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Fairchild C-123 Provider

C-123 Provider



A [United States Coast Guard](#) HC-123B Provider from CGAS Miami.

Role	Military transport aircraft
Manufacturer	Chase Aircraft Fairchild Aircraft
Designer	Michael Stroukoff
First flight	14 October 1949
Introduction	1956
Retired	U.S. Air Force c. 1980
Status	Active with flying clubs
Primary users	United States Air Force ^(historical) United States Coast Guard ^(historical) South Vietnamese Air Force ^(historical)
Produced	1949-1970
Number built	307
Developed from	Chase XCG-20
Variants	Chase XC-123A Stroukoff YC-134

The **Fairchild C-123 Provider** is an American [military transport aircraft](#) designed by [Chase Aircraft](#) and subsequently built by [Fairchild Aircraft](#) for the [United States Air Force](#). In addition to its USAF service, which included later service with the [Air Force Reserve](#) and [Air National Guard](#), it also went on to serve most notably with the [United States Coast Guard](#) and various air forces in South East Asia. During the Vietnam War, the aircraft was used to spray [Agent Orange](#).

Contents

- [1 Design and development](#)
- [2 Operational history](#)
 - [2.1 Experimental projects](#)
 - [2.2 Black Spot and other special military C-123s](#)
 - [2.3 Covert operations](#)
 - [2.3.1 Southeast Asia](#)
 - [2.3.2 Central America](#)
 - [2.3.3 Agent Orange controversy](#)
- [3 Variants](#)
- [4 Operators](#)
- [5 Accidents and incidents](#)
- [6 Survivors](#)
- [7 Specifications \(C-123K Provider\)](#)
- [8 In popular culture](#)
- [9 See also](#)
- [10 References](#)
 - [10.1 Notes](#)
 - [10.2 Citations](#)
 - [10.3 Bibliography](#)
- [11 External links](#)

Design and development



A Chase XG-20 glider, which was later converted to the XC-123A prototype.



The XC-123 prototype.

The C-123 Provider was designed originally as an assault [glider](#) aircraft for the [United States Air Force](#) (USAF) by [Chase Aircraft](#) as the [XCG-20](#) (Chase designation MS-8 Avituc)^[1] Two powered variants of the XCG-20 were developed during the early 1950s, as the XC-123 and [XC-123A](#). The only difference between the two was the type of engines used. The XC-123 used two [Pratt & Whitney R-2800-23](#) air-cooled radial piston engines, while the XC-123A was fitted with four [General Electric J47-GE-11](#) turbojets, in two pods.^[2] The XC-123A also has the distinction, while only experimental, of being the USAF first jet-powered military transport.^[3] While the piston-powered XC-123 was initially well regarded for tactical transport for its ruggedness and reliability and ability to operate from short and unimproved airstrips, the turbojet-powered XC-123A - designed for high-speed transport between USAF bases for critical parts and personnel - was found unable to operate

from short and rough airstrips. There was also no practical speed advantage due to the wing and fuselage design, and a drastic reduction in range. Only the one turbojet-powered test and evaluation version was built.^{[[citation needed](#)]}

By 1953, [Henry J. Kaiser](#) purchased a majority share in Chase Aircraft, feeling that after having completed [C-119s](#) for Fairchild under contract, he could take control of the impending C-123 contract. Two airframes were completed at Kaiser's [Willow Run](#) factory in [Ypsilanti, Michigan](#), before a pricing scandal that led to Kaiser's being told that no further contracts with him would be honored. The C-123 contract was put up for bid, and the two completed airframes scrapped. The contract was finally awarded to [Fairchild Engine and Airplane](#), who assumed production of the former Chase C-123B, a refined version of the XC-123.^[4] Before turning production over to Fairchild, Chase originally named their C-123B the *AVITRUC* but it never stuck.^[5]

Operational history

The first recipients of C-123 aircraft were USAF transport units, soon followed by the [United States Coast Guard](#) (USCG) who used the aircraft for search and rescue missions, and even the [U.S. Air Force Demonstration Team, the "Thunderbirds,"](#) would use C-123s for a time as a logistics support aircraft for transporting the team's ground crews and equipment. The type would also be widely exported under various U.S. military assistance programs, directly from USAF stocks.



USAF C-123Bs in the 1950s.

The aircraft was nearly ignored by the USAF for service in Vietnam, but a political rivalry with the [U.S. Army](#) and the Army's use of the [CV-2 Caribou](#) and later pre-production order for the [de Havilland Canada C-8 Buffalo](#), led to a decision to deploy C-123s there. To compete with the well-performing CV-2, the USAF and Fairchild furthered development on the C-123 to allow it to do similar work on short runways. This additional development increased the utility of the aircraft and its variants to allow it to perform a number of unique tasks, including the **HC-123B** which operated with the USCG fitted with additional radar equipment for search and rescue missions through 1971, and the **C-123J** which were fitted with retractable skis for operations in [Greenland](#) and [Alaska](#) on compacted snow runways.



A [Ranch Hand](#) UC-123B over Vietnam in 1962.



 A [19th ACS](#) C-123K over the [Mekong Delta](#), 1969.

By 1962, the **C-123K** variant aircraft was evaluated for operations in Southeast Asia and their stellar performance led the Air Force to upgrade 180 of the C-123B aircraft to the new C-123K standard, which featured auxiliary jet pods underneath the wings, and anti-skid brakes. In 1968, the aircraft helped resupply troops in [Khe Sanh](#), [Vietnam](#) during a three-month siege by [North Vietnam](#).^[1]

A number of C-123s were configured as VIP transports, including General [William Westmoreland](#)'s *White Whale*. The C-123 also gained notoriety for its use in "[Operation Ranch Hand](#)" defoliation operations in Vietnam. Oddly enough, the USAF had officially chosen not to procure the **VC-123C** VIP transport, opting instead for the [Convair VC-131D](#).

The first C-123s to reach South Vietnam were part of the USAF's Special Aerial Spray Flight, as part of Operation **Ranch Hand** tasked with defoliating the jungle in order to deny rebels their traditional hiding places.^[6] These aircraft began their operations at the end of 1961. Aircraft fitted with spraying equipment were given the U prefix as a role modifier, with the most common types being the **UC-123B** and the **UC-123K**. Aircraft configured for this use were the last to see military service, in the control of outbreaks of insect-borne disease. The C-123 was also used as "jump aircraft" for U.S. Army Airborne students located at [Lawson Army Airfield](#), [Fort Benning, Georgia](#) in the late 1970s and early 1980s. This aircraft was used in conjunction with the [Lockheed C-130 Hercules](#) and [Lockheed C-141 Starlifter](#).

With the end of the [Vietnam War](#), remaining C-123Ks and UC-123Ks were transferred to tactical airlift units of the [Air Force Reserve](#) (AFRES) and the [Air National Guard](#) (ANG) that were operationally-gained by [Tactical Air Command](#) (TAC) prior to 1975 and [Military Airlift Command](#) (MAC) after 1975.^[7]

The [302nd Tactical Airlift Wing](#) at [Rickenbacker AFB](#) (later [Rickenbacker ANGB](#)), Ohio flew the last UC-123Ks Providers in operational service before converting to the [Lockheed C-130 Hercules](#). Known as the Special Spray Flight, these aircraft were used to control insect-borne diseases, with missions to Alaska, South America and Guam being among the humanitarian duties performed by this Air Force Reserve unit.^[8]

The final examples of the C-123 in active U.S. military service were retired from the [Air Force Reserve](#) and [Air National Guard](#) in the early 1980s. Some airframes were transferred to the [Federal Aviation Administration](#) (FAA) for test and evaluation programs while others were transferred to the [U.S. Department of Agriculture](#) (USDA) for miscellaneous programs. These aircraft were also retired by the end of the 1990s.

Experimental projects



YC-123E with pantobase landing gear

In 1954, the **YC-123D**, formerly the XC-123A prototype, flew in its modified state after being converted by **Stroukoff Aircraft**. While the most obvious change from the original XC-123A was the switch of engines, the YC-123D also had a [Boundary layer control](#) (BLC) system fitted. This system directs air from the engines at high speed over the top of the wing, making the wing act as if the aircraft is flying at a higher airspeed. As a result, the YC-123D had a greatly reduced takeoff and landing distance. Compared to the C-123B, the YC-123D could land in 755 feet instead of 1,200, and takeoff with only 850 ft of runway instead of 1,950, with a 50,000 lb total weight.

In 1955, Stroukoff, under contract from the USAF, produced a single [YC-123E](#), designed to be able to take off from any surface, and also equipped with BLC. The new aircraft also featured Stroukoff's *Pantobase* system, combining a ski system with a sealed fuselage and wing mounted floats, while retaining its normal landing gear. The skis worked both on snow and water, and the system effectively allowed the aircraft to land on water, land, snow or ice.

In 1956, the USAF awarded a contract to Fairchild to design an improved version of the C-123 under the designation **C-136**, but the contract was cancelled before the aircraft was built.^[9]

At much the same time the **YC-123H** was under development, the product of a Fairchild modification program started in 1956 and completed in 1957.^[citation needed] A "Jet Augmentation Program" for existing C-123Bs had been initiated in 1955 at the behest of the USAF, and in the YC-123H contract the USAF expanded it to allow the mounting of two pod-mounted [General Electric J85](#) turbojets.

In 1979, the Royal Thai government, seeking to extend the life of their C-123 fleet, placed a contract with the Mancro Aircraft Company, supported by the USAF, to convert a single C-123B to [turboprop](#) powerplants.^[citation needed] [Allison T56-A-7](#) turboprops were used and by the time the aircraft, dubbed **C-123T**, was complete it had new "[wet](#)" wings, an [auxiliary power unit](#) (APU) to assist with power movement of the control surfaces, and a heating system for the cargo compartments that also fed a new deicing system.^[citation needed] Budgetary restrictions forced the Thai government to abandon the program in 1981, and with a lack of interested parties development of the C-123T stopped.^[citation needed] However, it concluded the life of the C-123 by making it the only aircraft type to operate under jet, internal combustion and turboprop engine power, and as a glider, during its history.^[citation needed]^[N 1]

The C-123T has recently been revived by a joint venture between the US-based Fleetwings Aircraft Company and the South African company Elmer Group. In 2010, they announced a project to initially remanufacture old airframes for African customers and, where there was demand, to build new aircraft. The airframes would be fitted with new turboprop [Rolls-Royce T56-A-15](#) engines, a glass cockpit and other enhancements. The proposed C-123T would have had a 25,000 lb payload capability, and a take-off run of just over 1,000 ft at 50,000 lb MTOW. Possible applications included maritime patrol, search and rescue, and even use as a

gunship, while roll-on packages have already been developed for mid-air refueling and agricultural applications.^[10]

Black Spot and other special military C-123s

During the Vietnam War, some C-123s were modified for specialized roles. Most of these modifications were on a one- or two-aircraft level. Only the usage of C-123s as "flare ships" to illuminate targets for fixed wing [gunships](#) such as the [AC-47](#) and [AC-119G](#) were more numerous. These aircraft, operating under the call-sign *Candle* were flown by the USAF's [14th Special Operations Wing](#).



USAF NC-123K "permanent test" model used over the [Ho Chi Minh Trail](#). It was outfitted with FLIR, [LLLTV](#), laser rangefinder, and cluster bomb dispensers.

A single C-123B was tested as a possible replacement for the *Candle* aircraft, with its rear loading ramp removed and replaced with a large box with 28 large lights. The aircraft could continuously light a two-mile circle from an altitude of 12,000 ft. This aircraft, under the provisional designation **NC-123B** was dropped because the lights, fixed to the aircraft, made it far easier for enemy gunners to track compared to the earlier flare ships.

The "Candle" aircraft had an extended life when several UC-123Ks were transferred to [Nakhon Phanom Royal Thai Air Force Base](#) in [Thailand](#). During that period, it was used as a flare ship as well as a [forward air control](#) (FAC) aircraft. The flare duties were generally used for troops in contact (TIC) while the FAC mission directed [air strikes](#) in [Laos](#) over the [Ho Chi Minh trail](#).

Another NC-123B was used as a radio relay aircraft over the Ho Chi Minh trail, with equipment to read the signals from various sensors on the ground designed to pick up enemy truck activity.

Two C-123K aircraft modified in September 1965 under Project **Black Spot**.^[11] The Black Spot aircraft were to fit under the "self-contained night attack capability" that was Operation Shed Light's primary focus and [E-Systems](#) of [Greenville, Texas](#) was contracted to complete the modifications. These aircraft featured a variety of new sensors including Low Light Level TV (LLLTV), Forward Looking Infrared (FLIR), and a laser rangefinder.^[12] The aircraft looked radically different visibly from its transport brethren, as the new equipment required lengthening the nose by over 50 inches.^[13] The aircraft also featured an armament system designed to carry BLU-3/B (using the ADU-253/B adapter) or BLU-26/B (using the ADU-272/B adapter) [bomblets](#), or CBU-68/B [cluster bombs](#).^{[14][15]}

The two aircraft, AF Serial Numbers 54-0691 and 54-0698, were first designated NC-123K in 1968 and then redesignated **AC-123K** in 1969.^[N.2] These NC/AC-123Ks were first deployed operationally at [Osan AB](#), [South Korea](#) between August and October 1968, and flying in support of operations against [North Korean](#) infiltrators approaching by boat. The operations in Korea met with a certain level of success and as a result the NC/AC-123Ks were transferred to South Vietnam in November 1968. The aircraft operated there until January 1969, when they were redeployed to [Ubon RTAB](#), [Thailand](#). The two aircraft were then returned to the United States to [Hurlburt Field](#), [Florida](#) in May 1969, where a second round of training occurred. Four crews attended a ground school in Greenville, Texas and returned to Hurlburt where they flew the aircraft for the first time.

The fate of the aircraft is still unclear. Sources have missions terminating in early July 1970 and the aircraft flying to the [Military Aircraft Storage and Disposition Center \(MASDC\)](#) "boneyard" at [Davis-Monthan AFB](#),

AZ, where they were returned to C-123K standard, then returned to South Vietnam still wearing their camouflage and black undersides for transport duty.^[13] However, the official history states that combat operations ceased on 11 May 1969, with no mention of the second deployment.^[11] While the second deployment is mentioned in associated documentation, the only dates are of the arrival in Thailand and there is no information as to when they departed or where their destination was.^[16]

Main article: [Operation Shed Light](#)

Covert operations

Southeast Asia

In 1962, the CIA acquired five C-123Bs from USAF for Air America to be used in Laos and Vietnam, and another 5 C-123Bs to be used by ROCAF/Taiwan's top secret 34th Squadron, a Black Ops units called the "Black Bat", as Flight B section(Flight A section is the two P2V-2U/RB-69A). The five Taiwan C-123Bs were sent to Lockheed Skunk Works for modifications as covert insertion aircraft with "smart" air to air jammer, BSTR system to jam the radars of ground anti-aircraft guns, also added a defensive operator's station to operate the jammers on board, with extra fuel in underwing tanks, with 36 Taiwanese crew finished training courses at Pope AFB by November 1962.

The five ROCAF/Taiwan/CIA C-123Bs would be used over North Vietnam as low level and nighttime covert airdrop aircraft, under the South Star II agreement, under the guise of Taiwan's national airline, China Airline, which had "cover story" of operating Vietnamese Air Transport(VIAT) in South Vietnam, that was formerly operated by Air America. The secret outfit was based in Saigon, but would fly out of Da Nang for airdrop missions going into North Vietnam, with some were 14 hours long missions.

On 1 February 1964, the overall control of South Star II was transferred from CIA to Studies and Observations Group(SOG), as part of U.S. Military Assistance Command Vietnam(MACV) in Saigon. The outfit was redesignated as Det. 1 of USAF's 75th Troop Carrier Squadron(TCS), but within SOG was known as the First Flight Detachment(FFD).

In May 1964, under "Project Duck Hook", six more C-123s received extensive modifications by Lockheed Air Service at Ontario, California, equipped with ATIR and BSTR ECM packages, ASN-25 Doppler navigation system, APN-153 terrain-following radar, a console station for radio operator, new HF radio and other radios. These aircraft were issued to the secret Taiwanese Black Bat unit operating in South Vietnam, In October 1964, MACV, CIA and ROCAF/Taiwan signed the South Star III agreement to continue the operation in Vietnam. The six "Duck Hook" C-123Bs were based in Nha Trang, north of Cam Ranh Bay, officially designated as USAF Det. 12 of 1131 Special Activities Squadron.

The "Duck Hook" C-123Bs were updated with RDR-10 weather radar and ARN-131 homing receiver in 1966 in order to perform missions over Ho Chi Minh trail. All C-123Bs were converted to C-123Ks in 1968, with two wing-mounted turbjets, plus an ECM upgrade with APR-25 radar warning receiver and ALE-1 chaff dispenser. Project "Duck Hook" designation was ultimately changed to "Heavy Hook". The Det. 12 of 1131 Special Activities Squadron unit at Nha Trang received an outstanding unit award from the USAF, for flying 4,000 classified combat and combat support missions from June 1966 to May 1968.

In May 1970s, C-123Ks from the "Black Bats" supported the secret U.S. military incursion into Cambodia. In October 1970, flights into Laos began. In March 1972, the SOG was deactivated, and the Southern Star operation ended with four surviving C-123Ks returned to Taiwan. On 1 March 1973, 34th "Black Bat" Squadron of ROCAF/Taiwan was disbanded.^[17]

Central America

On 5 October 1986 a Corporate Air Services C-123 Provider (HPF821, previously N4410F and USAF 54-679, (c/n 20128))^[18] departed San Salvador-Ilopango Airport in [El Salvador](#) loaded with 70 [AK-47](#) rifles and 100,000 rounds of ammunition, rocket grenades and other supplies. It flew along the coastline of [Nicaragua](#) and entered Nicaraguan airspace near the border with [Costa Rica](#). Nearing San Carlos, the plane descended to 2,500 feet while preparing to drop off its cargo to [Contra](#) fighters.

While conducting the drop, the C-123 was shot down by a Sandinista soldier, using a [SA-7 Grail](#). [CIA](#) pilots Wallace "Buzz" Sawyer and William Cooper were killed in the crash. Loadmaster [Eugene Hasenfus](#) parachuted to safety and was taken prisoner. He was later released in December 1986.^[19] The salvaged aircraft is now a beachside cocktail lounge.

Agent Orange controversy

In 2011, a retired Air Force officer Major Wesley T. Carter filed a complaint with the Air Force Inspector General alleging that the Air Force knew that UC-123Ks used for spraying Agent Orange in Vietnam remained contaminated and that the Air Force had failed to properly inform flight crews of the risks. In his complaint, Major Carter contends that the Air Force has known since 1994 that the aircraft were contaminated with the defoliant; he cites the fact that when a former C-123 was being prepared for a static display that workers had to use HAZMAT suits and respirators. Additionally, it is asserted that when the aircraft was tested by the Air Force, it contained high levels of the known [carcinogen polychlorinated dibenzodioxin](#), studies since confirmed by the Oregon Health Sciences University and Columbia University's Mailman School of Public Health.^[citation needed]

The aircraft which were flown from 1972–1982, were assigned to the Air Force Reserve after their service in Vietnam, and used for normal cargo and aeromedical evacuation missions. Air Crews accumulated hundreds of flight hours aboard several contaminated aircraft that were often flown with the windows open due to the smell and eye irritation. Memos surfaced showing that Air Force JAG officers recommended keeping the toxicity information "within official channels." Further, Carter located Air Force reports of dioxin-contaminated aircraft sold abroad, and of one used at the [Robins AFB](#), Georgia [Museum of Aviation](#) with public access to the contaminated surfaces of the aircraft. In 2010, due to concerns about dioxin contamination, the Air Force took the unusual step of shredding all the remaining surplus C-123K/UC-123K aircraft and melting the scraps into ingots for disposal.^[20]

On 9 June 2011, the Secretary of the U.S. Air Force Inspector General opted to reject Carter's complaints, and in a subsequent message explained, "Unfortunately, we do not have the ability to identify or notify the individuals in the categories you mention" when asked if the military would alert the aircrews regarding their exposure to dioxin. On 18 June 2011, the veterans' complaint was accepted with the Department of Defense Inspector General, adding the request that the UC-123K aircraft themselves be designated by the Secretary of Defense as "Agent Orange Exposure Sites".^[21]

In December 2011, the U.S. Department of Veterans Affairs posted two notices of its decision that, while the post-Vietnam aircraft "may" have been contaminated, the aircrews were unlikely to have suffered exposure to dioxin. In an unusual response, the U.S. Center for Toxic Substance and Disease Registry quickly countered the VA position on 25 January 2012 with a statement by their Deputy Director concluding that aircrews and maintenance personnel most likely were exposed well beyond military and government surface-wipe screening levels.^[22]

In November 2011, the USAF School of Aerospace Medicine began its own investigation into lingering C-123 contamination. In April 2012, the USAF School of Aerospace Medicine released its review of the C-123 Agent

Orange exposure issue and reported their researchers were unable to determine the degree of exposure, if any, which aircrews may have had aboard the contaminated aircraft in the period 1972–1982. Their report was, in turn, challenged by university-based experts, Dr. Richard Clapp and Dr. Jeannie Stellman, both of whom continue to assert contaminated aircraft exposed the aircrews as well as aerial port and maintenance veterans. As of August 2012, the U.S. Department of Veterans Affairs has denied service-connection (the linking of a veteran's illness to military service) to every application for medical benefits.

In September 2012, Thomas Moore, Director of VA Compensation Services, wrote that TCDD (the toxic component of Agent Orange) has not been shown to cause harm to humans in his denial of one veteran's application. On 25 November 2012, a committee of scientists and physicians, chaired by Dr. Jeanne Stellman, informed the VA Under Secretary for Benefits Allison Hickey that the VA's scientific conclusions regarding the C-123 situation were ill-founded and called on the VA to involve outside experts in a re-evaluation.

Variants



 Cockpit of a C-123K Provider at the [Castle Air Museum](#)
[Chase XCG-20](#)

Two prototype all-metal troop transport gliders built by [Chase Aircraft](#), later designated the XG-20, one became the XC-123, the other the XC-123A.

Chase XC-123

Former XG-20 fitted with two 2,200 hp R-2800-23 engines.

[Chase XC-123A](#)

Former XG-20 fitted with four J47-GE-11 turbojets in pairs (of the type used by the [B-36](#) and [B-47](#)^[23]) under wings.^{[2][24]}

C-123B

Production model based on the XC-123 with two 2300 hp R-2800-99W engines with accommodation for 61 troops or 50 stretchers, five built by Chase and 302 built by Fairchild Aircraft.

UC-123B

C-123Bs modified for defoliation and crop destruction duties.

VC-123C

Executive transport version of the jet-powered XC-123A, not built.

Stroukoff YC-123D

One aircraft built by Stroukoff with boundary layer control system for improved VTOL performance.

Stroukoff YC-123E

One aircraft built by Stroukoff with modified fin and rudder, modified fuselage bottom (called *Pantobase*) and pontoon floats to allow operation from water, sand, snow or ice.

YC-123H

Prototype with wide track undercarriage and two underwing J85 booster engines.

C-123J

C-132B with two wing tip mounted [Fairchild J44-R-3](#) booster engines, 10 converted.

C-123K

C-123Bs with two underwing J85 booster engines and larger wheels, 183 converted.

AC-123K/NC-123K

Two C-132Bs converted for armed nighttime surveillance with special sensors.

C-123T

Proposed upgrade for Royal Thai Air Force C-123Bs including installation of turboprop engines; cancelled after one prototype due to budgetary reasons.

HC-123B

USCG search and rescue variant

UC-123K

C-123Ks converted for *Ranch Hand* defoliation missions, 34 converted.

VC-123K

One C-123K converted as personal transport for General Westmoreland's use in Vietnam.

[Stroukoff YC-134](#)

One aircraft built by Stroukoff, as C-123B but fitted with boundary layer control system, tailplane endplates, redesigned landing gear with tandem main wheels. Later designated YC-134A when fitted with Pantobase landing gear.

YC-136

Proposed improved variant; cancelled before any aircraft built.