

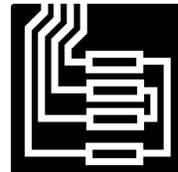
ARCHIVED REPORT

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Fairchild A-10 Thunderbolt II

Outlook

- A-10 modifications activity zeroed out in FY24-FY25 as USAF seeks to expedite platform's full retirement to target date of 2029
- Congress approved significant divestments in FY23; USAF proposing divestment of additional 56 airframes in FY25
- FY23 re-winging program sustaining downsized fleet capabilities through the impending end of platform's operational service life
- **Note:** Icons indicate area(s) of current and potential retrofit/modernization activity



Orientation

Description. A twin-engine, single-seat, close air support aircraft.

Current Status. Production ended in 1984.

Total Produced. A total of 713 A-10s (including six RDT&E aircraft), plus two prototypes.

Application. Close air support aircraft.

Price Range. The unit cost of the A-10 was \$12.1 million in FY82 (the last year of A-10 procurement).



A-10 Thunderbolt II Warthog

Source: Air Force Technology

Fairchild A-10 Thunderbolt II**Prime Contractor**

Elbit Systems of America	http://www.elbitsystems-us.com , 4700 Marine Creek Pkwy, Fort Worth, TX 76179 United States, Tel: + 1 (816) 234-6600, Email: info@elbitsystems-us.com , Prime
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Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 75 Glen Road, Suite 302, Sandy Hook, CT 06482, USA; rich.pettibone@forecast1.com
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Technical Data

	Metric	U.S.
Dimensions		
Length overall	16.25 m	53.30 ft
Height overall	4.47 m	14.67 ft
Wingspan	17.53 m	57.50 ft
Wing area, gross	47.01 sq m	506.0 sq ft
Weight		
Operating weight	10,977 kg	24,303 lb
Internal fuel	4,853 kg	10,700 lb
Max gross weight	21,500 kg	47,400 lb
Performance		
Max level speed	682 km/h	368 kt
Max dive speed	834 km/h	450 kt
Ferry range(a)	4,002 km	2,160 nm
Propulsion		
Two General Electric TF34-GE-100 turbofans		
Thrust (each)	40.3 kN	9,065 lb
Armament		
One General Electric GAU-8/A Avenger 30mm seven-barrel cannon in nose. Four stores pylons under each wing and three under fuselage (cannot be equipped with the centerline pylon and two flanking fuselage pylons simultaneously). The pylons permit carriage of a wide variety of stores, including Maverick air-to-ground missiles, gun pods, jammer pods, drop tanks, bombs, dispenser weapons, and chaff/flare systems. Outer pylons can carry AIM-9L Sidewinder air-to-air missiles.		
(a) With 50-knot (93-km/h) headwind.		

Fairchild A-10 Thunderbolt II**Variants**

A-10A. Initial production version; only variant to reach production.

N/AW Variant. A lack of sophisticated avionics relegated early A-10s to daytime usage in a high-threat environment. With company funds, Fairchild independently developed a two-seat, night/adverse weather (N/AW) A-10 variant. This aircraft, which was converted under a lease agreement from one of the DT&E A-10As, first flew in May 1979. In addition to the pilot, the variant was to carry a weapons system officer responsible for electronic countermeasures and navigation, and for target or threat acquisition and designation.

Apart from the lengthened canopy, the most visible difference between the A-10A and the N/AW version was a 20-inch increase in the height of the vertical fins. The N/AW A-10 was to be equipped with the Westinghouse WX-50 multimode radar, a Ferranti Type 105 laser rangefinder, a modified Kaiser head-up display for the pilot, a Litton LN-39 inertial navigation system, a Honeywell radar altimeter, a General Electric low-light-level television, and a modified version of a Texas Instruments AAR-42 forward-looking infrared (FLIR) sensor. Despite the advantages of the N/AW variant, which extended the operational capabilities of the aircraft, no orders for this version were placed.

A-10B. In August 1981, Fairchild and the U.S. Air Force began development of the A-10B, a two-seat combat-ready trainer. Although the A-10B resembled the privately funded N/AW variant, it was to be generally similar to the single-seat A-10A. Development of the A-10B was terminated following Congress's deletion of A-10 procurement funds in the FY83 authorization act.

A-10C. Under the Precision Engagement program, the A-10 receives a number of improvements to its avionics and sensor systems, as well as a datalink and a targeting pod. Aircraft modified under this program are redesignated A-10C.

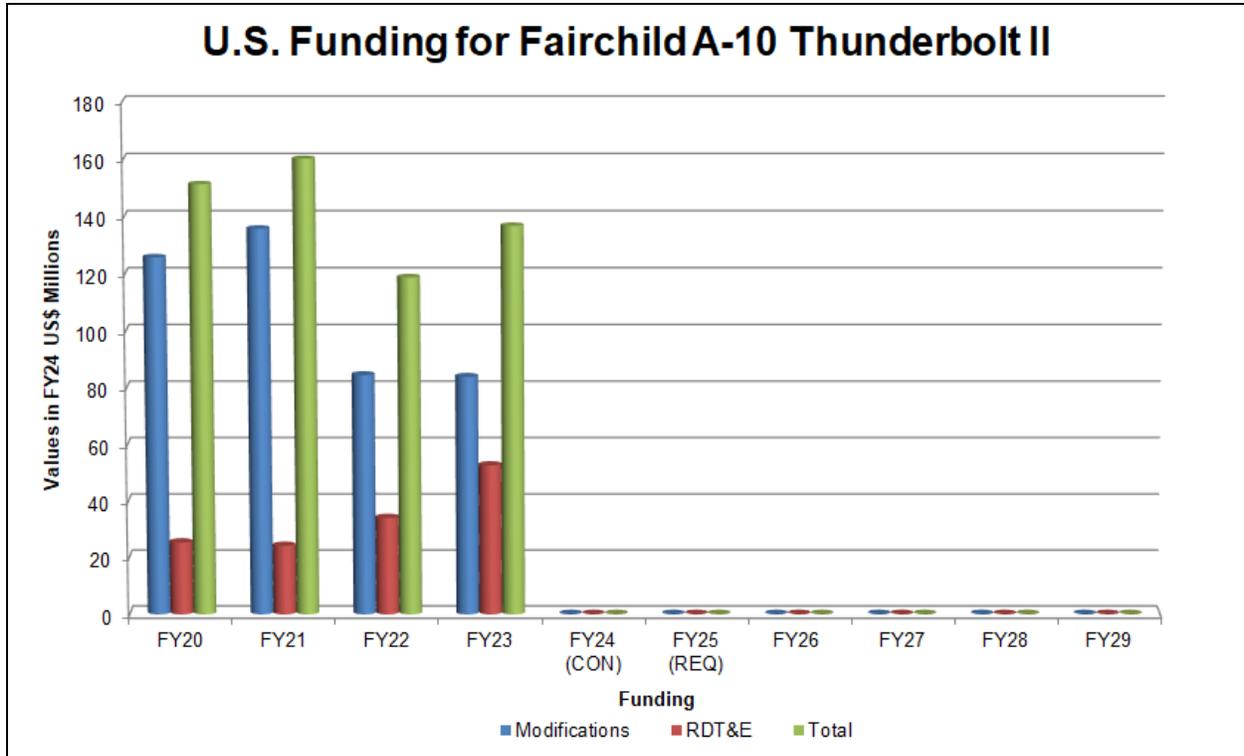
OA-10. Former A-10 aircraft adapted for forward air control and observation duties. No armament other than 30mm guns and Sidewinder missiles carried (for self-defense).

Funding**U.S. FUNDING**

The U.S. defense budget goes through several stages of negotiation before being enacted into law. The process begins with the submission of the presidential request and eventually concludes under the conference appropriations.

	FY20	FY21	FY22	FY23	FY24 (CON)	FY25 (REQ)	FY26*	FY27*	FY28*	FY29*
Modifications										
A-10	125.8	135.8	84.6	84.0	-	-	-	-	-	-
RDT&E										
A-10 Squadrons (PE#0207134F)	25.5	24.3	34.2	52.8	-	-	-	-	-	-
Total	151.3	160.1	118.8	136.8	0	0	0	0	0	0
*FY25 FYDP projections.										

Fairchild A-10 Thunderbolt II



Identified Retrofit & Modernization Contractors

Airframe

Boeing Defense, Space & Security	http://www.boeing.com/defense , PO Box 516, St Louis, MO 63166 United States, Tel: + 1 (314) 232-0232, Fax: + 1 (314) 777-1096, (Wing replacement)
CPI Aerostructures Inc	http://www.cpiaero.com , 91 Heartland Blvd, Edgewood, NY 11717 United States, Tel: + 1 (631) 586-5200, Fax: + 1 (631) 586-5840, (Wing Replacement)

Electronics

5-D Systems	http://www.5dsystems.com , 4825 University Square, Suite 2, Huntsville, AL 35816 United States, Tel: + 1 (256) 837-8253, (Persistent Close Air Support)
BAE Systems plc	http://www.baesystems.com , 6 Carlton Gardens, Stirling Sq, London, United Kingdom, Tel: + 44 1252 373232, Fax: + 44 1252 383991, (Persistent Close Air Support)
General Electric Co	http://www.ge.com , 41 Farnsworth St, Boston, MA 02210 United States, Tel: + 1 (203) 373-2211, (Persistent Close Air Support)
Northrop Grumman Corp	http://www.northropgrumman.com , 2980 Fairview Park Dr, Falls Church, VA 22042 United States, Tel: + 1 (703) 280-2900, Email: onewebmaster@ngc.com , (Persistent Close Air Support)
RTX Corporation	http://www.rtx.com , 1000 Wilson Blvd, Arlington, VA 22209 United States, Tel: + 1 (781) 522-3000, Fax: + 1 (781) 860-2520, (Persistent Close Air Support)
Collins Aerospace Systems, Avionics & Mission Systems	http://www.collinsaerospace.com , 400 Collins Rd NE, Cedar Rapids, IA 52498 United States, Tel: + 1 (319) 295-1000, Fax: + 1 (319) 295-5429, (Persistent Close Air Support)

Fairchild A-10 Thunderbolt II**Opportunities****International Opportunities****North America**

Operational Aircraft: 219

Global Fleet Percentage: 100

Average Fleet Age: 42.8

Key Operating Nations

United States – The United States operates the entire global fleet of A-10 Thunderbolt attack aircraft. Accelerating divestment of airframes poised to significantly reduce active fleet size over FY24-FY25.

Modification Programs**AIRFRAME****Conversion Fuel Tanks (CFT)**

The Conversion Fuel Tank program converted excess F-15 external fuel tanks for utilization as A-10 external fuel tanks. The CFT tanks allow longer operational flights as well as the ability to load and unload the 30mm GAU-8 without having to download the CFT tanks from the aircraft. The program was funded at \$8.7 million in FY19, and 120 kits were procured for installation.

Onboard Oxygen Generating System (OBOGS)

The Onboard Oxygen Generating System (OBOGS) mitigates costs and operational constraints associated with liquid oxygen. Although no funding for this category was projected under the previous year's Future Years Defense Program (FYDP), \$4.7 million in modifications funding was expended in FY21 and a request of \$9.5 million was submitted and attained in FY22. A total of 100 systems were installed during the FY22 fiscal period. A final sum of \$1.0 million was expended on this program in FY23.

Wing Replacement

In August 2019, Boeing was selected for a \$999 million A-10 re-winging contract, under which the company would provide a maximum of 112 wing sets and spare kits for the U.S. Air Force fleet, though the current production target now rests at 50. The program extends the service life of affected aircraft to 16,000 hours. Boeing delivered 173 wing kits under a previous contract.

This was largest and arguably most critical budget item for the A-10 Thunderbolt platform and was also among the most frequent battlegrounds in the ongoing institutional struggle over the future of the aircraft. For FY22, the Air Force submitted a negligible request of \$0.04 million, but funding was revived in FY23 at congressional behest with a requested sum of \$36.0 million. Although the FY23 FYDP outlook anticipated that the program would be extended through FY26, encompassing execution of an additional 41 installations, the program was subsequently zeroed out alongside other A-10 programs under the FY24 budget request in acknowledgement of impending fleet divestments.

Defense press reports from 2022 indicated that unrefurbished A-10 airframes were beginning to suffer from systemic serviceability deficits. With the USAF pushing to retire 42 aircraft in FY24 and another 56 in FY25, the remainder of unrefurbished A-10s will be retired from service in short order. Boeing began delivering the latest wing sets to the Air Force in May 2022. A sum of 37 aircraft received re-winging under the final phases of the project.

Fairchild A-10 Thunderbolt II

ELECTRONICS

General Electronics Upgrades

Central Interface Control Unit (CICU)/Central Interface Control System (CICS)

The CICU/CICS program will install a redesigned system on the A-10 fleet. The CICU is charged with managing graphical and communication processes.

A 2019 report specified the procurement of 281 units (fleetwide), plus spares. Under the FY23 FYDP, modifications for this program were to be initiated in FY26, opening with a tranche of \$46.12 million, to coincide with the fleet's current software becoming obsolescent. However, with the A-10 fleet now appearing on track for retirement circa 2029, this program has been rendered unnecessary. Correspondingly, the FY24 FYDP outlook no longer anticipates financing for its implementation.

A sum of \$19.2 million in RDT&E funding was expended in FY22, with a sum of \$49.1 million approved for FY23.

Our **Opportunity Outlook** for this upgrade includes speculative figures for aircraft to be modified with yet-to-be-identified general or low-cost/depot-level electronics upgrades.

Human Interface Upgrades

High Resolution Display

An FY20 new start, the A-10 High Resolution Display System (HRDS) functions as a Primary Flight Display for enhanced tactical applications and provide high-resolution video from advanced targeting pods. A lower than anticipated sum of \$7.6 million was expended through FY22, with \$1.0 million appropriated in its final year of activity in FY23.

Helmet-Mounted Cueing System/Helmet-Mounted Integrated Targeting (HMCS/HMIT)

This program provided for the integration of the Thales Scorpion HMCS/HMIT system onto A-10 aircraft. The system provides heightened pilot awareness, and is the world's first full-color HMCS. Funding for this program has fallen marginally short of expectations each fiscal period, but it remains ambiguous as to whether procurement quantities have been affected. A sum of \$6.3 million was expended in the program's final phase of activity in FY23.

Communications Upgrades

3-Dimensional Audio (3DA)

The 3-Dimensional Audio upgrade allows A-10 pilots to be alerted to incoming threats by audio queues from the direction in which they emerge. Incoming radio transmissions may also be directed to emanate from a particular sector, depending on their point of origin. The upgrade was manufactured by Terma.

Collective outlays through FY22 amounted to \$8.2 million. Only \$1.0 million was disbursed for FY23.

ARC-210

The ARC-210 program replaced Gen 4 systems with Gen 6 variants, satisfying crypto-communication, cybersecurity threat, and Mobile User Objective System (MUOS) mandates set forth by the National Security Agency (NSA) and USAF. Modification funding began in FY20 and was planned to conclude in FY25 under the previous year's FYDP. Although only \$7.6 million in funding was projected for FY22 under the FY21 FYDP, a much enlarged sum of \$32.3 million was ultimately requested and appropriated for the relevant fiscal period owing to revised plans to update the entire active fleet. Although the FY23 FYDP anticipated that this program would generate over \$120.0 million in retrofit activity through the forecast period, force structure revisions have brought the program to an early conclusion. A final tranche of \$18.9 million was expended in FY23, with total programmatic outlays having amounted to \$79.8 million.

Fairchild A-10 Thunderbolt II**Forecast Rationale**

Over the past decade, it became a tradition each new fiscal year for the U.S. Air Force and U.S. Congress to wage institutional combat over the continued operation of the A-10 Thunderbolt. While the USAF has long sought to expedite the retirement of the A-10, regarding the platform's escalating maintenance obligations as an increasingly onerous burden amidst its efforts to modernize other capabilities, ranking veterans who have witnessed the attack aircraft's abilities firsthand have consistently persuaded Congress to extend its planned service life on the basis that it remains an invaluable asset in providing rugged close support for U.S. ground forces.

However, with new-build production of the platform long dormant, the USAF's active A-10 fleet poised to reach 50 years of operational service by the close of the forecast period and the capabilities and active force structure base of the multi-role F-35 fighter aircraft having attained a higher level of maturity, the A-10 platform appears at long last to be entering its long-postponed twilight. The FY23 budget, in which Congress made significant concessions to the USAF regarding A-10 divestments for the first time in years, retrospectively signaled the beginning of a paradigm shift in the legislature's perspective on the continued maintenance of the United States' aging A-10 inventories.

Under the FY24 presidential request and Future Years Defense Program (FYDP), modifications and RDT&E activity for the A-10 platform has been zeroed out wholesale. While the FY23 FYDP forecast projected that A-10 modifications programs would cumulatively generate \$218.1 million in spending through FY26, intended to buttress the fleet's capabilities in the event it need serve into the 2030s, the FY24 conference budget and nascent FY25 presidential suggest that no discernible modifications or RDT&E financing will be appropriated to the platform over the coming five-year period. This dramatic revision of the A-10's spending outlook reflects a growing institutional consensus in favor of enacting the USAF's long-standing proposal that the A-10 fleet be retired in its entirety come 2029.

To achieve this objective, USAF has begun proposing larger annual divestments over the past several budget cycles. Bolstered by a newly amenable relationship with Congress on the matter, the pace of fleet divestments has begun to accelerate swiftly in turn. Over the FY23 and FY24 budget cycles, cumulative divestments totaling 63 aircraft were approved. These divestments remain ongoing, with the 355th Wing at Davis-Monthan Air Force Base initiating retirement of its A-10s in February 2024, for example. Under the nascent FY25 presidential request, the USAF has submitted a proposal to retire 56 A-10 aircraft, its largest annual request yet.

The deficit of congressional additions to the FY24 budget, lack of any indication that new appropriations will be forthcoming under the FY25 budget, and the waning resistance to larger annual retirements of A-10 inventories all suggest that the dam of congressional opposition to the platform's retirement has been decisively broken over the last several budget cycles. Although unforeseen strategic or force structure-related developments could spur the revival of modest investments into areas such as avionics or communications in order to sustain the fleet's core capabilities at a higher technical and performance standard through its impending retirement, such opportunities for renewal will diminish rapidly as 2029 approaches and the fleet's operational obsolescence begins to take on a deepening finality. The apparent cessation of activity pertaining to the A-10 re-winging program could prove particularly consequential in this respect, as without new wings the elevated maintenance pressures associated with the platform will simply render much of the fleet unfit to continue flying operationally before long, hastening the conditions for its retirement.

Although the A-10 maintains a fearsome international reputation built over the course of successive U.S. conflicts in the Middle East, it possesses minimal potential as an aftermarket asset. With the average age of the A-10 fleet already exceeding 40 years in service and the aircraft's routine maintenance costs running notoriously high even for the well-heeled USAF, few global operators are apt to select the A-10 to fulfill their close air support requirements over more familiar and cost-effective alternatives.

Fairchild A-10 Thunderbolt II**Worldwide Distribution/Inventories**

Country	Operator	Designation	Quantity	Average Age
UNITED STATES	United States Air Force	A-10C	219	42.83