the insignia, are White. 12 November 1950. (National Archives)

"Hefty Betty", an AD-3 (122737) from VA-923, ready to launch from USS Bon Homme Richard off the coast of Korea. This unit was called up for duly from NAS St. Louis, NO. Note the addition of a single piece exhaust glare shield just behind the cowling. October 1951, Vial John Woods)

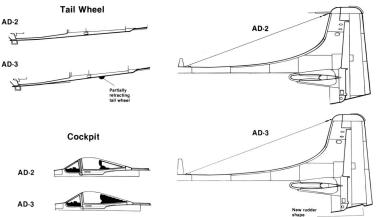




AD-3 (122805) of VC-12, gets chewed up by a landing AD-4Q (124042) of VC-33 on board USS Leyte. Both aircraft suffered strike damage, and one of the pilots was killed. 14 January 1952. (USN via Walt Ohirich)



Ens. Harold Reutebuch of VA-923 in the battle-damaged cockpit of an AD-3 (122760) aboard Bon Homme Richard. Air Group Commander H. Funk points to another AA hit. 8 July 1951. (USN via Harold Reutebuch)

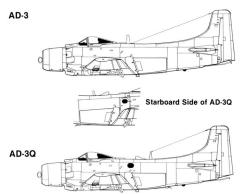


AD-3 (122875) of VC-33 has heavy AA damage to the tail section, sustained while on a mission near the Yalu River. Pilot, Ens. R.H. Rohr, made an emergency landing at Pyongyang, Korea. 24 November 1950. (National Archives)





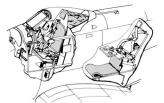
AD-3Q (122854) is factory fresh as it prepares for its Navy acceptance flight. 854 is carrying the AN/APS-4 radar pod under the port wing. El Segundo, CA. 18 May 1949. (via Hal Andrews)





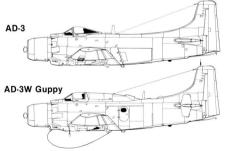
AD-3Qs (NR 60 is 122866) of VC-35 fly a starboard echelon formation. A detachment of four of these (ECM) aircraft were assigned to each Fleet carrier. 13 March 1951. (National Archives)







AD-3Ws of VC-11 form the USS Boxer have arrived at an emergency landing field in Korea bringing metalsmiths and parts to repair the damaged wing of another Skyraider. 13 June, 1951. (National Archives)



The AD-3W radome housing search radar. Note the Summer flying suits, helmets and life jackets of the crew. Also note the lack of landing gear fairings on this version. NAS Quonset Point, RI. May 1951. (National Archives)







AD-3W (122878) during Electronics Test Flight at NATC Patuxent River, MD. The -3W was a three man version designed to carry search radar and was employed as a flying fleet early warning aircraft. Because of its appearance it was nicknamed 'Guppy'. 9 November 1950. (National Archives)

(Left) AD-3W Airborne Early Warning aircrew sit side-by-side in the fuselage ECM compartment crammed with electronics gear. This aircraft is getting a thorough inspection prior to a long flight. 3 May 1951. (National Archives)

(Below) One of the two AD-3Es (122906), assigned to VX-1, a development squadron. It is airborne with an AD-3S, both aircraft were stationed at NAS Boca Chica. 31 January 1950. (National Arr.)

AD-3Ws, uses a booster generator during the extreme cold of the

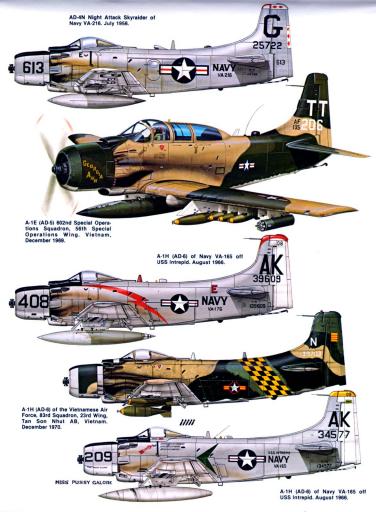
winter aboard USS Valley Forge off Korea, December 1950, (Na-



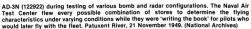


tional Archives)

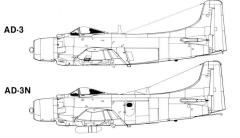








(Above Right) AD-3N (122914), marked with three White bands across the top of each wing, is an Electronics Test aircraft. Only fifteen of these -3N Night Attack aircraft were built. NATC Patuxent River. 15 March 1951. (National Archives)



(Middle Right) AD-35 (122910), one of only two machines to be modified from AD-31 nightfighter airrames to the Anti-Submarine Warfare (ASW) configuration. It carries the markings of VX-1 and is flying just off the Florida coast in the Key West area. 31 January 1950. (National Archives)

(Right) The other -3S aircraft which was modified to the ASW role, is seen during a routine check of the powerful searchlight assembly used during anti-submarine duty. NAS Boca Chica. FL. 13 June 1951. (National Archives)









AD-4 Skyraider

The AD-4 featured the installation of the new APS/19A radar that required the installation of a new instrument panel, which included a Mod 3 or Mod 4 bomb directer. A P-1 auto pilot was also installed. The windscreen was redesigned to provide for a wider builet proof glass in the windshied, and a pilot tube was again fitted to the top of the vertical fin. The powerplant was a Wright 3020 hp R-3350-25WA engine, providing a top speed of 315 knots with a range of 1,110 nautical miles. From the 210th production machine, the AD-4 was armed with an additional 20Mm cannon in each outer wing panel. Eventually most AD-4s were retrofitted with the additional 20Mm cannons. Outbreak of the Korean War brought about increased production of the AD-4 Skyraider, with 1.05 being products

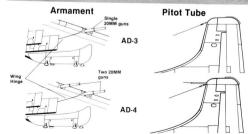
Variants

- AD-4L Winterized with de-icer boots on the leading edge of the wings, horizontal stabilizers, and fin. Sixty-three were modified.
- AD-4B Nuclear Bomber, with a special Aero 3A center line ejector rack capable of carrying atomic weapons. One hundred sixty-five were produced, which provided the Navy with it's first large scale nuclear capability.
 - D-4Q ECM aircraft. Thirty-nine were produced.
- AD-4N Night Attack aircraft. Three hundred seven were produced.
- AD-4NL Winterized Night Attack aircraft. -4Ns with de-icer boots.
- AD-4NA Day attack aircraft, AD-4N Night Attack Aircraft modified to the day attack role.
- AD-4W Airborne Early Warning aircraft. Sixty-eight were produced.

Under the Mutual Defense Assistance Program (MDAP) fifty AD-4Ws were provided to Great Britain under the designation AEW.1. From this batch, fourteen AEW.1s went to Sweden for modification as target towing aircraft. France purchased 100 AD-4 and AD-4N Skyraiders. After the Algerian war, the United States tried to re-purchase them for use in Vietnam, France gave many of their remaining Skyraiders to Camobdia instead. AD-4 of VA-728, a Reserve Squadron belonging to Air Group 15, launches from USS Antietam off the Korean coast, intent on inflicting maximum damage on railroad facilities. 25 February 1953. (National Archives)

AD-4 (129003) of H&MS-14 with the pilot strapping in for take-off. Philadelphia, PA. 1957. (via Bob Esposito)















(Above Left) View of the cockpit of AD-4 (123816). (National Ar-

chives)
(Above) Main panel and portion of right console. (National Archives)
(Above Right) The Visual display from the gunsight. (National Ar-

chives)
(Right) The Wright 3,020 hp R-3350-26WA engine. (Dave Forest)

(Below Right) Engine mount assembly. (Dave Forest)
(Below) Bomb-laden AD-4 from VA-115. (National Archives)
(Below Left) RAM rocket armed Skyraider from VA-195. (National Archives)









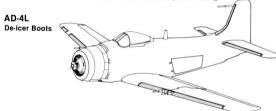
This AD-4 (12394) of VA-75 was launched from USS Bon Homme Richard, and was damaged by AA fire during a raid over Korea. The Skyraider diverted to a field near Wonsan where it made a safe emergency landing. Determined to be repairable, the AD-4 was towed to Wonsan harbor where it was loaded aboard a barge and taken out to the USS lows. It was hoisted aboard the battlewagon and eventually returned to its carrier. September 1952. (National Archives)

AD-4L (123968) of VA-728 crashed aboard USS Antietam. Shortly after this photo was taken, the Skyraider was pushed over the side. 10 July 1951. (National Archives)





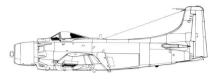
AD-4L (127852) with a load of six 5 inch rockets on each wing, an 11.75 inch "Tiny Tim" rocket under the port wing and an ECM pod under the other...this freshly-modified Skyraider was a 'winterized' version with de-icer boots on the leading edges of the wings, horizontal stabilizers and fin. A total of sixty-three AD-4s were modified to 'winterized' AD-4L standards. 1951. (via Bill Larkins)



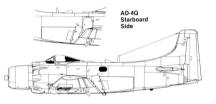
AD-4L (123981) seen after modification at the Douglas factory at El Segundo, CA. 8 March 1951. (via Hal Andrews)



AD-4



AD-4Q



(Right) AD-4Q (124055) of VF-194 lost power on take-off from the USS Boxer and ditched off the port bow. The pilot was quickly recovered unharmed. July 1953. (National Archives)

(Below) Cdr. Funk, the Commanding Officer of CAG-102 just prior to launching in his AD-4Q. Cdr. Funk led the first strike on Korean targets from USS Bon Homme Richard. This machine has not yet been retro-litted with the additional 20mm wing cannon. 1951. (John Woods via Fred Roos)

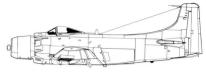


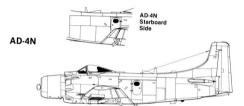
AD-4Q (124056) of CVG-17 off USS Franklin D. Roosevelt. The pilot, Cdr. W.N. Leonard made an emergency landing after the engine main seal blew. The oil covered front of the cowling is a graphic reminder of how close the race was to get the AD on the ground before the engine seized up. 1949. (Paul J. McDaniel)





AD-4





(Right) AD-4N (127014) of VX-3 during a training flight. 1953. (via Paul J. McDaniel)

(Below) "Janet", an AD-4N (125723) of VMC-1, at K-16, Korea, has a slight Blue overspray on all markings including the national insignia. The name "Janet" appears just under the nose number. Note also the replacement ECM compartment hatch with the partial Red and White bar markings. 17 February 1954. (Charles Trask via Bill Larkins)



AD-4N (125729) of VMC-3 totes large ECM pod beneath the starboard wing. This version had a three-man crew consisting of pilot, radar operator and ECM operator, MCAS El Toro, CA. 20 February 1953. (National Archives)







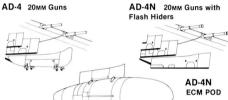
AD-4N (127011) of Fleet Air Wing Training Unit-Pacific (FAWTUPAC). Note the heavy exhaust pattern on the fuselage. 19 November 1953. (National Archives)

AD-4NL (124741) of VC-35 banks starboard. The 'NL' was modified from the AD-4N as a winterized Night Attack aircraft with de-icer boots. Note the flash shields on the 20mm guns. 6 October 1951. (National Archives)





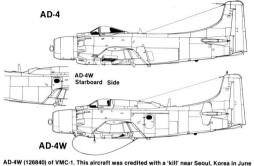
AD-4NA (127011), a night attack AD-4N converted to the day attack role, belonging to FASRON-10, is seen in the change-over paint scheme of Gray and White. On display at NAS Moffett Field, CA. 19 May 1956. (Bill Larkins)

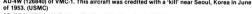


AD-4B (127871) of HEDRON AFMFPAC is armed with four 20mm cannon in the wings with 200 rounds per gun. The AD-4B had the capability of carrying atomic stores. 1952 (via W.F. Gemeinhardt)



AD-4W (127879) during flight testing at the Naval Air Test Center at Patuxent River. This three place Skyradier was equipped with special electronics gear for the Airborne Early Warning Role. 1950. (via Peter Mancus)





AD-4W (124771) of VC-12 on display at the Cleveland, Ohio National Air Races in 1951. This Skyralder was later made available to the English and was modified to an AEW-1 designation, and served with the British Fleet Air Arms as WT-967, (vie Bill Larkins)









AD-5 (A-1E) Skyraider

In the most radical revision of the "Able Dog", the AD-5 was turned into a two place attack bomber with the cockpit crew sitting side by side. To accomplish this increase in cockpit area, the fuselage was lengthened by 23 inches and a completely new canopy and windscreen were designed. To compensate for the change in center of gravity, the uprated 2700 hp R-3359-26W engine was moved forward 8 inches. The vertical tail surfaces were increased by nearly 50% and an airscoop was added to the leading edge of the fin. The antenna system was again revised and the side fuselage dive brakes were deleted. The wing pylons were enlarged and raked forward, and provisions were made for the addition of a centerline pylon, provisions were also made for carrying up to three external fuel tanks. Armament was two 20 kmu guns in each ving.

First flying 17 August, 1951, Top speed was 270 knots with a service ceiling of 26,000 feet and a combat range of 1044 nautical miles. Six hundred sixty-eight AD-5 series were produced with the last aircraft being completed in April 1956.

In the early 1960s, a number of AD-5s were acquired by the USAF's Tactical Air Command for counter insurgency work and saw duty in Vietnam. In the mid-sixties, a number of AD-5 versions were made available to the Vietnamese Air Force.

Variants

AD-5N Night Attack aircraft. One hundred thirty-eight were produced.

AD-50 Electronic Counter Measures aircraft. Fifty-four machines were converted from AD-5n aircraft for ECM work. The -5Q was the most versatile version of the Skyraider and carried the most complicated electronics ever put together at the Douglas plant. By using a kit concept, the -5 was capable of duties that even in-

AD-5 (133926) of VMA-332 "Polka Dots" is fully loaded with twelve HVARs, two 11.75 Tiny Tim rockets and a 500 lb. bomb. 1955. (via Bob Esposito)

cluded that of ambulance and troop carrier. It became known as the "12 in 1" raider.

AD-5W Airborne Early Warning aircraft. Two hundred-seventeen were produced.

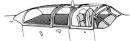
AD-5S Anti-Submarine Warfare (ASW), aircraft. One prototype was produced.

During 1962 the Navy again revised it's aircraft code designation system. The AD Skyraider became the A-1 Skyraider under the following designations.

AD-5 — A-1E AD-5W — EA-1E AD-5Q — EA-1F

Canopy Development





AD-4

AD-5





(Above) AD-5 (133929) of VA-65 from NAS Alameda, CA., is seen at NRAB Minneapolis, MN. 1956. Tail striping is alternating Medium Green and White. (Bob Stuckey)

(Left) A-1E (AD-5) (133884), with full flaps down (40 degrees), lands at Shaw AFB, SC. 30 March 1968. (Jim Sullivan)

(Right) A-1E (AD-5) (132435) of VA-125 was participating in a search mission when it developed engine problems. The pilot elected to belly-in on a snow covered glacier in the California High Sierras. The pilot was rescued by helicopter, but the aircraft was abandoned. Later the USN turned over ownership to the USAF who took the A-1E out by chopper, refurbished it, and later used it in Vietnam. February, 1969.(USN via Walt Ohlrich)





Pylon Development

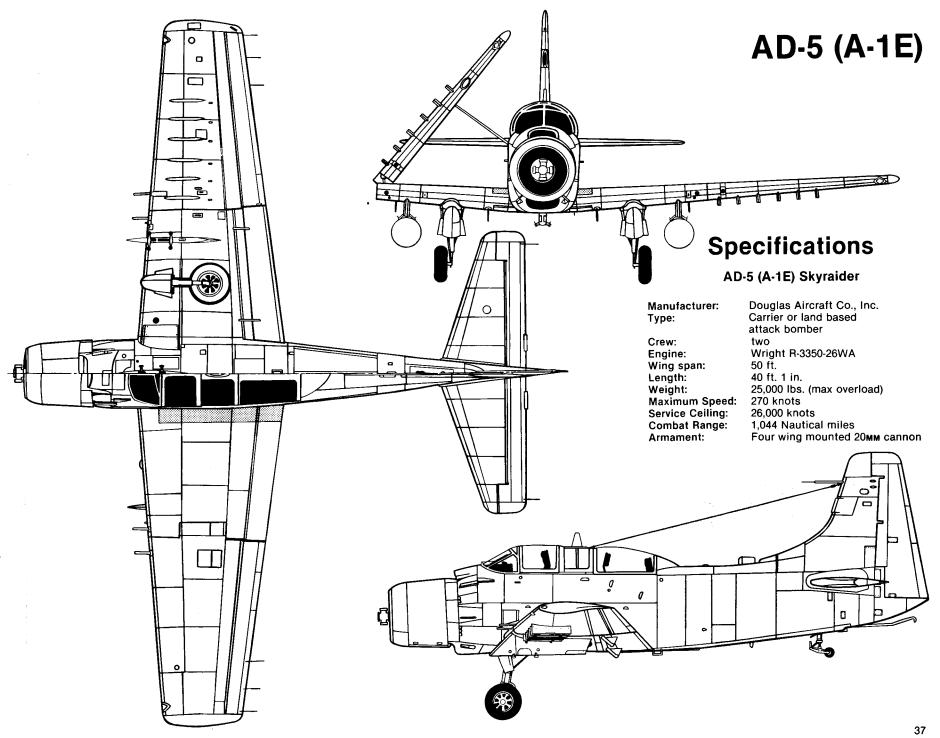
AD-5







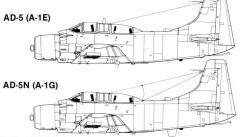
(Left) A-1E (AD-5) (132612) of 1st SOS, 14th SOW at Nha Trang AB, RVN. 1965. (R. Leavitt via Doug Slowiak)





AD-SN (132553) of VC-33 "Night Hawks". SS Modex on tail and name of squadron on the cowling are in White. The rear exceptit glass is heavily linted in Blue to screen the sensitive electronic equipment from the sun's rays. 1952. (via Peter Bowers)

(Right) AD-5N (132652) during Douglas flight test. ECM and Searchlight pods are carried on this Skyraider. 1953. (via Hal Andrews)



AD-5Ns of VMCJ-3 fly in formation near MCAS El Toro, CA. 1958. (USMC via W.F. Gemeinhardt)







AD-5N (135043) of VAAW-33 during a routine flight. A total of 238 of this night attack version were built. 1960. (via Tom Curry)



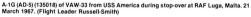
A-1G (AD-5N) (132618) of VAW-33 is flying from USS Independence. This Skyraider could carry a crew of four. 1 May 1962. (USN via Peter Mancus)



complement of under wing racks while the Navy version usually did not. 1966. (via Peter Mancus)



A major AD re-work facility was located at this Naval Air Station. 17 August 1968. (Ira Ward)



AD-50 (132506) loaded with Magnetic Anomaly Detection (MAD) gear, ECM pods and radome. Elongated fin and rudder, and fin air intake show to good advantage here. Note test boom installed on starboard wing. July 1957. (via Hal Andrews)







AD-5W (135212) seen landing during SEATO exercise 'Sea Lion' in the South China Sea. Despite the bulky radome, the AD-5W handled little differently than other Skyraiders, 5 April 1960. (USN via Hal Andrews)



AD-5W (135187) of VC-11 carries White Modex 'ND'. June 1956. (National Archives)



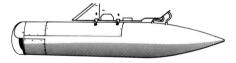
AD-5W



AD-5W Radar and Radome Arrangement



AD-5S Search Light/ECM pod and pylon mount assembly



AD-5S (132479), a one-of-kind anti-submarine hunter equipped with Magnetic Anomaly Detection (MAD) system. Note the boom housing just beneath the rudder. The Skyraider submarine-hunter project was cancelled when the Grumman hunter-killer S2F-1 Tracker was accepted. El Segundo, CA. 4 June 1953. (via Hal Andrews)





AD-6 (A-1H) Skyraider

Produced concurrently with the two place AD5, the AD6 was basically a refined AD-48 Nuclear Bomber with the capability of carrying atomic stores. The "Able Dog Six" also had the narrow fuselage, small canopy and the smaller tail surfaces of the earlier Skyraiders, but with a strengthened center section and sliftly a strength of the strength of the

Douglas produced seven hundred thirteen of this single place attack aircraft through August of 1956. The AD-6 was flown by the USN, USMC and USAF. During the mid-1960s AD-6s were made available to the VNAF.

In 1962 the AD-6 was redesignated to A-1H.

AD-6 (135315) of VA-45 comes across the ramp of Intrepid. February 1955. (National Archives)

A-1H (AD-6) (134530) of VA-165 makes a successful recovery, with hung-up ordnance, abour of Intrepid which was patrolling at 'Yankee Station' in the Gulf of Tonkin. September 1966. (USN via Walt Ohlirch)





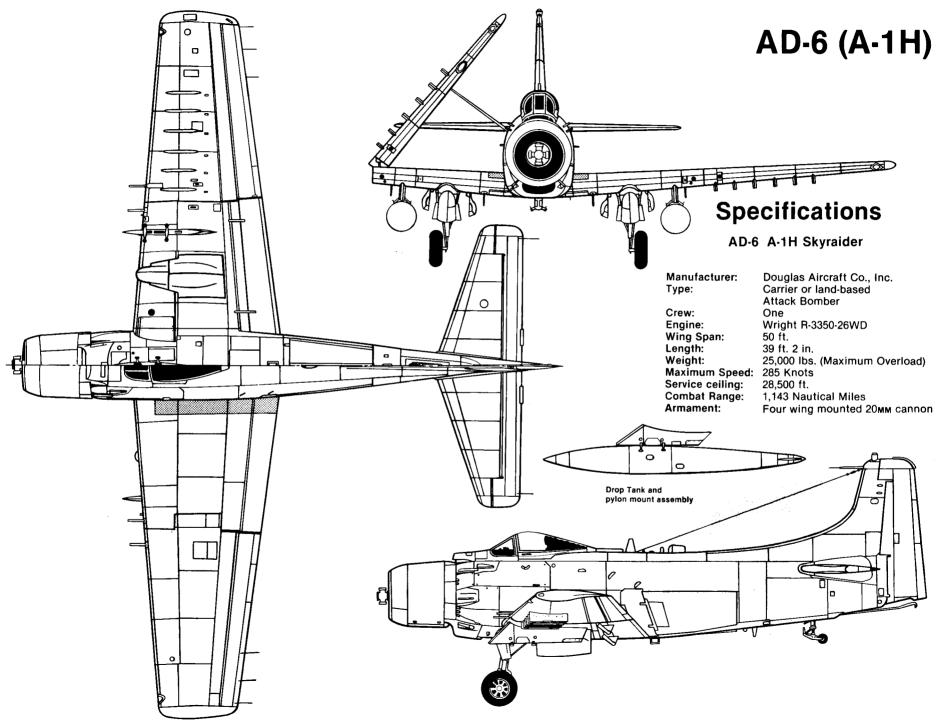
AD-6 (134488) of VA-25 launches from USS Independence in July 1959. (Tom McManus)

AD-6 (134467) of VMA-332 seen flying high over the Everglades near NAS Miami, FL. March 1956. (USMC)



(Below) AD-6 (135357) of VA-42 bolters off the angled-deck of the USS Forrstal. March 1956. (National Archives)







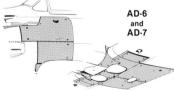


A-1H (AD-6) (134605) belonging to the Republic of Vietnam Air Force undergoing maintenance at Bien Hoa AB, RVN. 1964. (R. Leavitt via Doug Slowiak)

(Left) AD-6 (134564) of VA-196, pulling tight against the wire, recovers aboard USS Lexington. Note Red with Black trim on fin and rudder. July 1957. (National Archives)

(Right) AD-6 (137567) of VA-145 from USS Hornet, patroling over the Philippine Islands, February 1957. (National Archives)

Additional Armored Pilot Protection



(Left) AD-6 (137552) of VA-96 prepares to launch from USS Kearsarge in February 1958. (USN via Hal Andrews)

(Right) AD-6 (135305) of FASRON-4 Detachment-A at NAS Miramar, CA. 1957. (Warren Bodie)







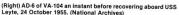


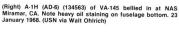
AD-6 (134608) of VMA-225 based at NAS Miami. Tail and wing tip trim is Dark Green stars on a White field with a Black band. Wilmington, NC. 1957. (Paul J. McDaniel)

AD-6 (139754) of VMA-331 carries the Black Modex 'VL'. The fin trim is Red. Note the 150 gallon wing tank. 1959. (USMC via W.F. Gemeinhardt)



(Left) A-1H (AD-6) (139746) of the Vietnamese Air Force seen in a colorful 'swept' Yellow and Black checkerboard fuselage trim. American trained Vietnamese pilots flew these Skyraiders. 27 September 1967. (via Peter Mancus)









(Left) A·1H (AD-6) (137545) of VA·196 in the markings of Air Station CO., Capt. Howard M. Avery. NAS Lemoore, CA. 25 April 1963. (USN via Bill Curry)





A-1H (AD-6) (139778) in the markings of VA-115, "The Arabs", from USS Kitty Hawk. Earlier markings are showing through the faded and peeling camouflage paint scheme. July 1986. (via Roger Bescker)

AD-6 (139799) of VA-35 aboard USS Saratoga while off the coast of Lebanon, July 1958. (USN via Hal Andrews)





A-1H (AD-6) (135332) of the 4407th CCTS, 1st SOW on the flightline at Hurlburt Field in Florida. Combat training for Vietnam was provided at this base. 1971. (Bob Esposito)

A-1H (AD-6) (135275) of VA-25 from USS Coral Sea heads inland for a strike on Vietnam. 1963. (via Roger Besecker)





AD-7 (A-1) Skyraider

The final version of the Skyraider, the AD-7, was externally identical to the AD-6. Powered by the new Wright R-3350-26WB engine, top speed was 285 knots and combat range was 1128 nautical miles. The AD-7 had the strongest landing gear, as well as strengthened wing spars and wing fittings. Because the Navy needed additional fuel tankers, the AD-7 was ordered equipped with external refueling equipment. The program was so successfull that additional refueling kits were ordered for retro-fitting to the earlier AD-5s for the tanker role.

earlier AD-s for the tanker role.

The Navy had originally planned to acquire 240 AD-7s, however, most of these were cancelled, with only 72 AD-7s being produced by Douglas. On 18 February 1957, an era came to an end, when the last piston engine Navy bomber rolled off the assembly line, an

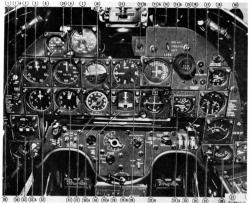
AD-7 (142081). A total of 3,180 Skyraiders had been produced.



AD-7 (142010) of VA-95, piloted by squadron CO., Cdr. Wright, has just released the cable after coming aboard USS Ranger. January 1960. (USN via Hal Andrews)

A·1J (AD-7) (142021) of VA·145 "Swordsmen", is fully loaded and on display at the Reno Air Races. 23 September 1966. (Author's Collection)





Airplanes BuNo, 139606 through 142081

1. Landing check list

1A. Marker beacon audio switch Marker beacon light

Manifold pressure gauge

Deleted Eight-day clock

Airspeed indicator

AN/APN-22 radar altimeter LABS indicator light (above shield)

Deleted

Vertical gyro indicator 11. Gunsight

11A. LABS indicator 11B. Magnetic sump plugs warning light

12. Deleted 13. Deleted

14. Standby compass 14A. LABS control panel

15. Windshield degreaser

16. Fuel quantity test switch 17. Fuel quantity indicator

Fuel pressure warning light

19. Take-off check list

22 Deleted

21. Outside air temperature switch 22A. ID-249/ARN course indicator

20. OAT-carburetor air temp, indicator

21A. Torque pressure gauge 23. Generator warning light

24. Accelerometer 25. Engine gauge unit

26. Cylinder head temperature indicator 27. ID-250/ARN course indicator

28 Rate-of-climb indicator 28A. Deleted 28B. ID-310/ARN range indicator

29. Rudder pedal adjustment crank 29A. P-1 autopilot gyro horizon

30. Turn-and-bank indicator 30A. Charthoard

31 Altimeter 32. Tachometer

32A. Water injection switch 33. Wheels and flaps position indicator

34. Ignition switch 35. Dive check list 42074 NAVY -

A-1J (AD-7) (142074) of VA-145, returning from patrol prepares to land aboard USS Constellation The 'Swordsmen' nulled combat duty in Vietnam, 20 June 1963, (USN via Bill Curry)



AD-7 (142015) of VA-122, a training squadron based at NAS Lemoore, CA., shows the underwing rack detail to good advantage, 1960, (USN via Bill Curry)

A-1J (AD-7) (142076) of 1st Special Operations Squadron (SOS) 56th Special Operations Wing (SOW). Note the deletion of the national insignia. This fully-loaded Skyraider is seen near Laos, C. 1966, (via Don Jav)





A2D-1 Skyshark

Under the designation A2D-1 Skyshark, the AD-3 airframe was mated to an Allison T-40 turborpore engine turning two massive Aeroproducts confirs-rotating propellers. The T-40 was essentially two side-by-side turbojet engines mounted through gearing to the propeller shafts. Additional power was developed from the engines jet thrust vented through exhaust ports on each side of the fuselage just behind the wing root. To conserve fuel during flight, one of the two engines could be shut down. The Skyshark was equipped with an ejection seat for pilot escape. Six examples were built and tested, but difficulties in engine development, reduction gearing and the counter-rotating props caused the projects termination.



A2D-1 (125482) at the Naval Air Test Center at Patuxent River, MD. This Skyshark was stricken from the Navy inventory in February 1954. (via Pete Bowers)



