**Attack Aircraft**

From Wikipedia, the free encyclopedia

An [A-10 Thunderbolt II](https://en.wikipedia.org/wiki/A-10_Thunderbolt_II) flies past the effects of an [AGM-65 Maverick](https://en.wikipedia.org/wiki/AGM-65_Maverick) it fired during a [close air support](https://en.wikipedia.org/wiki/Close_air_support) training exercise

An **attack aircraft**, **strike aircraft**, or **attack bomber**, is a tactical [military aircraft](https://en.wikipedia.org/wiki/Military_aircraft) that has a primary role of carrying out [airstrikes](https://en.wikipedia.org/wiki/Airstrikes) with greater precision than [bombers](https://en.wikipedia.org/wiki/Bomber), and is prepared to encounter strong low-level [air defenses](https://en.wikipedia.org/wiki/Air_defense) while pressing the attack. This class of aircraft is designed mostly for [close air support](https://en.wikipedia.org/wiki/Close_air_support) and naval air-to-surface missions, overlapping the [tactical bomber](https://en.wikipedia.org/wiki/Tactical_bombing) mission. Designs dedicated to non-naval roles are often known as **ground-attack aircraft**. [Fighter aircraft](https://en.wikipedia.org/wiki/Fighter_aircraft) often carry out the attack role although they would not be considered attack aircraft *per se*, although [fighter-bomber](https://en.wikipedia.org/wiki/Fighter-bomber) conversions of those same aircraft would be considered part of the class. [Strike fighters](https://en.wikipedia.org/wiki/Strike_fighter), which have effectively replaced the fighter-bomber and light bomber concepts, also differ little from the broad concept of an attack aircraft.

The dedicated attack aircraft as a separate class existed primarily during and after [World War II](https://en.wikipedia.org/wiki/World_War_II). The precise implementation varied from country to country, and was handled by a wide variety of designs. In the US and UK, attack aircraft were generally based on [light bombers](https://en.wikipedia.org/wiki/Light_bomber), sometimes carrying heavier forward-firing weapons like the [B-25G](https://en.wikipedia.org/wiki/North_American_B-25_Mitchell#Use_as_a_gunship) and [Mosquito Tsetse](https://en.wikipedia.org/wiki/De_Havilland_Mosquito). In Germany and USSR, where they were known as *schlachtflugzeug* ("battle aircraft") or *shturmovik* ("storm trooper"), this role was carried out by aircraft such as the [Henschel Hs 129](https://en.wikipedia.org/wiki/Henschel_Hs_129) and [Ilyushin Il-2](https://en.wikipedia.org/wiki/Ilyushin_Il-2), purpose-designed and heavily armored. The Germans and Soviets also used light bombers in this role, cannon armed versions of the [Ju 87](https://en.wikipedia.org/wiki/Junkers_Ju_87) greatly outnumbered the Hs 129, while the [Pe-2](https://en.wikipedia.org/wiki/Petlyakov_Pe-2) was used for this role in spite of not being specifically designed for it.

In the late-war era, the fighter-bomber began to take over many attack roles, a change that continued in the post-war era. Jet powered examples were relatively rare, but not unknown, like the [Blackburn Buccaneer](https://en.wikipedia.org/wiki/Blackburn_Buccaneer). The [US Navy](https://en.wikipedia.org/wiki/US_Navy) continued to introduce new aircraft in their A-series, but these were purely light bombers. The need for this design category was greatly diminished by the introduction of [precision-guided munitions](https://en.wikipedia.org/wiki/Precision-guided_munition), which allowed almost any aircraft to carry out this role while remaining safe at high altitude, while the [attack helicopter](https://en.wikipedia.org/wiki/Attack_helicopter) took over many of the remaining roles that could only be carried out at lower altitudes. Since the 1960s, only two dedicated attack aircraft designs have been widely introduced, the US [A-10 Thunderbolt II](https://en.wikipedia.org/wiki/Fairchild_Republic_A-10_Thunderbolt_II) and Soviet [Sukhoi Su-25](https://en.wikipedia.org/wiki/Sukhoi_Su-25) Frogfoot. One oddity belonging to this class is the [AC-130](https://en.wikipedia.org/wiki/AC-130), which features as its primary armament high-caliber [artillery](https://en.wikipedia.org/wiki/Artillery) guns adapted for aircraft use, including the 105 mm [M102](https://en.wikipedia.org/wiki/M102_howitzer) howitzer.

A variety of **light attack aircraft** exist, usually based on adapted [trainers](https://en.wikipedia.org/wiki/Trainer_%28aircraft%29) or other light fixed-wing aircraft.

**Definition and designations**

**United States definition and designations**

[A-6 Intruder](https://en.wikipedia.org/wiki/A-6_Intruder) in the front, [A-7 Corsair](https://en.wikipedia.org/wiki/A-7_Corsair) in the background, 1970

Presently, U.S. attack aircraft are identified by the prefix **A-**, as in "[A-6 Intruder](https://en.wikipedia.org/wiki/A-6_Intruder)". However, until the end of [World War II](https://en.wikipedia.org/wiki/World_War_II) the *A-* designation was shared between attack planes and [light bombers](https://en.wikipedia.org/wiki/Light_bomber) for the [Army aircraft](https://en.wikipedia.org/wiki/USAAC) (as opposed to *B-* prefix for medium or heavy bombers). The US Navy used a [separate designation system](https://en.wikipedia.org/wiki/1922_United_States_Navy_aircraft_designation_system) and at the time preferred to call similar aircraft scout bombers (SB) or torpedo bombers (TB or BT).For example, [Douglas SBD Dauntless](https://en.wikipedia.org/wiki/Douglas_SBD_Dauntless) scout bomber, was designated A-24 when used by the USAAF. It was not until 1946 when US Navy started using "attack" (A) designation, when it renamed [BT2D Skyraider](https://en.wikipedia.org/wiki/BT2D_Skyraider) and [BTM Mauler](https://en.wikipedia.org/wiki/BTM_Mauler) to, respectively, AD Skyraider and AM Mauler.

As with many aircraft classifications, the definition of *attack aircraft* is somewhat vague and has tended to change over time. Current U.S. [military doctrine](https://en.wikipedia.org/wiki/Military_doctrine) defines it as an aircraft which most likely performs an *attack mission*, more than any other kind of mission. *Attack mission* means, in turn, specifically tactical air-to-ground action—in other words, neither air-to-air action nor [strategic bombing](https://en.wikipedia.org/wiki/Strategic_bombing) is considered an *attack mission*. In [United States Navy](https://en.wikipedia.org/wiki/United_States_Navy) vocabulary, the alternative designation for the same activity is a *strike mission*. Attack missions are principally divided into two categories: [air interdiction](https://en.wikipedia.org/wiki/Air_interdiction) and [close air support](https://en.wikipedia.org/wiki/Close_air_support).

In the last several decades, the rise of the ubiquitous [multi-role fighter](https://en.wikipedia.org/wiki/Multi-role_fighter) has created some confusion about the difference between attack and fighter aircraft. According to the current U.S. designation system, an attack aircraft (*A*) is designed primarily for air-to-surface (Attack: Aircraft designed to find, attack, and destroy land or sea targets). missions (also known as "attack missions"), while a fighter category *F* incorporates not only aircraft designed primarily for air-to-air combat, but additionally "F - Fighter Aircraft were designed to intercept and destroy other aircraft or missiles. Includes multipurpose aircraft also designed for ground support missions such as interdiction and close air support. multipurpose aircraft designed also for ground-attack missions. Just to mention one example amongst many, the [F-111 "Aardvark"](https://en.wikipedia.org/wiki/General_Dynamics_F-111) was designated *F* despite having only minimal air-to-air capabilities. Only a single aircraft in the USAF's current inventory bears a simple, unmixed "A" designation: the A-10 Thunderbolt II.

**Other designations**

[RAF](https://en.wikipedia.org/wiki/RAF) [Harrier GR9](https://en.wikipedia.org/wiki/Harrier_GR9) in flight, 2008

[British designations](https://en.wikipedia.org/wiki/British_military_aircraft_designation_systems) have included FB for fighter-bomber and more recently "G" for "Ground-attack" as in [Harrier](https://en.wikipedia.org/wiki/Hawker_Siddeley_Harrier) GR1 (meaning "Ground-attack/Reconnaissance, [Mark](https://en.wikipedia.org/wiki/Mark_%28designation%29) 1").

The [NATO reporting names](https://en.wikipedia.org/wiki/NATO_reporting_name) for Soviet/Russian ground-attack aircraft at first started with "B" categorizing them as bombers, as in case of [Il-10](https://en.wikipedia.org/wiki/Ilyushin_Il-10) 'Beast'. But later they were usually classified as fighters ("F")—possibly because (since [Sukhoi Su-7 Fitter](https://en.wikipedia.org/wiki/Sukhoi_Su-7_Fitter)) they were similar in size and visual appearance to Soviet fighters, or were simply derivatives of such.

**History**

**World War I**

[Junkers J.I](https://en.wikipedia.org/wiki/Junkers_J.I) featuring its armored "bathtub".

The attack aircraft as a role was defined by its use during World War I, in support of ground forces on battlefields. Battlefield support is generally divided into [close air support](https://en.wikipedia.org/wiki/Close_air_support) and [battlefield air interdiction](https://en.wikipedia.org/wiki/Battlefield_air_interdiction), the first requiring strict and the latter only general cooperation with friendly surface forces. though such aircraft also attacked targets in rear areas. Such missions required flying where light anti-aircraft fire was expected and operating at low altitudes to precisely identify targets. Other roles, including those of light bombers, medium bombers, dive bombers, reconnaissance, fighters, fighter-bombers, could and did perform air strikes on battlefields. All these types could significantly damage ground targets from a low level flight, either by bombing, machine guns, or both.

Attack aircraft came to diverge from bombers and fighters. While bombers could be used on a battlefield, their slower speeds made them extremely vulnerable to ground fire, as did as the lighter construction of fighters. The survivability of attack aircraft was guaranteed by their speed/power, protection (i.e. armor) and strength of construction;

Germany was the first country to produce dedicated ground-attack aircraft (designated [CL-class](https://en.wikipedia.org/wiki/Idflieg_aircraft_designation_system) and [J-class](https://en.wikipedia.org/wiki/Idflieg_aircraft_designation_system)). They were put into use in autumn 1917, during [World War I](https://en.wikipedia.org/wiki/World_War_I). Most notable was the [Junkers J.I](https://en.wikipedia.org/wiki/Junkers_J.I), which pioneered the idea of an armored "bathtub", that was both fuselage structure and protection for engine and crew. The British experimented with the [Sopwith TF series](https://en.wikipedia.org/wiki/Sopwith_Salamander) (termed "trench fighters"), although these did not see combat.

The last battles of 1918 on the Western Front demonstrated that ground-attacking aircraft were a valuable component of all-arms tactics. Close-support ground-strafing (machine-gunning) and tactical bombing of infantry (especially when moving between trenches and along roads), machine-gun posts, artillery, and supply formations was a part of the Allied armies' strength in holding German attacks and supporting Allied counter-attacks and offensives. Admittedly, the cost to the Allies was high, with the [Royal Flying Corps](https://en.wikipedia.org/wiki/Royal_Flying_Corps) sustaining a loss rate approaching 30% among ground-attack aircraft.

**1919–1939**

After WWI, it was widely believed that using aircraft against tactical targets was of little use other than in harassing and undermining enemy morale; attacking combatants was generally much more dangerous to aircrews than their targets, a problem that was continually becoming more acute with the ongoing refinement of [anti-aircraft weapons](https://en.wikipedia.org/wiki/Anti-aircraft_warfare). Within the range of types serving attack roles, [dive bombers](https://en.wikipedia.org/wiki/Dive_bombers) were coming to be seen as more effective than aircraft designed for [strafing](https://en.wikipedia.org/wiki/Strafe) with machine-guns or cannons.

Boeing GA-1. ~1920

Nevertheless, during the 1920s, the US military, in particular, procured specialized "Attack" aircraft and formed dedicated units, that were trained primarily for that role. The US Army [Engineering Division](https://en.wikipedia.org/wiki/Engineering_Division) became involved in designing ground attack aircraft. The 1920 [Boeing GA-1](https://en.wikipedia.org/wiki/Boeing_GA-1) was an armored twin-engine triplane for ground strafing with eight machine guns and about a ton of Armour plate, and the 1922 [Aeromarine PG-1](https://en.wikipedia.org/wiki/Aeromarine_PG-1) was a combined pursuit (fighter) and ground attack design with a 37mm gun. The [United States Marine Corps Aviation](https://en.wikipedia.org/wiki/United_States_Marine_Corps_Aviation) applied [close air support](https://en.wikipedia.org/wiki/Close_air_support) tactics in the [Banana Wars](https://en.wikipedia.org/wiki/Banana_Wars). While they did not pioneer dive bombing tactics, Marine aviators were the first to include it in their doctrine during the [United States occupation of Haiti](https://en.wikipedia.org/wiki/United_States_occupation_of_Haiti) and [Nicaragua](https://en.wikipedia.org/wiki/United_States_occupation_of_Nicaragua). The [United States Army Air Corps](https://en.wikipedia.org/wiki/United_States_Army_Air_Corps) was notable for its creation of a separate "A-" designation for attack types, distinct from and alongside "B-" for bomber types and "P-" for pursuit (later replaced by "F-" for fighter) aircraft. The first designated attack type to be operational with the USAAC was the [Curtiss A-2 Falcon](https://en.wikipedia.org/wiki/Curtiss_Falcon). Nevertheless, such aircraft, including the A-2's replacement, the [Curtiss A-12 Shrike](https://en.wikipedia.org/wiki/Curtiss_A-12_Shrike), were unarmored and highly vulnerable to AA fire.

The British [Royal Air Force](https://en.wikipedia.org/wiki/Royal_Air_Force) focused primarily on strategic bombing, rather than ground attack. However, like most air arms of the period it did operate attack aircraft, named Army Cooperation in RAF parlance, which included the [Hawker Hector](https://en.wikipedia.org/wiki/Hawker_Hector), [Westland Lysander](https://en.wikipedia.org/wiki/Westland_Lysander) and others.

Henschel Hs 129, ~1942

During the 1930s, Nazi Germany had begun to field a class of *Schlacht* ("battle") aircraft, such as the [Henschel Hs 123](https://en.wikipedia.org/wiki/Henschel_Hs_123). Moreover, the experiences of German [Condor Legion](https://en.wikipedia.org/wiki/Condor_Legion) during the [Spanish Civil War](https://en.wikipedia.org/wiki/Spanish_Civil_War), against an enemy with few fighter aircraft, changed ideas about ground attack. Though equipped with generally unsuitable designs such as the [Henschel Hs 123](https://en.wikipedia.org/wiki/Henschel_Hs_123) and [cannon](https://en.wikipedia.org/wiki/Autocannon)-armed versions of the [Heinkel He 112](https://en.wikipedia.org/wiki/Heinkel_He_112), their armament and pilots proved that aircraft were a very effective weapon, even without bombs. This led to some support within the Luftwaffe for the creation of an aircraft dedicated to this role, resulting in tenders for a new "attack aircraft". This led to the introduction (in 1942) of a unique single-seat, twin-engine attack aircraft, the slow-moving but heavily-armored and formidably-armed [Henschel Hs 129](https://en.wikipedia.org/wiki/Henschel_Hs_129) *Panzerknacker* ("Safecracker" /"Tank Cracker").

In Japan, the [Imperial Japanese Navy](https://en.wikipedia.org/wiki/Imperial_Japanese_Navy) had developed the [Aichi D3A](https://en.wikipedia.org/wiki/Aichi_D3A) dive bomber (based on the [Heinkel He 70](https://en.wikipedia.org/wiki/Heinkel_He_70)) and the [Mitsubishi B5M](https://en.wikipedia.org/wiki/Mitsubishi_B5M) light attack bomber. Both, like their US counterparts, were lightly-armored types, and were critically reliant on surprise attacks and the absence of significant fighter or AA opposition.

An [Ilyushin Il-2](https://en.wikipedia.org/wiki/Ilyushin_Il-2) *Shturmovik* formation of over Berlin, May 1945.

Perhaps the most notable attack type to emerge during the late 1930s was the [Soviet](https://en.wikipedia.org/wiki/Soviet_Union) [Ilyushin Il-2](https://en.wikipedia.org/wiki/Ilyushin_Il-2) *Sturmovik*, which became the most-produced military aircraft type in history.

As World War II approached, the concept of an attack aircraft was not well-defined and various air services used many different names for widely-differing types, all performing similar roles (sometimes in tandem with non-attack roles of bombers, fighters, reconnaissance and other roles.

Army co-operation

Main article: [Army co-operation](https://en.wikipedia.org/wiki/Army_co-operation)

The British concept of a light aircraft mixing all the roles that required extensive communication with land forces: reconnaissance, liaison, [artillery spotting](https://en.wikipedia.org/wiki/Artillery_spotting), aerial supply, and, last but not least, occasional strikes on the battlefield. The concept was similar to front-line aircraft used in the World War I, which was called the [CL](https://en.wikipedia.org/wiki/Idflieg_aircraft_designation_system) class in the German Empire. Eventually the RAF's experience showed types such as [Westland Lysander](https://en.wikipedia.org/wiki/Westland_Lysander) to be unacceptably vulnerable and it was replaced by faster fighter types for photoreconnaissance, and light aircraft for artillery spotting.

Light bomber

Main article: [Light bomber](https://en.wikipedia.org/wiki/Light_bomber)

During the inter-war period, the British considered that in a future war it would be France that would be the enemy. For the light day bomber they had the [Fairey Battle](https://en.wikipedia.org/wiki/Fairey_Battle) which originated in a 1932 specification. Designs in 1938 for a replacement were adapted as a target tug. The last [British specification](https://en.wikipedia.org/wiki/List_of_Air_Ministry_specifications) issued for a light bomber was B.20/40 described as a "Close Army Support Bomber" capable of dive bombing and photoreconnaissance. However, the specification was dropped before an aircraft went into production.

Dive bomber

Main article: [Dive bomber](https://en.wikipedia.org/wiki/Dive_bomber)

In some air services, dive bombers did not equip ground-attack units, but were treated as a separate class. In Nazi Germany, the Luftwaffe distinguished between the *Stuka* (*Sturzkampf-*, "dive bombing") units, equipped with [Junkers Ju 87](https://en.wikipedia.org/wiki/Junkers_Ju_87) from *Schlacht* ("battle") units, using strafing/low-level bombing types such as the [Henschel Hs 123](https://en.wikipedia.org/wiki/Henschel_Hs_123)).

Fighter-bomber

Main article: [fighter-bomber](https://en.wikipedia.org/wiki/Fighter-bomber)

Although not a synonymous class with ground-attack aircraft, fighter-bombers were usually used for the role, and proved to excel at it, even when they were only lightly armored. The Royal Air Forceand [United States Army Air Forces](https://en.wikipedia.org/wiki/United_States_Army_Air_Forces) relegated obsolescent fighters to this role, while cutting-edge fighters would serve as [interceptors](https://en.wikipedia.org/wiki/Interceptor_aircraft) and establish [air superiority](https://en.wikipedia.org/wiki/Air_superiority).

The [United States Navy](https://en.wikipedia.org/wiki/United_States_Navy), in distinction to the USAAF, preferred the older term "Scout-Bomber", under a "SB-" designation, such as the [Curtiss SB2C Helldiver](https://en.wikipedia.org/wiki/Curtiss_SB2C_Helldiver).

**World War II**

Junkers Ju 87B dropping bombs

The [Junkers Ju 87s](https://en.wikipedia.org/wiki/Junkers_Ju_87) of the German Luftwaffe became virtually synonymous with close air support during the early months of WW2. The British Commonwealth's [Desert Air Force](https://en.wikipedia.org/wiki/Desert_Air_Force), led by Arthur Tedder, became the first Allied tactical formation to emphasize the attack role, usually in the form of single-engine [Hawker Hurricane](https://en.wikipedia.org/wiki/Hawker_Hurricane) and [Curtiss P-40](https://en.wikipedia.org/wiki/Curtiss_P-40) fighter-bombers or specialized "tank-busters", such as the Hurricane Mk IID, armed with two 40 mm [Vickers S guns](https://en.wikipedia.org/wiki/Vickers_S_gun) (notably [No. 6 Squadron RAF](https://en.wikipedia.org/wiki/No._6_Squadron_RAF)).

At around the same time, a massive invasion by Axis forces had forced the Soviet air forces to quickly expand their army support capacity, such as the [Ilyushin Il-2](https://en.wikipedia.org/wiki/Ilyushin_Il-2) Sturmovik. The women pilots known as the "[Night Witches](https://en.wikipedia.org/wiki/Night_Witches)" utilized an obsolescent, wooden light trainer biplane type, the [Polikarpov Po-2](https://en.wikipedia.org/wiki/Polikarpov_Po-2) and small anti-personnel bombs in "harassment bombing" attacks that proved difficult to counter.

Wartime experience showed that poorly-armored and/or lightly-built, pre-war types were unacceptably vulnerable, especially to fighters. Nevertheless, skilled crews could be highly successful in those types, such as the leading *Stuka* ace, [Hans-Ulrich Rudel](https://en.wikipedia.org/wiki/Hans-Ulrich_Rudel), who claimed 500 tanks, a battleship, a cruiser, and two destroyers in 2,300 combat missions.

The [Bristol Beaufighter](https://en.wikipedia.org/wiki/Bristol_Beaufighter), based on a lackluster RAF bomber, became perhaps the most versatile twin-engine attack aircraft used by the Western Allies. Beaufighters served in almost every theatre of the war, in both the maritime strike and ground attack roles (as well as that of night fighter).

Conversely, some mid-war attack types emerged as adaptations of fighters, including several versions of the German [Focke-Wulf Fw 190](https://en.wikipedia.org/wiki/Focke-Wulf_Fw_190), the British [Hawker Typhoon](https://en.wikipedia.org/wiki/Hawker_Typhoon) and the US [Republic P-47 Thunderbolt](https://en.wikipedia.org/wiki/Republic_P-47_Thunderbolt). The Typhoon, which was disappointing as a fighter, due to poor high altitude performance, was very fast at low altitudes and thus became the RAF's premier ground attack fighter. It was armed with four 20mm cannon, augmented first with bombs, then rockets. Likewise the P-47 was designed and intended for use as a high altitude bomber escort, but gradually found that role filled by the [P-51 Mustang](https://en.wikipedia.org/wiki/P-51_Mustang) (because of its much longer range and greater maneuverability). The P-47 was also heavier and more robust than the P-51 and regarded therefore, as an "[energy fighter](https://en.wikipedia.org/wiki/Basic_fighter_maneuvers#Specific_energy)": ideal for high-speed dive-and-climb tactics, including strafing attacks. Its strength gave it a greater ability to absorb battle damage and its armament of eight 0.50 caliber machine guns was devastating to Axis infantry and light vehicles in both Europe and the Pacific.

[P-47 Thunderbolt](https://en.wikipedia.org/wiki/P-47_Thunderbolt) in flight firing rockets.

While machine guns and cannon were initially sufficient, the evolution of well-armored tanks required heavier weapons. To augment bombs, [high explosive rockets](https://en.wikipedia.org/wiki/Missile) were introduced by although these unguided projectiles were still "barely adequate", because of their inaccuracy. For the British [RP3](https://en.wikipedia.org/wiki/RP-3), one hit per sortie was considered acceptable. However, even a near miss with rockets could cause damage or injuries to "soft targets" and patrols by Allied rocket-armed aircraft over Normandy disrupted or even completely paralyzed German road traffic. They also affected morale, because even the prospect of a rocket attack was unnerving.

The ultimate development of the cannon-armed light attack aircraft was the small production run in 1944 of the [Henschel Hs 129](https://en.wikipedia.org/wiki/Henschel_Hs_129)B-3, armed with a modified [PAK 40 75 mm](https://en.wikipedia.org/wiki/7.5_cm_Pak_40) anti-tank gun. This weapon, the *Bordkanone BK 7,5*, was the most powerful forward-firing weapon fitted to a production [military aircraft](https://en.wikipedia.org/wiki/Military_aircraft) during World War II. The only other aircraft to be factory-equipped with similar guns were the 1,420 maritime strike variants of the North American [B-25 Mitchell](https://en.wikipedia.org/wiki/North_American_B-25_Mitchell#Variants)G/H, which mounted either a [M4 cannon](https://en.wikipedia.org/wiki/75_mm_Gun_M2/M3/M6), or light-weight T13E1 or M5 versions of the same gun. These weapons, however, were hand-loaded, had shorter barrels and/or a lower [muzzle velocity](https://en.wikipedia.org/wiki/Muzzle_velocity) than the BK 7,5 and, therefore, poorer armor penetration, accuracy and rate of fire. (The BK 7,5 was unsurpassed as an aircraft-fitted gun until 1971, when the four-engine [Lockheed AC-130](https://en.wikipedia.org/wiki/Lockheed_AC-130)E Spectre – equipped with a 105 mm [M102 howitzer](https://en.wikipedia.org/wiki/M102_howitzer) – entered service with the US Air Force.)

**Post-World War II**

[Su-22M4K](https://en.wikipedia.org/wiki/Sukhoi_Su-17) in the markings of the 7th Tactical Sqn. of the [Polish Air Force](https://en.wikipedia.org/wiki/Polish_Air_Force)

In the immediate post war era the piston-engined ground-attack aircraft remained useful since all of the early jets lacked endurance due to the fuel consumption rates of the jet engines. The higher powered piston engine types that had been too late for World War II were still capable of holding their own against the jets as they were able to both out accelerate and out maneuver the jets. The [Royal Navy](https://en.wikipedia.org/wiki/Royal_Navy) [Hawker Sea Fury](https://en.wikipedia.org/wiki/Hawker_Sea_Fury) fighters and the U.S. [Vought F4U Corsair](https://en.wikipedia.org/wiki/Vought_F4U_Corsair) and [Douglas A-1 Skyraider](https://en.wikipedia.org/wiki/Douglas_A-1_Skyraider) were operated during the [Korean War](https://en.wikipedia.org/wiki/Korean_War) while the latter continued to be used throughout the [Vietnam War](https://en.wikipedia.org/wiki/Vietnam_War).

Most of the post-World War II era air forces have been reluctant to develop fixed-wing jet aircraft specifically for ground-attack. Although close air support and interdiction remain crucial to the modern battlefield, attack aircraft are less glamorous than fighters, and both pilots and military planners have a certain well-cultivated contempt for 'mud-movers.' More practically, the cost of a specialized ground-attack aircraft is harder to justify as opposed to having [multirole combat aircraft](https://en.wikipedia.org/wiki/Multirole_combat_aircraft). This by no means meant that there were no jet attack aircraft designed; the [Douglas A-3 Skywarrior](https://en.wikipedia.org/wiki/Douglas_A-3_Skywarrior) and [North American A-5 Vigilante](https://en.wikipedia.org/wiki/North_American_A-5_Vigilante) were designed for aircraft carrier-based nuclear strike roles, while the [Grumman A-6 Intruder](https://en.wikipedia.org/wiki/Grumman_A-6_Intruder), [Vought A-7 Corsair II](https://en.wikipedia.org/wiki/Vought_A-7_Corsair_II), [Sukhoi Su-25](https://en.wikipedia.org/wiki/Sukhoi_Su-25), A-10 Thunderbolt, [Panavia Tornado](https://en.wikipedia.org/wiki/Panavia_Tornado), [AMX](https://en.wikipedia.org/wiki/AMX_International_AMX), [Dassault Etendard](https://en.wikipedia.org/wiki/Dassault_%C3%89tendard_IV) and [Super Etendard](https://en.wikipedia.org/wiki/Dassault_Super_Etendard) and numerous other less-well-known aircraft have been designed specifically for ground-attack, strike, close-support and anti-armor work, with little or no air-to-air capability integrated into the design. More recently, apart from the multi-role fighter aircraft often employed, ground attack has become a task of converted trainers, like the [BAE Hawk](https://en.wikipedia.org/wiki/BAE_Hawk) or [Aero L-39 Albatros](https://en.wikipedia.org/wiki/Aero_L-39_Albatros), and many trainers are built with this task in mind, like the [CASA 101](https://en.wikipedia.org/wiki/CASA_101) or the [Aermacchi MB-339](https://en.wikipedia.org/wiki/Aermacchi_MB-339). These are popular with air forces which cannot afford to purchase more expensive multi-role aircraft, or who don't wish to risk the few they have obtained on risky ground attack missions.

The division of aircraft between the [U.S. Army](https://en.wikipedia.org/wiki/United_States_Army) and the [U.S. Air Force](https://en.wikipedia.org/wiki/United_States_Air_Force), was that latter had been generally allocated all fixed-wing aircraft, while helicopters were under control of the former; this was governed by the [Key West Agreement](https://en.wikipedia.org/wiki/Key_West_Agreement). The Army, wishing to have its own resources to support its troops in combat and faced with a lack of Air Force enthusiasm for the ground-attack role, developed the dedicated attack helicopter.

**Recent history**

[AH-64 Apache](https://en.wikipedia.org/wiki/AH-64_Apache) landing, 2012

[Panavia Tornado IDS](https://en.wikipedia.org/wiki/Panavia_Tornado) of the [Luftwaffe](https://en.wikipedia.org/wiki/German_Air_Force) at [Holloman AFB](https://en.wikipedia.org/wiki/Holloman_Air_Force_Base), New Mexico

On 17 January 1991, Task Force Normandy began its attack on two Iraqi anti-aircraft missile sites. TF Normandy, under the command of LTC Richard A. "Dick" Cody, consisted of nine [AH-64 Apaches](https://en.wikipedia.org/wiki/AH-64_Apache), one UH-60 Black Hawk and four Air Force MH-53J Pave Low helicopters. The purpose of this mission was to create a safe corridor through the Iraqi air defense system. The attack was a huge success and cleared the way for the beginning of the Allied bombing campaign.

One concern involving the Apache arose when a unit of these helicopters was very slow to deploy during U.S. military involvement in Kosovo. According to the [*Army Times*](https://en.wikipedia.org/wiki/Army_Times), the Army is shifting its doctrine to favor ground-attack aircraft over [attack helicopters](https://en.wikipedia.org/wiki/Attack_helicopter) for deep strike attack missions because ground-attack helicopters have proved to be highly vulnerable to small-arms fire; the U.S. Marine Corps has noted similar problems.

In the late 1960s the [United States Air Force](https://en.wikipedia.org/wiki/United_States_Air_Force) requested a dedicated [close air support](https://en.wikipedia.org/wiki/Close_air_support) (CAS) plane that became the [Fairchild Republic](https://en.wikipedia.org/wiki/Fairchild_Aircraft) [A-10 *Thunderbolt II*](https://en.wikipedia.org/wiki/A-10_Thunderbolt_II). It eventually became a primarily anti-armor weapon with limited capability in the interdiction and tactical bombing role, and even in the anti-tank role it initially met with mixed feelings. The A-10's performance during [Operation Desert Storm](https://en.wikipedia.org/wiki/Operation_Desert_Storm) negated these criticisms. It remained the only dedicated fixed-wing ground-attack aircraft in U.S. service. Overall U.S. experience in the [Gulf War](https://en.wikipedia.org/wiki/Gulf_War), [Kosovo](https://en.wikipedia.org/wiki/Kosovo), [Afghanistan](https://en.wikipedia.org/wiki/Afghanistan), and [Iraq War](https://en.wikipedia.org/wiki/Iraq_War) has resulted in renewed interest in such aircraft. Officially, the U.S. Air Force planned to replace the A-10, with its new "Joint Strike Fighter", the [F-35 Lightning II](https://en.wikipedia.org/wiki/F-35_Lightning_II). Facing political concerns that the new fighters were not designed for the ground-attack role that had proven particularly useful in Iraq and Afghanistan, a plan to decommission the A-10 has been replaced with a plan to upgrade the existing aircraft with improved electronics, extending the service life of the planes until as late as 2028. The U.S. Air Force has not commissioned any new designs for this role (in part, out of concern for the F-35 program). Nevertheless, the current U.S. doctrine emphasizes the use of [United States Army](https://en.wikipedia.org/wiki/United_States_Army) [helicopters](https://en.wikipedia.org/wiki/Helicopter) for close air support and anti-tank missions. Nevertheless, a [Light Attack/Armed Reconnaissance](https://en.wikipedia.org/wiki/Light_Attack/Armed_Reconnaissance) program has been initiated by the USAF.

An early surveillance photograph of Soviet [Sukhoi Su-25](https://en.wikipedia.org/wiki/Sukhoi_Su-25) (*Frogfoot*), 1986

The Soviets' similar [Sukhoi Su-25](https://en.wikipedia.org/wiki/Sukhoi_Su-25) (*Frogfoot*) found success in the "flying artillery" role with many air forces.

The UK has completely retired [BAE Harrier II](https://en.wikipedia.org/wiki/BAE_Harrier_II) in 2011, expecting to obtain [F-35](https://en.wikipedia.org/wiki/F-35_Lightning_II) in the near future; it retains its fleet of [Panavia Tornado](https://en.wikipedia.org/wiki/Panavia_Tornado) dedicated attack-reconnaissance aircraft and [Eurofighter Typhoon](https://en.wikipedia.org/wiki/Eurofighter_Typhoon) multirole fighters.

**See also**

* [Air interdiction](https://en.wikipedia.org/wiki/Air_interdiction)
* [Air-to-ground weaponry](https://en.wikipedia.org/wiki/Air-to-ground_weaponry)
* [Gunship](https://en.wikipedia.org/wiki/Gunship)
* [Interdictor](https://en.wikipedia.org/wiki/Interdictor)
* [List of attack aircraft](https://en.wikipedia.org/wiki/List_of_attack_aircraft)
* [Pace-Finletter MOU 1952](https://en.wikipedia.org/wiki/Pace-Finletter_MOU_1952)
* This page was last modified on 16 April 2016, at 20:49.