DC DESIGNS A-10C THUNDERBOLT II

OPERATIONS MANUAL

Welcome to the Microsoft / DC Designs A-10C Thunderbolt II Operations Manual. Please read it carefully to become familiar with the A-10, its basic systems, and flight. The basics you learn from this manual will help you have a tremendous experience flying this storied aircraft in Microsoft flight Simulator.

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GENERAL PERFORMANCE TABLE

General characteristics

- **Crew:** 1
- **Length:** 53 ft 4 in (16.26 m)
- **Wingspan:** 57 ft 6 in (17.53 m)
- **Height:** 14 ft 8 in (4.47 m)
- **Wing area:** 506 sq ft (47.0 m^2)
- **Airfoil:** NACA 6716 root, NACA 6713 tip
- **Empty weight:** 24,959 lb (11,321 kg)
- **Gross weight:** 30,384 lb (13,782 kg)
    - **CAS mission:** 47,094 lb (21,361 kg)
    - **Anti-armor mission:** 42,071 lb (19,083 kg)
- **Max takeoff weight:** 46,000 lb (20,865 kg)
- **Fuel capacity:** 11,000 lb (4,990 kg) internal
- **Powerplant:** 2 × General Electric TF34-GE-100A turbofans, 9,065 lbf (40.32 kN) thrust each

Performance

- **Maximum speed:** 381 kn (439 mph, 706 km/h) at sea level, clean
- **Cruise speed:** 300 kn (340 mph, 560 km/h)
- **Stall speed:** 120 kn (138 mph, 220 km/h) at 30,000 lb (14,000 kg)
- **Never exceed speed:** 450 kn (518 mph, 833 km/h) at 5,000 ft (1,500 m) with 18 Mark 82 bombs
- **Combat range:** 250 nmi (288 mi, 463 km)
    - **CAS mission:** 250 nmi (290 mi; 460 km) 1.88 hour loiter at 5,000 ft (1,500 m), 10 min combat
    - **Anti-armor mission:** 252 nmi (290 mi; 467 km) with sea-level penetration and exit, 30 min combat
- **Ferry range:** 2,240 nmi (2,580 mi, 4,150 km) with 50 knots (58 mph; 26 m/s) headwinds, 20 minutes reserve
- **Service ceiling:** 45,000 ft (13,700 m)
- **Rate of climb:** 6,000 ft/min (30 m/s)
- **Wing loading:** 99 lb/sq ft (482 kg/m^2)
- **Thrust/weight:** 0.47

The *DC Designs* A-10C *Thunderbolt II* is designed, like all *DC Designs* aircraft, to be as accurate as possible in its basic operation and flight model, but with accessible systems.

The A-10C Thunderbolt II is one of history's premier attack aircraft and has proven its efficacy in several theaters throughout the world. Designed around its renowned 30mm rotary cannon, the highly survivable A-10C can carry a wide range of weapon systems on its 11 hardpoints, including rocket pods, bombs, and missiles.

AIRCRAFT FAMILIARISATION

The A-10C Thunderbolt II is one of military aviation's most distinctive aircraft. Built around a rotary cannon the size of a small car, its twin turbofan engines are mounted high on its rear fuselage to mitigate foreign object debris (FOD) ingestion and its tail comprises twin vertical stabilizers.

The design emerged in response to a U.S. military requirement for a highly survivable, rugged, multi-role attack aircraft that could operate from austere and makeshift airfields. The A-10C is legendary for its versatility and its survivability, with many having returned from combat sorties with pieces missing due to enemy fire.

MAIN PANEL LAYOUT

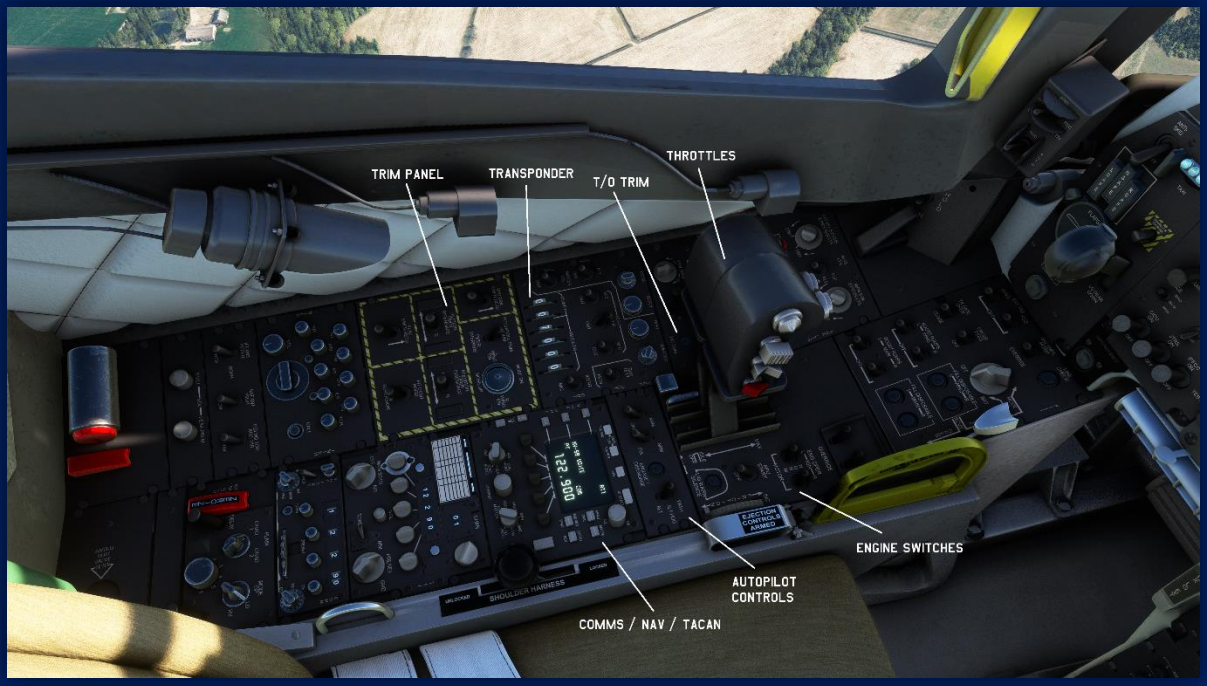
The A-10C *Thunderbolt II* has a very modern cockpit layout, familiar to most. The following pages will show the main instrument panels and features of the aircraft, as well as how to use the simulator's Interactive Checklist in order to find your way around the cockpit.

We recommend that you familiarize yourself with the location of controls before taking flight as this knowledge will greatly aid the flying experience.

Ensure that you use the Interactive Checklist to familiarize yourself with the location of all necessary controls for proper aircraft operation. This will ensure that you know the location of all relevant instruments when starting the A-10C from a cold and dark (parked) location.

The checklists include an Auto-Complete function that allows the user to go through the “cold and dark” start-up procedure more quickly. Alternatively, you can do so manually, and use the “eye” icon beside each step of the checklist to locate the relevant switches and controls.

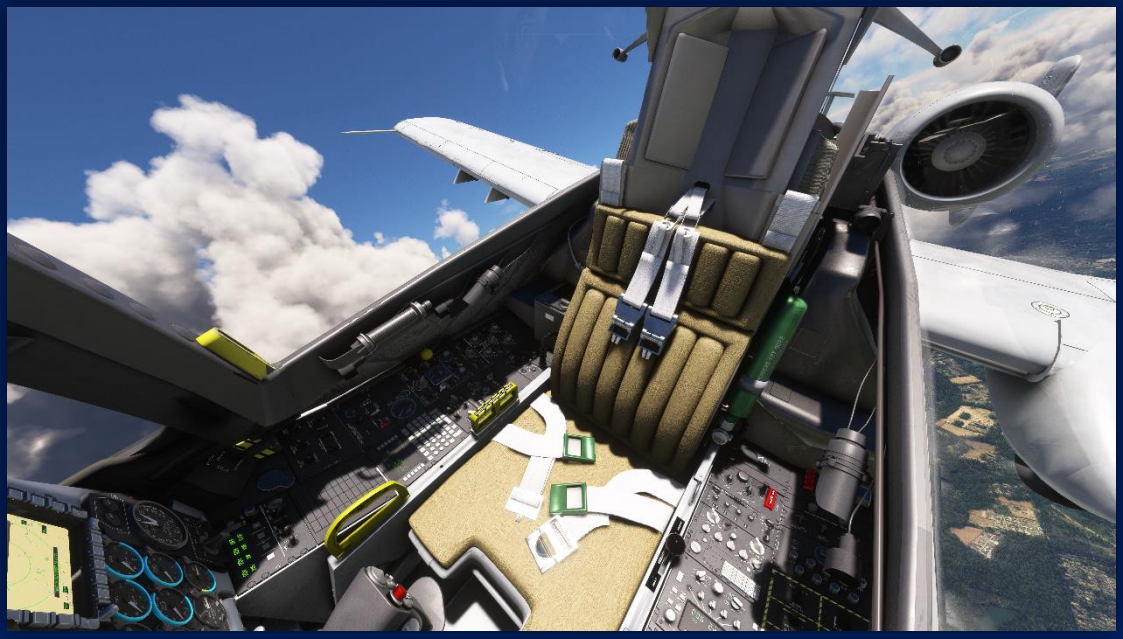
Primary flight instruments shown above. The two multi-function displays indicate pertinent navigation data, while the head-up display shows flight data through the pilot's viewing perspective. The artificial horizon and horizontal display indicator in the center of the panel provide attitude and navigational data. Airspeed, altitude, and vertical speed gauges surround the horizontal display indicator.



Left side panel: trim controls, throttles, transponder, digital communications systems and navigational input panel, autopilot controls, and engine controls. The small “warn silence” button just to the right of the throttles can be used to hide the throttles, making access to the take-off trim button and other switches easier for the pilot.

Fuel contents, fuel display selector, warning annunciators and generator switches can be found on the right-side panel. The FMC-style navigation computer can be used to input complex flight plans.

At the rear of the panel is an analog TACAN input panel, ILS frequency panel, and the interior and exterior lighting controls.



The A-10C Thunderbolt II features excellent rearward visibility, optimizing pilot visual situational awareness during flight operations. Full internal night-lighting is included in the cockpit.

FLYING THE A-10C THUNDERBOLT II

The A-10C *Thunderbolt II* is an aircraft that is relatively easy to fly. Broad, straight wings and large control surfaces give excellent response rates, and the slower flying airspeed gives the pilot more time to “get ahead of the aircraft” when compared to other modern fighter jets.

Although not by any means a dogfighter, the A-10C is none the less highly maneuverable, especially at lower altitudes where it conducts most of its operations.

NAVIGATION

The A-10C Thunderbolt in Microsoft Flight Simulator uses the aircraft's Flight Management Computer to enter all navigation data and also program flight plans and GPS routes.

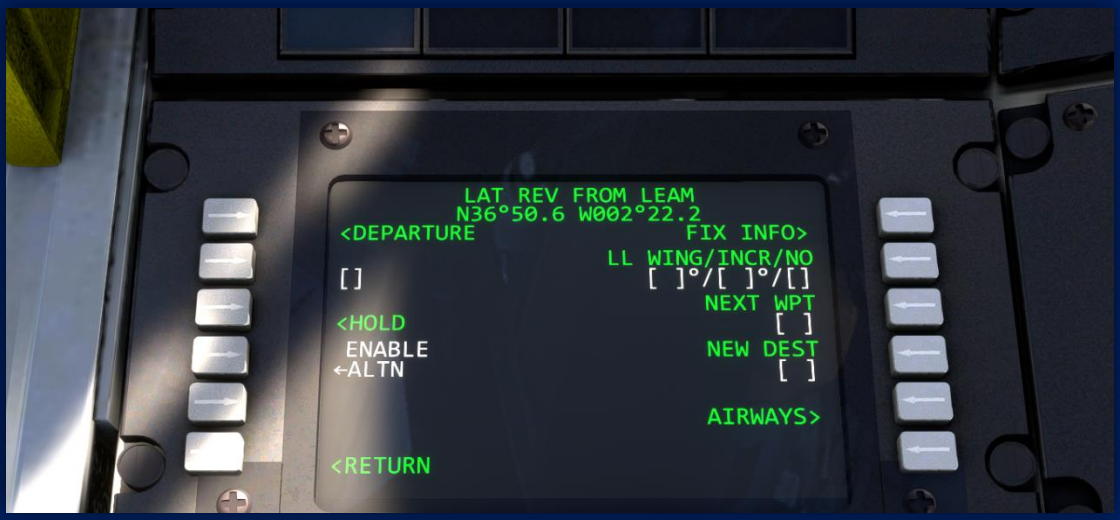
You can enter the Navigation Page via the NAV button, to enter VOR / TACAN / ADF data, or you can use the FPM key to enter the Flight Planning Menu and enter your flight plan details as below;

Input two ICAOs separated by / (Bottom left of screen) LEAM/LEAL here as an example.

Press R1 button, to store it in the ***FROM/TO***

Now you have a Flight Plan between 2 airports

The pilot can define departure procedure, arrival waypoints, and approach waypoints. For example: pressing L1 (where FROM LEAM is) will then display details of the airport;



Select the L1 button beside **<DEPARTURE**

Select a RWY, in this case 25, so button L3;

Here you have available departures, for example AGID1A, so press L3 again, and then INSERT (R6);

Now you have waypoints, and you can use the plus / minus keypad to displace them as required.

If you then select the Destination (LEAL, so L6 button)

It's the same menu but in this case, arrival, so you can define the arrival procedure in the same manner;

There is a list of approaches, including a runway with an ILS called 10 Zulu, so select L4;

and press R6 to insert;

You have now defined a flight plan, with departure and ILS approach waypoints.

The Microsoft Flight Simulator A-10C Thunderbolt doesn't have NAV (as per the real aircraft), so the autopilot will only allow manual headings, but the HSI will mark the route for you with course and distance;

CREDITS

Microsoft / DC Designs* A-10C *Thunderbolt II

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Flight dynamics	DC Designs
Textures	DC Designs
Manual	DC Designs
Sounds	Sim Acoustics
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