PRODUCT MANUAL

C-17 Globemaster III

36 articles · Complete website edition

Includes all article text, tables and available illustrations. Videos and interactive resources are linked. Printed page numbers restart with each article. Use the clickable contents or PDF bookmarks to navigate.

Contents

01. Welcome to the C17 Globemaster III

02. NOTAMs

03. Glossary

04. Liveries

05. PDF Manual

06. Overview

07. Overview - Exterior

08. Overview - Interior

09. Overview - Cargo Bay

10. Performance Characteristics

11. Flight Characteristics

12. Aircraft Systems

13. Propulsion System

14. Fuel System

15. Electrical System

16. Pneumatic/Environmental System

17. Hydraulic System

18. Flight Control System

19. Landing Gear System

20. Automatic Flight System

21. Navigation and Communication Systems

22. Mission/Flight Planning System

23. Simbrief Integration

24. Deicing/Anti-Icing System
25. Lighting Systems
26. Cockpit Displays
27. Primary Flight Display
28. Navigation Display
29. Plan Position Indicator
30. Engine Display
31. Configuration Display
32. Head-Up Display
33. Warnings and Annunciators Panel
34. Electronic Flight Bag
35. Cargo and Loadmaster
36. Normal Procedures

Welcome to the C17 Globemaster III

Caution
Please note that starting on Version Number V1.1.15, aggressive performance optimizations have been made, including limiting pages on PFD and MFDs, and mirroring both copilot's FMCs. More information here: NOTAMs

Note
Our team has made every effort to capture the C17 accurately based on the public documentation available. However, some systems have been simplified due to insufficient documentation. Remember that the C17 is in active service, and some areas of the aircraft are classified.

Note
This aircraft is exclusively available as part of MSFS2024 Premium Deluxe, and MS Marketplace. It is not available for download or sale at any other distributor.

Caution
SIMULATION USE ONLY - DO NOT USE THIS DOCUMENTATION ON A REAL AIRCRAFT

Welcome to the user manual for the Miltech Simulations C-17 Globemaster III for Microsoft Flight Simulator 2024. The C-17 Globemaster III is a 4-engine, heavy-lift, military transport aircraft manufactured by American aerospace company Boeing. The prototype C-17 took its maiden flight on September 15, 1991 and serial production airframes entered service on January 17, 1995 with the United States Air Force.

The C-17 is used primarily by the U.S. Air Force, the U.S. Air Force Reserve, and the U.S. Air National Guard. Other countries that operate the airframe include the United Kingdom, Australia, Canada, India, the United Arab Emirates, Kuwait, and Qatar. The C-17 is known for its operational versatility and mission adaptability, and it is renowned for being able to operate out of small and unimproved airfields. It can support military operations at all levels, tactical, operational, and strategic, and it can provide logistics for non-military initiatives including humanitarian assistance and scientific field work. The C-17 has operated on all seven continents and in all types of environments, from desert to polar, and has supported combat missions in Iraq and Afghanistan, among other locations.

The C-17 program traces its history to the 1979 Department of Defense Cargo Experimental (C-X) program. It outlined a request for a jet-powered aircraft that could perform global, strategic heavy-lift missions inclusive of troop transport and aerial delivery of paratroops and materiel. The aircraft needed to be able to accommodate the U.S. military’s largest pieces of equipment, including tanks, armored personnel carriers, trucks, and helicopters. It further needed to be able to operate out of short and austere airfields, including dirt strips. Meeting the requirement would prove technically difficult as it sought a functional hybrid of a C-130 Hercules, known for its ability to operate out of short and unimproved airfields, with the C-141 Starlifter, a heavy-lift strategic cargo airplane.

The military awarded the contract to American aviation and defense contractor McDonnell Douglas in August of 1981. The project was named the C-17 Globemaster III, extending a naming lineage that began with the Douglas C-74 Globemaster, a piston-powered cargo aircraft that first flew in 1945, and was continued with the Douglas C-124 Globemaster II, a piston-powered freighter that took its maiden flight in 1949.

In developing the C-17, McDonnell Douglas relied on work it had completed during the 1970s with their YC-15. The YC-15 was a 4-engine, jet-powered, experimental, short take-off and landing (STOL) tactical airlifter intended to replace the C-130 Hercules. The C-17 design, while similar to the YC-15, is much larger

and uses a different wing design. Production began in the early 1990s after initial successful test flights; Boeing took over the contract when it acquired McDonnell Douglas in 1997.

The C-17 is crewed by three: two pilots and a single loadmaster. It features a high-mounted, swept main wing with winglets for mitigation of drag-inducing vortex formation. The wing incorporates externally blown flaps for short field performance and uses advanced airfoil designs to maximize aerodynamic efficiency. Its large cargo hold can accommodate over 100 combat-loaded troops, 48 litters for medical transport operations, a single M1 Abrams main battle tank, tracked and wheeled vehicles, and all types of transport containers and pallets. It has an advanced glass cockpit and redundant digital fly-by-wire flight controls.

The aircraft measures 174 feet in length, stands 55 feet, 1 inch tall, and has a wingspan of 169 feet, 10 inches. It is powered by four wing-mounted Pratt & Whitney F117-PW-100 high-bypass turbofan engines that each generate up to 40,440 pounds of thrust.

The aircraft can carry up to 170,900 pounds of payload, has a range of 2,780 miles (extendible by in-flight refueling), and it cruises at 520 miles per hour. It can operate out of airfields as short as 3,000 feet in length, depending on load, and it can execute a 3-point turn within 80 feet due to thrust reversers.

We are excited to present this aircraft as our first collaboration with Microsoft and to see it officially released as part of the Microsoft Flight Simulator 2024 Premium Package.

We hope that you enjoy flying the Miltech Simulations C-17 Globemaster III,

Miltech Simulations Team - Gabriel, Dan, Chris, Rhys, Brayan, Max & our Partners at Echo19 and PropAir

Where to Get?

Microsoft Flight Simulator 2024 - Premium Deluxe Edition: Included

Microsoft Flight Simulator 2024 Marketplace

Miltech Simulations-Microsoft C-17 Globemaster III

NOTAMs

NOTAM - VERSION V1.1.15

PERFORMANCE IMPROVEMENTS

Please note that starting on Version V1.1.15, various aggressive measures have been taken to reduce the performance impact of the aircraft, particularly on Console:

- PILOT AND COPILOT MFD will now only display the "Primary Flight Display" Page. Other pages have been disabled on this display.
- PILOT AND COPILOT MFD will now function as a single-instance gauge. Meaning that they both display the exact same information: There is no individual control of Flight Directors or RA/BA Altitude Tape.
- BOTH CENTRAL MFDs will now only render the ND, PPI, ENG and CONFIG Pages. These will no longer render the Primary Flight Display page.
- BOTH HEADS UP DISPLAYS will now be rendered as a single-instance gauge. Meaning that both will display the exact same information: There is no individual control of Decluttler Stages, Flight Directors, or RA/BA Altitude Tape.
- COPILOT FMCs are now a mirror of the PILOT FMCs; resulting in only two usable FMCs on the pilot's side.

These adjustments were necessary to maintain performance consistency across **both PC and Xbox, in the future PlayStation** platforms. It is important to note that the total amount of code has a direct impact on memory usage. Due to the highly complex nature of this avionics suite, running 4x instances of the FMC and 4x instances of every MFD page exceeded the memory and performance limits of console hardware. Please note that an uncapped stream of the aircraft for PC Hardware is not available at this time.

In future updates, less restrictive optimizations may be introduced to restore functionality while maintaining negligible performance impact.

Miltech Simulations-Microsoft C-17 Globemaster III

Glossary

- A/D: Airdrop
- A/R: Air Refueling
- AAR: Air Refueling
- AFCS: Automatic Flight Control System, autopilot.
- BA: Barometric Altimeter
- BDHI: Bearing Distance and Heading Indicator
- CONFIG: Configuration Display, page on the MFD
- CPT: Captain, Pilot
- DCLT: Declutter (HUD)
- EFB: Electronic Flight Bag, cockpit tablet.
- ENG: Engine Display, page on MFD
- FO: First Officer, Copilot
- IAS: Indicated Air Speed
- MFD: Multi-function Display
- MSN: Mission, Flightplan as active on FMC
- ND: Navigation DIsplay, page on the MFD
- PFD: Primary Flight Display, page on the MFD
- RA: Radio Altimeter
- RDR: Radar
- SKE: Stationkeeping
- VS: Vertical Speed

Miltech Simulations-Microsoft C-17 Globemaster III

Liveries

A total of 6 Liveries are included with the aircraft. Special thanks to the Royal Canadian Air Force for licensing their iconography to be included with the package upon release.

More liveries will be available at Miltech Simulations website and MS Marketplace.

Livery	Livery	Livery
Default, Base Grey + Registration	177704, 429 Sqn, 8 Wing, Royal Canadian Air Force	177705, 429 Sqn, 8 Wing, Royal Canadian Air Force
Miltech House Livery - Fictional	87-0025, Factory Primer	Boeing House Livery Colours - Fictional

Miltech Simulations-Microsoft C-17 Globemaster III

PDF Manual

Caution
PDF Manuals may not be up to date with the latest product information. Using this web manual is recommended over the PDF version.

A PDF Version of this manual is available for download here:

↓ Download PDF manual

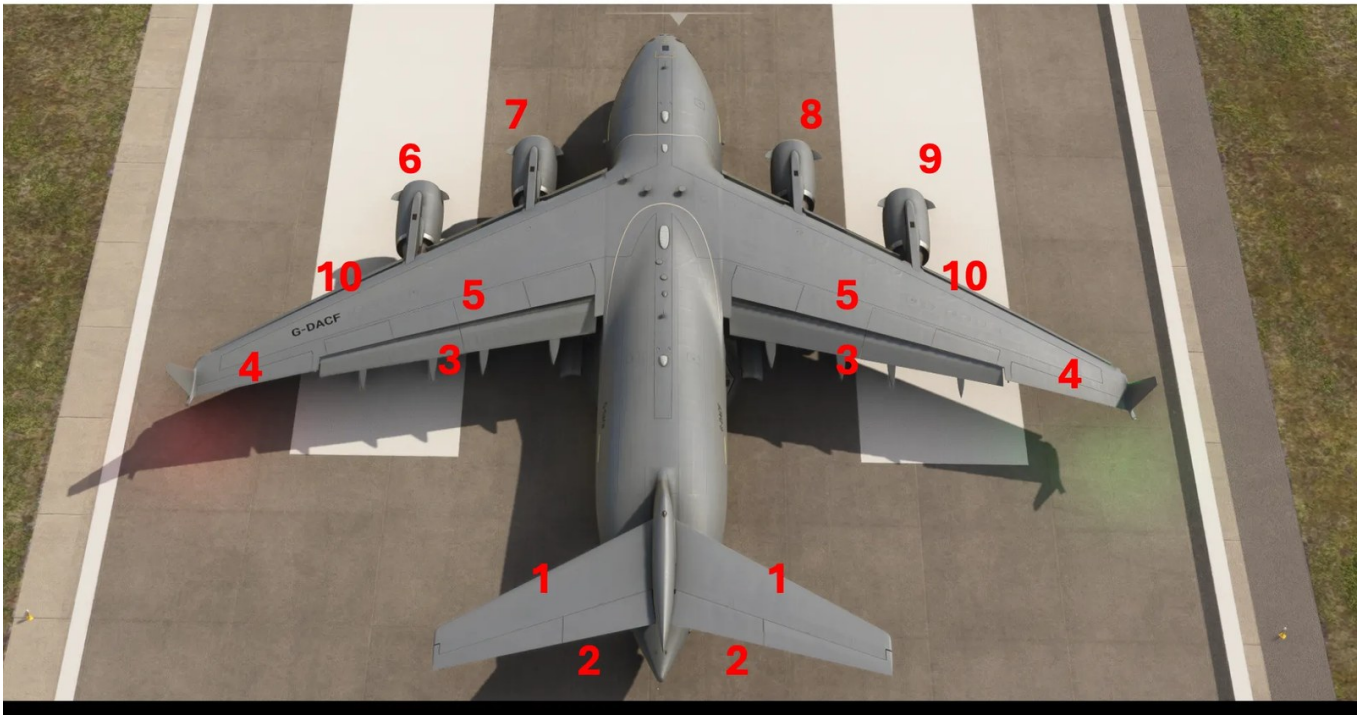
Miltech Simulations-Microsoft C-17 Globemaster III

Overview

- Overview - Exterior
- Overview - Interior
- Overview - Cargo Bay

Miltech Simulations-Microsoft C-17 Globemaster III

Overview - Exterior



Aircraft Exterior, Top View

1. **Horizontal Stabilizer**
2. **Elevators**
3. **Trailing-Edge Flaps**
4. **Ailerons**
5. **Spoilers**
6. **Engine 1**
7. **Engine 2**
8. **Engine 3**
9. **Engine 4**
10. **Leading-Edge Flaps (Slats)**



Aircraft Exterior, Side View

1. **Front Landing Gear**
2. **Side Crew Door**
3. **Main Landing Gear**
4. **Paratrooper Doors**
5. **Rudder**



Aircraft Exteiror, Front View

1. **Front Landing Gear**
2. **Aerial Refueling Port**



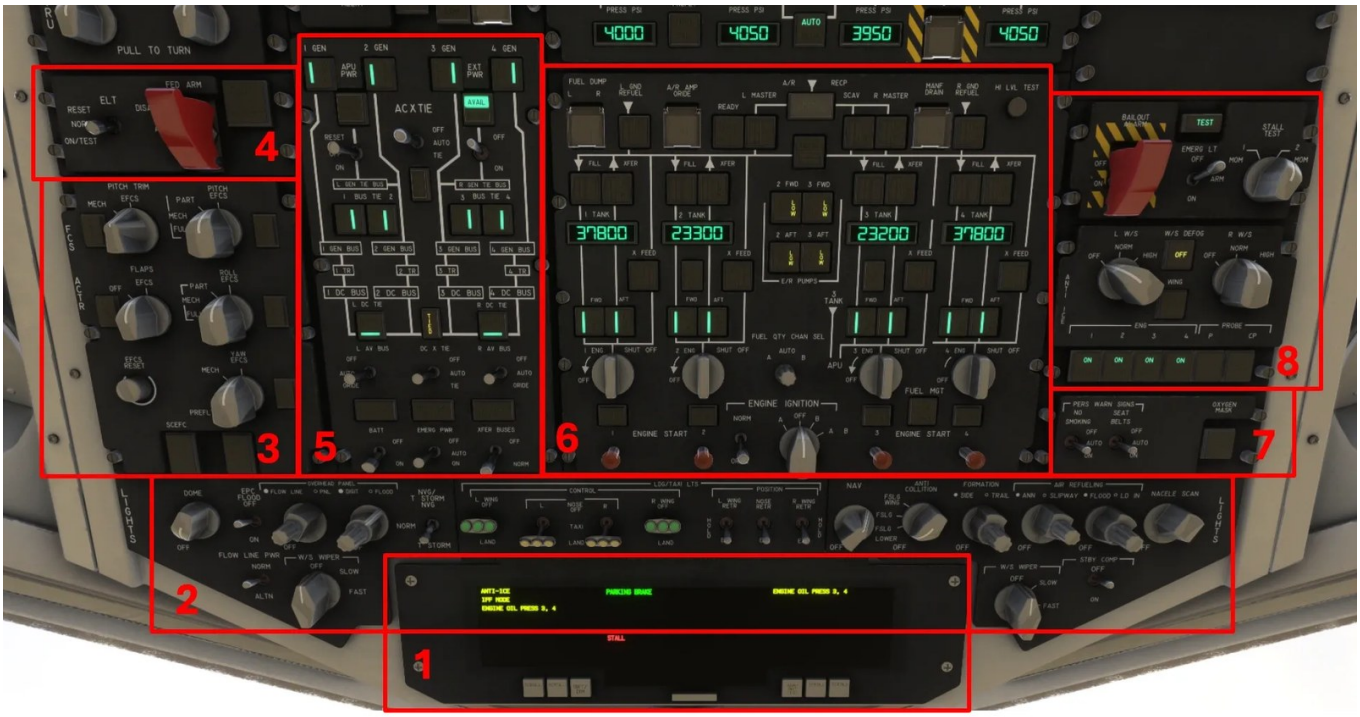
Aircraft Exterior, Cargo Ramp Closeup

1. **Cargo Ramp**
2. **Cargo Ramp Slide**
3. **Supporting Hydraulic Legs**
4. **Paratrooper Doors**

Miltech Simulations-Microsoft C-17 Globemaster III

Overview - Interior

Overhead Panel Overview



Lower Overhead Panel

1. **Warnings and Caution Annunciation Panel (WAP) Display**
2. **Lights and Windsield Wipers Panel**
3. **Electronic Flight Control Surfaces Panel**
4. **ELT/FED Arm Panel:** Functions are INOP
5. **Electrical System Panel**
6. **Fuel and Propulsion System Panel**
7. **Personal Warning Signs/Oxy Mask Panel**
8. **Anti Ice and Misc Panel**



Upper Overhead Panel

1. **Ground COMM and AR RECP Switches Panel:** Functions are INOP
2. ◇ **Inertial Reference Units 1 and 2 Selector Knobs:** All four IRUs need to be ON for the MFDs to be started correctly. Losing one or more (Up to 3 max) will not affect the capacity of completing a successful flight, however, the MFDs and other avionics will not be initialized with less than all four IRUs aligned.
3. **Backup Radio System:** INOP
4. **On Board Inert Gas Generating System (OBBIGS) Panel:** INOP
5. **Auxiliary Power Unit (APU) Panel**
6. **Hydraulic System Panel**
7. **Environmental System Panel**
8. **Fire Detection System Panel**
9. ◇ **Inertial Reference Units 3 and 4 Selector Knobs:** All four IRUs need to be ON for the MFDs to be started correctly. Losing one or more (Up to 3 max) will not affect the capacity of completing a successful flight, however, the MFDs and other avionics will not be initialized with less than all four IRUs aligned.

Main Glareshield Panel Overview



Main Glareshield

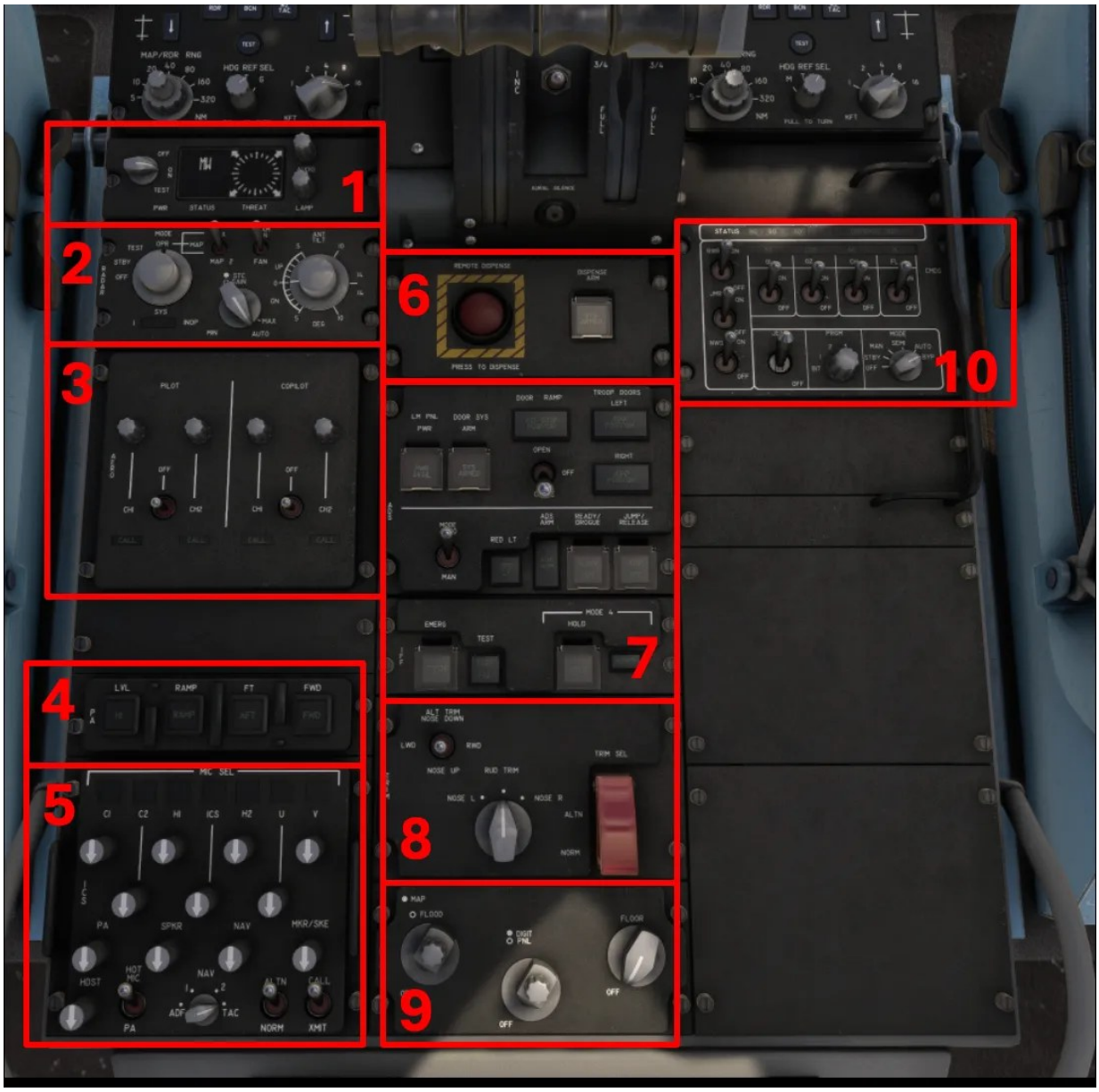
1. **Multi-FunctionHeads Up Display (HUD) Display, Pilot side**
2. **Master Caution/Master Warning/Other Alarms**
3. **Pilot Side COMNAV Panel**
4. **Autopilot Panel/Nav Controls**
5. **Fire Pull Handles**
6. **Copilot Side COMNAV Panel**
7. **Master Caution / Master Warning / Other Alarms**
8. **Copilot Side COMNAV Panel**
9. **↔ Clock / Bearing, Distance and Heading Indicator (BDHI) / Misc Nav Switches**
10. **Multi Function Display**
11. **Backup Attitude Instrument / Backup Airspeed / Altitude Indicator**
12. **Total Fuel Display**
13. **Landing Gear Handle / Landing Gear Status Lights / Brake Pressure Gauge**
14. **Backup Engine Display / Flaps Indicator Gauge / Spoiler Status Gauge / Trim (Yaw, Pitch, Roll) Gauges**

Centre Console Panel Overview



Upper Centre Console

1. **Multi-FunctionPilot Side Mission Computer Displays (2x) and Mission Computer Keyboard**
2. **Copilot Side Mission Computer Displays (2x) and Mission Computer Keyboard**
3. **Cabin Pressurization System Panel**
4. **Multi-Function Controls Units (MFCs)**



Lower Centre Console

1. **Defensive System Controls, AAR-47:** For display only
2. ◉ **Radar:** Knobs INOP.
3. **Aero-I Control Panel:** INOP
4. **Public Address (PA) Panel:** INOP
5. **Inter-comm System Panel**
6. **Defensive System Controls, Remote Defences:** For display only
7. **Aerial Delivery System, IFF Panel:** INOP
8. **Trims Panel**
9. **Centre Console Lighting**
10. **Defensive System Controls:** ALE-47

Miltech Simulations-Microsoft C-17 Globemaster III

Overview - Cargo Bay

The C17 is the most flexible cargo aircraft to enter the airlift force, and as such, is designed to be quickly adapted for various types of sorties and airlift operations. The cargo bay is equipped with foldable seats on both sides of the aircraft. The cargo bay has enough capacity for 102 Paratroopers, or 134 troops, or One heavy tank, or Three Armored Vehicles, or 10 HWMVVs, or one CH47 Fuselage or two UH60 fuselages.



Cargo Bay Overview

- **Loadmaster Station:** Located on the Front of the cargo bay, to the right side of the cockpit stairs. The Loadmaster typically manages cargo operations. This station is equipped with controls and monitoring systems for the loading and unloading process, ensuring cargo is distributed properly and safely. It usually includes displays or instruments for weight distribution, cargo restraint systems, and communication tools to stay in contact with the flight crew and ground personnel. The Loadmaster ensures that cargo is properly secured, balanced for the flight, and that it adheres to aircraft limitations for safe operation. Here you will find a laptop computer that can be used to load cargo and fuel into the aircraft.
- **Cargo Ramp and Cargo Door:** The cargo door and ramp ssytem consists of the Cargo Door, Cargo Ramp and Ramp Toes. The system is used with the ramp in the horizontal position for straight-in loading/offloading or during airdrop operations. The ramp toes can also be lowered to ground level for on/offloading rolling stock and personnel. The system requires electrical power and hydraulic pressure from No.2. Doors can be operated from the EFB/Loadmaster Laptop. or from the Doors Loadmaster Panel
- **Side Paratrooper Door:** Two side Paratrooper Sliding doors are located in the rear side of the cargo bay. Each door features an external wind deflector that deploys automatically upon opening. Doors do not require Hyd or Electrical Power to be operated. Doors can be opened by clicking on the door handles or through the EFB/Loadmaster Laptop.
- **Side Crew Door:** The side crew door is located in the front, left side of the aircraft, opposite to the Loadmaster Station. Features a staircase for direct access into the Cargo Bay. Door do not require Hyd or Electrical Power to be operated. Door can be opened by clicking on the door handles or through the EFB/Loadmaster Laptop.

- **Lavatory and Galley:** The lavatory is found in the front side of the Cargo Bay. Lavatory is accessible and flushable on this rendition of the aircraft. A small galley is located under the cockpit stairs.
- **Loadout Options and EFB:** Various loadout options, including presidential motorcades, pallets, helicopter fuselages and military vehicles are included. These can be selected and toggled on/off from the EFB in the cockpit, or the Loadmaster Laptop.

Miltech Simulations-Microsoft C-17 Globemaster III

Performance Characteristics

Note
Please note that the publicly known performance figures for the C17 Globemaster are limited due to the fact that the aircraft is in active military service. Specific performance figures are unavailable.

Wingspan to Winglet Tip	169.8 ft (51.74 m)
Length	174 ft (53.04 m)
Height at Tail	55.1 ft (16.79 m)
Fuselage Diameter	22.5 ft (6.86 m)
Number of Engines	Four (4)
Engine Type	F117-PW-100
Thrust per Engine	40,440 lbs Each
Area	3,800 sq. ft. (353 sq. m)
Aspect Ratio	7.165
Sweep Angle	25 degrees
Airfoil Type	Supercritical
Flaps	Fixed-vane, double-slotted, simple-hinged
Area	845 sq. ft. (78.50 sq. m)
Span	65 feet (19.81 m)
Aspect Ratio	5.0
Sweep	27 degrees
Maximum Zero Fuel Weight (MZFW)	282,500 lb (128,140 kg)
Max Takeoff Weight (MTOW)	585,000 lb (265,352 kg)
Max Landing Weight, Full Flaps	502,100 lb (227,748 kg)
Fuel Capacity	35,546 US gal
Capacity	170,900 lb (77,519 kg)
Capacity, in Pallets	18 463L Master Pallets
Capacity, in Troops	134 Troops, seated

Wingspan to Winglet Tip	169.8 ft (51.74 m)
Capacity, in Paratroopers	102 Paratroopers, seated
Capacity, in Vehicles	One heavy tank, or Three Armored Vehicles, or 10 HWMVVs
Capacity, in Aircraft	One CH47 Helicopter Fuselage, or two H60 Helicopter Fuselages
Cruise Speed	450 kn (Mach 0.74-0.79)
Range	2,420 nmi with 157,000 lb payload
Ferry Range	6,230 nmi
Service Ceiling	45,000 ft
Takeoff Run at MTOW	8,200 ft
Takeoff Run at 395,000 lbs	3,000 ft
Landing Distance	3,500 ft

Flight Characteristics

Flight By Wire

In 1993, the C17 Globemaster III became the first military aircraft to feature a complete Electronic Flight Control System, also known as Flight by Wire system. The FBW system utilizes force sensors on pitch, roll and yaw axes to provide pilot commands to four separate Flight Control Computers. These FCCs combine the commands and apply the output commands to the control surfaces (Elevators, Rudder and Ailerons). The fly-by-wire computers act to stabilize the aircraft and adjust the flying characteristics without the pilot's involvement (eg. aircraft holds the attitude), and to prevent the pilot from operating outside of the aircraft's safe performance envelope.

As a result of the FBW System, the aircraft will actively attempt to hold attitude and roll, as long as it is safe to do so (eg. aircraft is not at risk of stall) by automatically adjusting the trims and control surface input. In essence, the aircraft will follow and keep the pilot's commands.

FBW can be deactivated from the Flight Control System panel overhead. Deactivating FBW will therefore use the Mechanical backup system, and the aircraft will no longer hold attitude automatically

Backside Flying

One of the most distinctive characteristics of the C-17 Globemaster III is how its flaps interact with the engine thrust, a concept known as **Externally Blown Flaps (EBF)**. Unlike conventional aircraft, where flaps primarily increase wing lift by changing the wing’s camber, the C-17’s flaps extend into the jet exhaust streams from its engines. This interaction directs a portion of the engine thrust downward, effectively converting some forward thrust into **additional lift**.

This system, referred to as **powered lift**, gives the C-17 exceptional short-field and high-angle-of-attack capabilities. During approaches or maneuvers with high flap settings, this powered lift allows the aircraft to maintain controlled flight even at **very low airspeeds**, something that would be challenging for conventional large transports. Pilots often refer to this flight regime as **Backside Flying**, because the usual relationships between pitch, airspeed, and climb/descent behavior are inverted compared to standard flight.

In powered lift mode:

- **Thrust directly controls the flight path angle and vertical speed**, allowing precise control over climb or descent without large pitch adjustments.
- **Pitch primarily controls airspeed**, rather than the flight path, which is the opposite of normal jet transport behavior.

The effects of the Externally Blown Flaps on the C-17 become most pronounced at high flap settings, typically flaps 25 to 40 (depending on configuration and weight). In lower flap settings (e.g., flaps 5-15), the effect is present but much less pronounced, and the aircraft behaves more like a conventional jet transport. This effect is therefore more present at low speeds.

Tactical Descents

The C-17 Globemaster III can execute a rapid tactical descent from FL300 to FL50 in less than two minutes by utilizing reverse idle thrust, and in some cases, Spoilers and Flaps to increase drag and accelerate the descent rate, which can exceed 15,000 feet per minute. This aggressive maneuver, often employed in combat scenarios to avoid detection or threats, involves a steep descent angle and requires precise control by the flight crew to maintain safe airspeeds while shedding altitude quickly.

Miltech Simulations-Microsoft C-17 Globemaster III

Aircraft Systems

- Propulsion System
- Fuel System
- Electrical System
- Pneumatic/Environmental System
- Hydraulic System
- Flight Control System
- Landing Gear System
- Automatic Flight System
- Navigation and Communication Systems
- Mission/Flight Planning System
- Simbrief Integration
- Deicing/Anti-Icing System
- Lighting Systems

Miltech Simulations-Microsoft C-17 Globemaster III

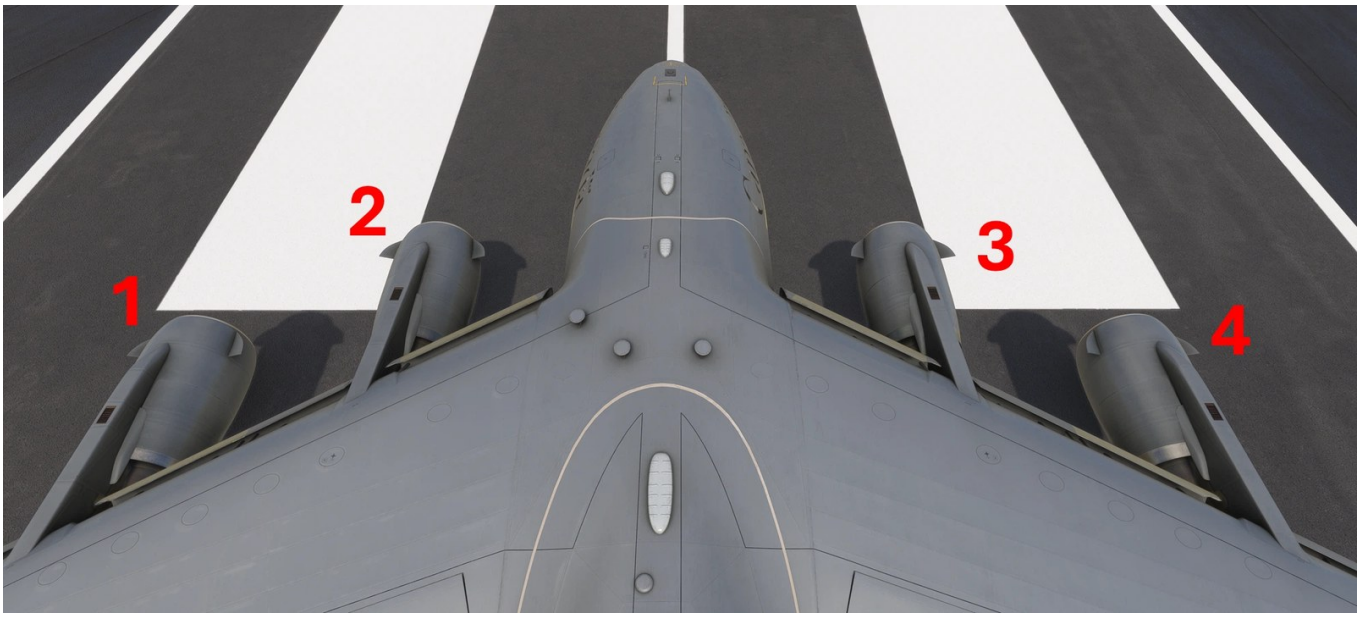
Propulsion System

Note
Tactical In-Flight Reversers are not supported on initial release of this aircraft due to MSFS Limitations. We are working on an alternative, bypass solution to implement in a future update.

The Engine

The aircraft is powered by four F117-PW-100 Fly-By-Wire Turbofan Engines. The F117-PW-100 is a dual spool, single-stage fan, high bypass ratio (6:1) turbofan with a maximum flat rated thrust of 40,440 pounds at sea level.

Engines are numbered 1-4, being Engine #1 the leftmost engine, and #4 the rightmost engine. All four engines have Thrust Reversers, that can only be use while the aircraft is on the ground. Tactical In-Flight reversers will be supported in the near future through an update.



Engine Numbering

Engine Controls, Ignition, Starting

The engine propulsion is controlled by the four Engine Throttle levers located in the centre console. You may keybind each axis individually to ENGINE THROTTLE 1 through ENGINE THROTTLE 4; or use a single ENGINE THROTTLE axis to control all four at the same time.

The Engine Control panel is located in the Overhead Panel, just under the Fuel System Panel.



Engine Control Panel, Overhead

1. **Engine 1/2/3/4 Shutoff Valve:** Control fuel to the respective engine. Closing the valve will shut down the engine due to fuel starvation.
2. ◇ **Fuel Qty Fuel Selector:** INOP
3. **Engine Starter 1/2/3/4:** Opens the starter control valve to start the engines. Requires SHUTOFF VALVE of the respective engine to be in the opened position.
4. **Engine Ignition Override:** INOP
5. ◇ **Engine Ignition Selector:** Ignition System Selector.
6. OFF: Both systems are turned off, engines cannot be ignited.
7. A: Left side Ignition armed, engines 1 and 2 can be started.
8. B: Right side Ignition armed. engines 3 and 4 can be started.
9. A\&B: Both ignition systems are armed

Engine Backup/STBY Display

Engine information (N1, N2, EPR, EGT, FF, Oil, etc.) Is generally available on the MFD Engine Pages. For more details, look at the MFD Section of this manual. However, the aircraft is equipped with a low-consumption LCD Display to allow monitoring of the engines in the case of an electrical failure, or any other situation that renders the MFDs unusable. The Engine Backup Display is located just under the two center MFDs, and along with the Display you will find an array of buttons and knobs to control the Engine Thrust Ratings.



Engine Standby Display

1. ◉ **EPR Rating Knob:** The knob is engaged when EPR MODE is set to MAN. You may then rotate the node to increase or decrease EPR Selection.
2. ◇ **Mode Selector:** Provides power to the Standby Engine Instrument and selects either N2 or EPR Digital Indications
3. **RTG Value Selected:** Displays Rating selected for the engines. The selected value only engages when Mode selected is MAN, otherwise it remains standby.
4. **Mode Selected Display:** Displays mode selected among those selectable on the right side of the STBY Display.
5. **N2/ERP Display:** Displays engine N2 or EPR Rating. These cannot be viewed at the same time.
6. **EGT Display:** Displays Engine Gas Temperature for all four engines.
7. **N1 Display:** Displays N1 for all four engines.
8. **Mode Options:** Selects engine mode from the five available - MAX, INT, MCT, DRT and MAN.

Engine Thrust Ratings

Different Thrust Rating Modes can be selected through the buttons on the left side of the STBY Engine Display. This will effectively set a RATING LIMIT BAR on the MFD Eng Page, and limit the performance of the engines to reduce wear and tear.



Engine Thrust Ratings

- MAXIMUM (MAX): The maximum thrust approved for the engine. This rating is limited to five minutes for takeoff. Shall only be used for takeoff and go around.
- INTERMEDIATE (INT): The maximum thrust certified for continuous use. Shall be used at pilot's discretion.
- MAXIMUM CONTINUOUS THRUST (MCT): The maximum thrust recommended for normal climb operations. Recommended setting for cruise.
- DERATED THRUST (DRT): The minimum thrust required to perform a takeoff safely.

Thrust Reversal System

Engine Thrust Reversal is available on all four engines, and can be engaged through the regular keybinds (TOGGLE REVERSE THRUST). At this time, Thrust reversers are only available on the ground. Tactical In-Flight reversers will be supported in the near future through an update.

Yellow UNLK Icons will show up on the MFD Display to signal the reversers are unlocked. These turn blue "REV" when full reverse thrust is set.



Yellow UNLK Icons



Blue REV Icons

Engine Instruments

- Refer to Cockpit Displays Section, MFD ENG Page
- Refer to Above Section, STBY ENGINE

Fire Detection System

Engine Fire, fire detection and fire suppression is not supported on this aircraft. However, the four Fire Extinguishing handles are functional. Pulling any of the four Extinguishing Handles will cut fuel to the engine, and shut it down automatically. This action cannot be reversed unless the flight is restarted.



Fire Extinguisher Handles

Fire detection tests for systems A and B are fully modeled, as smoke detection lights. Aural warnings will be heard during fire tests. The aircraft also requires all fire detection systems to be enabled as part of the cockpit pre-start procedures.



Fire Detection System

Miltech Simulations-Microsoft C-17 Globemaster III

Fuel System

C17's Fuel Supply System is designed to provide an uninterrupted flow of fuel under all conditions, attitudes, and altitudes encountered in normal operations. The system consists of four Main Wing tanks, one Extended Range Tank (ER Variant modeled), eight + four boost pumps, four tank transfer pumps, a jettison system, Aerial Refueling valves and all associated indicators.

Fuel Tanks

This rendition of the C17 (ER Variant) Features a total of five fuel tanks:

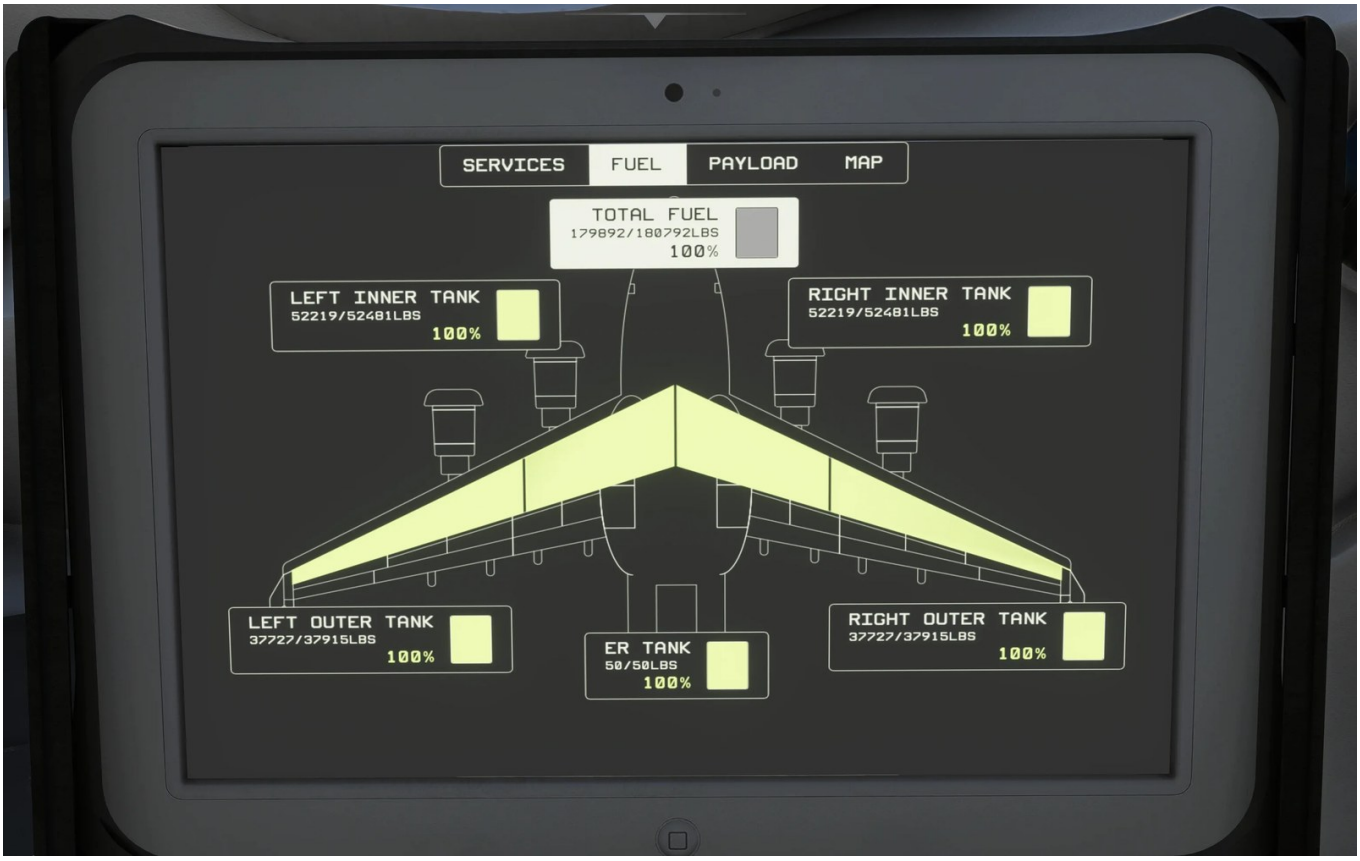
- Two Outboard wing fuel tanks (No. 1 and No. 4), with a capacity of 37,915 lbs each.
- Two Inboard wing fuel tanks (No. 2 and No. 3), with a capacity of 52,481 lbs each.
- One Extended Range fuel Bladder, with a capacity of 64,433 lbs

Total fuel capacity is therefore 245,226lbs

Fuel is automatically transferred from the ER Tank into the Inboard tanks, and then to the engines. The ER tank has four electrical boost pumps to increase fuel flow outboard from the tank.

After ER tank is depleted completely, fuel will flow out from all four tanks and into the engines, each aided by its boost pump. However, the engines can operate normally without any fuel pumps by a combination of gravity feed and suction feed from the engines.

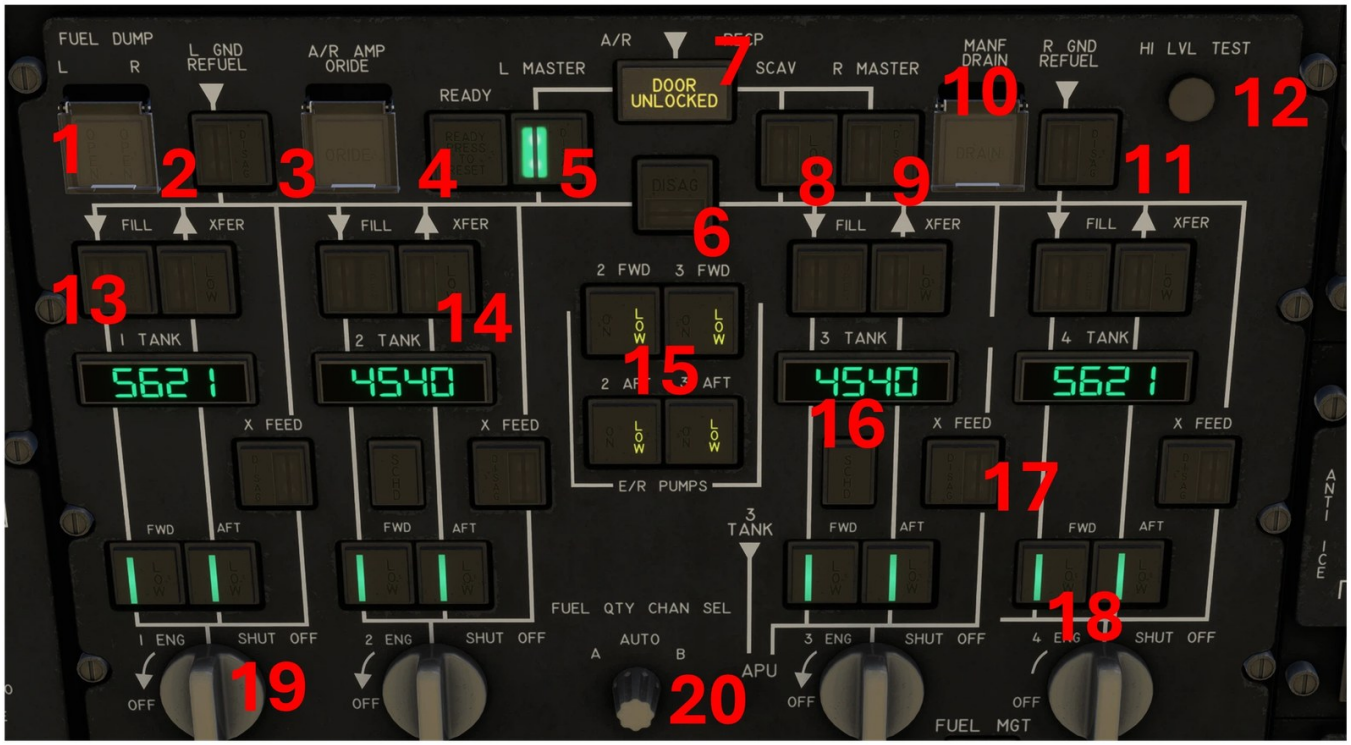
Fuel capacities and system overview can be seen on the Electronic Flight Bag, Fuel Page.



Fuel Page, EFB

Fuel Panel

The fuel panel is located on the overhead panel of the aircraft, right above the Engine Panel and next to the Electrical Panel.



Fuel Panel, Overhead

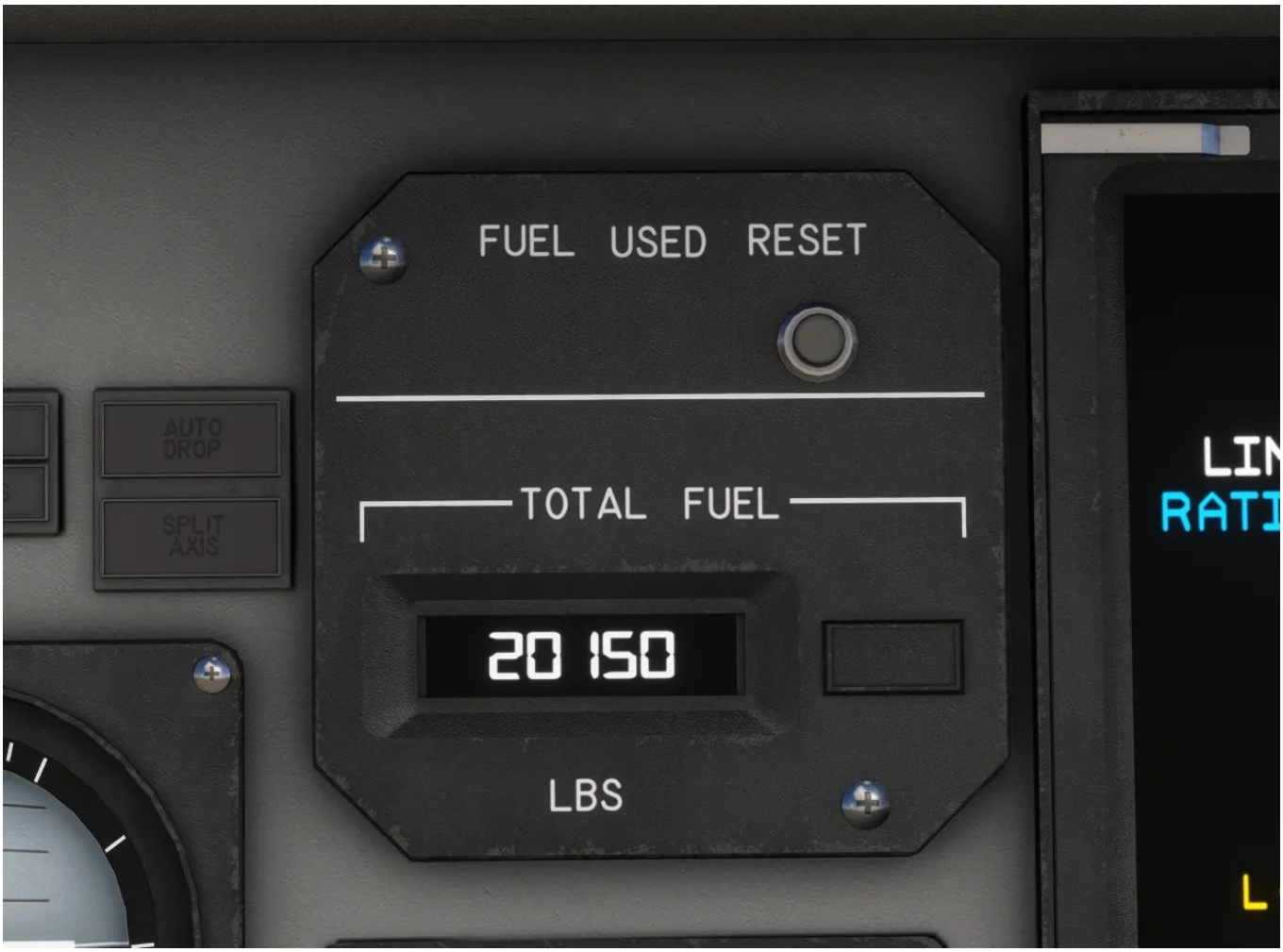
1. **Fuel Dump Valves, L and R:** Open valves for fuel dumping. See section below for Fuel Dumping.
2. **L Ground Refuel:** INOP. These valves are used to pump fuel from ground to the tanks given the elevation of the wings during single-point refueling, resulting in the "Moose sounds". This is not necessary on MSFS.
3. **A/R AMP ORIDE:** INOP
4. **A/R READY:** INOP
5. **A/R Left Master:** Master Left Aerial Refueling Pump. Opens the AR Slipway and turns on flow of fuel towards the fuel tanks during AAR Operations.
6. **Separation Var:** Separates the left and right side of the fuel manifold. It is required to be opened for crosfeeding and fuel transfering operations.
7. **A/R Door Status Light:** Turns on if Aerial Refueling door is unlocked/opened.
8. **↔ Scavange Pump Switch:** INOP
9. **A/R Right Master:** Master Right Aerial Refueling Pump. Opens the AR Slipway and turns on flow of fuel towards the fuel tanks during AAR Operations.
10. **Main Drain:** INOP
11. **R Ground Refuel:** INOP. These valves are used to pump fuel from ground to the tanks given the elevation of the wings during single-point refueling, resulting in the "Moose sounds". This is not necessary on MSFS.
12. **HI LVL TEST:** INOP

13. **Fill Valves (x4):** Provide pressure into fuel tanks for fuel transferring operations.
14. **XFER Valves (x4):** Provide pressure out from fuel tanks for fuel transferring operations.
15. **ER Pumps (x4):** Provide additional pressure to fuel flowing outwards from the ER Tank. If pumps are off, the fuel will continue flowing due to gravity.
16. **Tank Quantity Indicator (x4):** Provides a continuous digital reading to the nearest 100 pounds of fuel of each associated tank. This is, other than the EFB, the only display of fuel quantity per tank on the aircraft.
17. **Crossfeed Valve (x4):** Controls the associated crossfeed valve for fuel transfer operations.
18. **Forward/Aft Fuel Boost Pumps (x4 of each):** Provide additional fuel pressure to each associated tank. If pumps are off, the fuel will continue flowing due to gravity feed and suction feed. APU requires Boost Pump 3 FWD and/or AFT to function continuously.
19. **Engine 1/2/3/4 Shutoff Valve:** Control fuel to the respective engine. Closing the valve will shut down the engine due to fuel starvation.
20. ◇ **Fuel Qty Fuel Selector:** INOP

Total Fuel Indicator

Additional to the overhead displays, a Total Fuel Indicator is located in between the two pilot MFDs. It provides a continuous display of total fuel quantity, equal to the sum of fuel available on all tanks, including the ER Tanks in pounds.

The LOW amber alert lights up when fuel quantity is under 16,000 pounds. Additionally, Master Caution and Low Fuel WAP will illuminate.



Total Fuel Indicator

Crossfeeding

Note
Crossfeeding, Fuel Transfer and Fuel Dumping are only available starting Update 1 (v.1.0.5)

Note
Crossfeeding and Fuel Transfering is not currently possible at the same time. The Aircraft will automatically manage the fuel panel valves and pumps to avoid crossfeeding/fuel transfer overlaps.

Engines and APU can feed from different tanks as desired. To crossfeed from one engine to another, activate the corresponding XFEED pumps from the two engines you want to feed. The tank with highest fuel qty OR fuel pressure will feed the engine receiving the lowest fuel qty/pressure.

Fuel Transfer

Fuel can be manually transferred from any tank (except the ER Tanks) into any other tank. A fuel manifold exists to facilitate the transfer. The manifold is separated by a Separation Valve, keeping the left and right side of the aircraft disconnected, except in case this valve is opened.

To transfer fuel from one tank to another, the XFER Pump on the feeder tank would be engaged, and the FEED valve would be opened in the receiver tank. Fuel will flow through the manifold. Use Separation valve as required if fuel needs to flow from one side of the aircraft to another. Multiple feeder/receiver tank operations are supported, and flowrates are added/divided accordingly.

This process is "active", meaning that it will not stop automatically when tanks are balanced. Fuel transfer stops automatically if feeder tank is empty, or receiving tank(s) is at maximum capacity. The real aircraft has an automatic fuel transfer system to keep the outboard tank balanced out with the inboard tanks. This has not been implemented at this time.

Fuel Dumping

Fuel dumping is supported. Lift the switch cover and press the button controlling Fuel Dump Valves to initiate dump procedure. Fuel dumps from all tanks at the same time, at a rate of approx. 6700 pounds per minute. Fuel dumping automatically stops when total fuel quantity is 20,000 pounds.

Aerial Refueling

Aerial Refueling will be supported by 3rd party addons such as the upcoming Aerial Refueling Pro by Miltech Simulations. The AR Slipway door can be opened by pressing the A/R MASTER Button (L or R), or through the EFB Services tab.

Electrical System

The C17 Electrical system provides and distributes power to various components and systems onboard, ensuring the proper functioning of essential and non-essential equipment. It powers avionics, lighting, navigation systems, communication devices, cockpit displays, and control surfaces. Additionally, the system supports critical operations such as engine starting, de-icing, cabin pressurization, and fuel management.

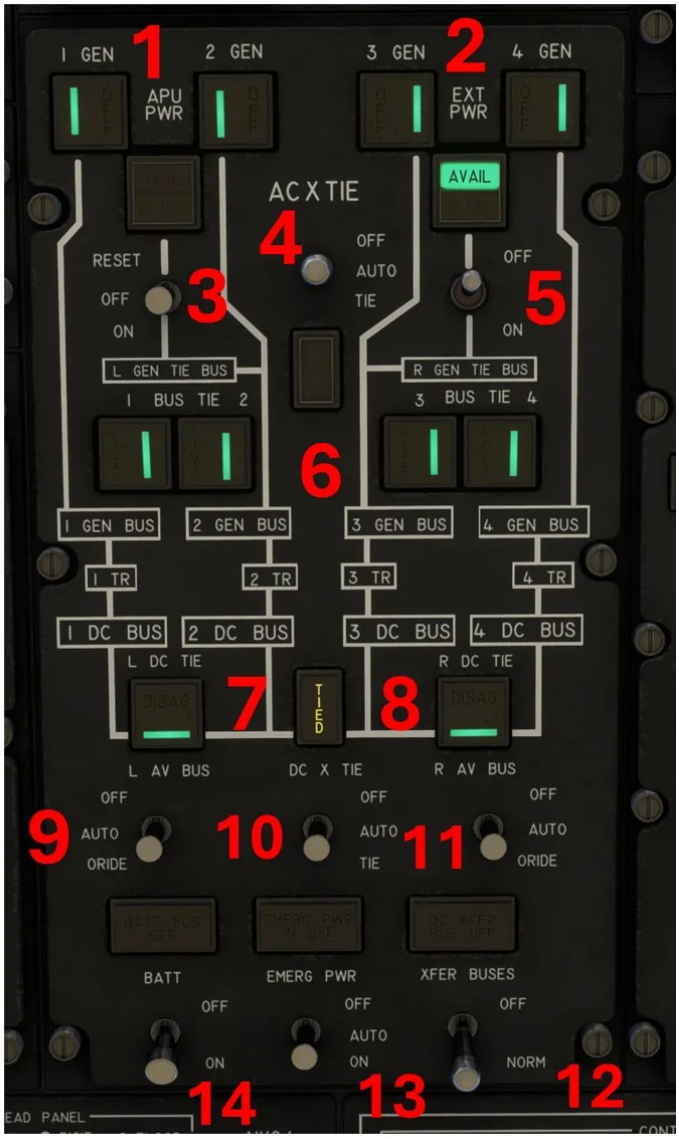
The electrical system on the Globemaster III consists of:

- Four Generators, one for each engine.
- An Auxiliary Power Unit
- An array of Batteries
- A connecting port for Ground Power Units

Additionally, AC Convertors, Buses and Circuit panels guarantee the correct distribution of power in the aircraft.

Electrical Panel

The electrical panel is located on the overhead panel of the aircraft, right next to the fuel and engine panels.



Electrical Panel (Overhead)

1. **Engine Generators 1 and 2:** Provide the aircraft AC Current from the engine 1 and 2 generators. The flow bar indicates switch position only. The yellow OFF light lights up if generator is not providing current.
2. **Engine Generators 3 and 4:** Provide the aircraft AC Current from engine 3 and 4 generators.
3. **APU Generator:** Provide the aircraft AC Current from the Auxiliary Power Unit, provided that the APU is on. The two leds above will display if APU is available or in use.
4. **AC X Tie:** Closes/opens AC Cross Tie circuit. AUTO is its normal position.
5. **External Power Toggle:** Connects/Disconnects External Power/Ground Power Unit, provided GPU is available.
6. **↔ 1-4 Bus Ties Switches:** Opens/closes pass of current through bus ties.
7. **L DC Tie:** Opens/Closes Left DC Tie Circuit.
8. **R DC Tie:** Opens/Closes Right DC Tie Circuit.
9. **Left Avionics Bus:** Opens/Closes flow of electricity to the Left Avionics Bus. AUTO is its normal position.

10. **DC X Tie:** Closes/opens DC Cross Tie circuit. AUTO is its normal position.
11. **Right Avionics Bus:** Opens/Closes flow of electricity to the Right Avionics Bus. AUTO is its normal position.
12. ↔ **XFER Buses Toggle Switch:** Switches behavior of transfer busses in case of de-energizing.
13. ↔ **Emergency Power Toggle:** Switches operation mode of emergency power. AUTO is its normal position.
14. ↔ **Master Battery Switch:** Switches battery on/off.

The Auxiliary Power Unit (APU)

> Note
> The APU may take up to one minute to start. This is normal and accurate to the real aircraft.

The auxiliary power unit is a gas turbine engine, located in the forward section of the right main landing gear pod. The APU provides auxiliary electric, hydraulic, and pneumatic power to the aircraft when the engines are turned off.

The APU Feeds from Fuel Tank #3. Fuel may be fed by gravity, however, it is recommended to have at least one boost pump on to provide sufficient pressure - the APU may shut down due to fuel starvation if pressure is insufficient for a period of more than two minutes. The APU is unable to feed from any other fuel tank, unless XFEED of fuel is occurring towards Tank 3.

The APU Panel is located directly above the Electrical panel.



APU Panel

1. **APU Display:** Displays APU RPM and Engine Gas Temperature.
2. ↔ **APU Starter/Control Switch:** OFF/RUN/START, used to start and stop the APU turbine.
3. **Auto Shutdown Override:** INOP
4. ◇ **Mode Selector:** INOP

5. **Fuel Press Indicator:** The amber light will turn on if fuel pressure to the APU is low. Will extinguish if either Tank 3 Boost Pump is enabled.
6. **APU Fire Alarm**
7. **APU Fire Agent Discharge:** INOP

The Auxiliary Power Unit not only provides electricity (Provided that the APU Generator Switch is on), but it also provides hydraulic pressure through the AUX Pumps. The APU can pressurize all four lines to aprox. 3800 PSI (slightly under their normal pressure of 4000 PSI) by using the AUX Hydraulic Pumps on any of the systems. This means that ramps and doors, as well as control surfaces, can be fully operated on APU Power alone. Auxiliary Pumps are entirely electric (AC), so these can also function with Ground Power.

Additionally, the APU provides Pneumatic pressure through the APU Bleed to the R Pack (Directly) and L Pack through the Bleed XFEED Valve. This provides environmental control (AC) and de-ice/anti-ice systems.

Miltech Simulations-Microsoft C-17 Globemaster III

Pneumatic/Environmental System

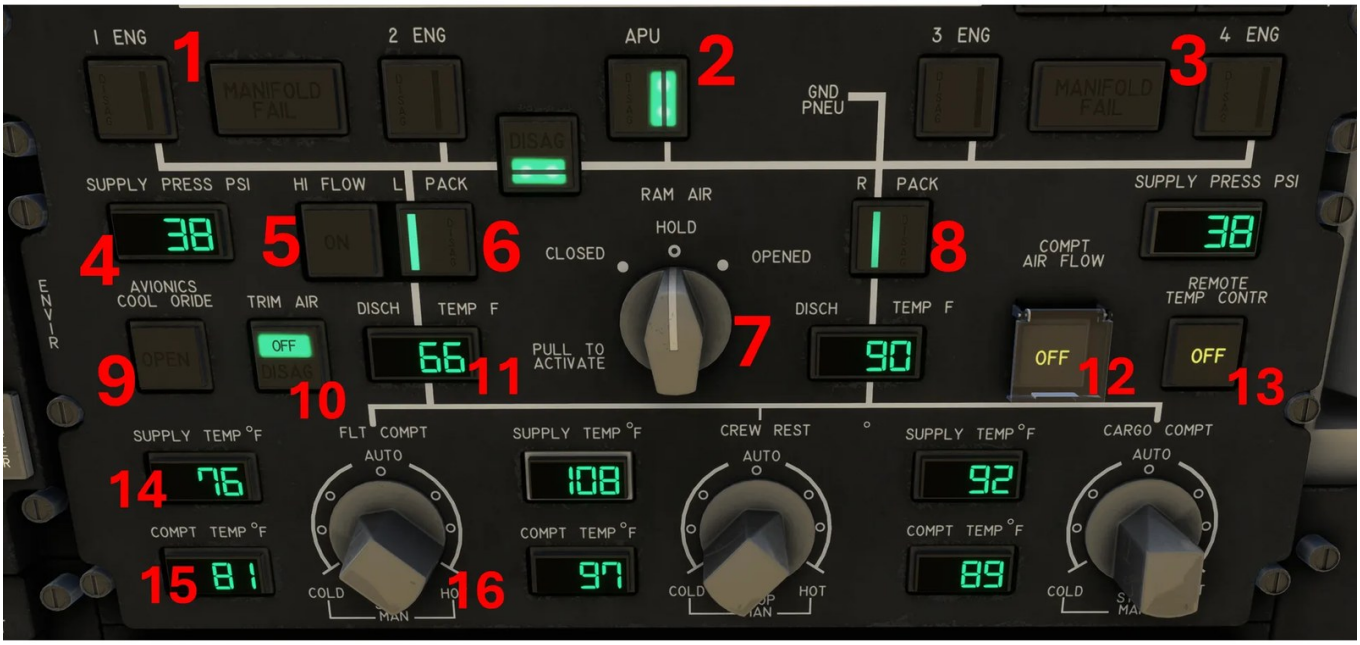
The Environmental/Pneumatic System consists of various sub-systems that all have in common the fact that air is used in one way or another, and that provide pneumatic supply, and environmental or ice protection for the crew and passengers. These subsystems are:

- Bleed Air Supply
- Air Conditioning
- Cargo Compartment Ventilation
- Pressurization

Bleed Air Supply and Air Conditioning

The Bleed Air Supply is the main source of pneumatic supply on the aircraft. Airflow is supplied from the APU or Engines, and enters a crosswing manifold that ducts the air to the engine start, air conditioning, avionics cooling or ice protection.

The system consists of four main engine bleeds, one for each engine, and one APU Bleed. All bleeds are connected by a Bleed XFEED Valve. Two separate and independent air conditioning packs thermoregulate the bleed air and distribute it into three distinct temperature sections - Cockpit, Crew Rest and Cargo.



Bleed Air Supply / Air Con Panel

1. **Engine 1-2 Bleeds:** Provides means of selecting the engine bleed air source for the pneumatic system (ENGs 1/2). Pressing the switchlight opens the engine pressure valve and illuminates the flow line.
2. **APU Bleed:** Provides means of selecting the APU bleed air for pneumatic pressure.
3. **Engine 3-4 Bleeds:** Provides means of selecting the engine bleed air source for the pneumatic system (ENGs 3/4). Pressing the switchlight opens the engine pressure valve and illuminates the flow line.

4. **Supply Press Indicator, PSI:** Digital displays undicate the bleed air pressure available at each wing manifold. Normal operating pressure is 44 +- 4 PSI.
5. **High Flow:** INOP
6. **Left Pack:** Controls the bleed air to the left air conditioning packs.
7. ◉ **Ram Air Knob:** INOP
8. **Right Pack:** Controls the bleed air to the right air conditioning packs.
9. **Avionics Cool Override:** INOP
10. **Trim Air:** INOP
11. **Discharge Temperature Indicator:** Displays the pack discharge temperature
12. **Compartment Air Flow:** INOP
13. **Remote Temperature Controller:** INOP
14. **Supply Temperature:** Provides methods to monitor and control the temperatures on the Flight Compartment, Crew Rest and Cargo Compartment respectively. Supply Temperature is the temperature at the entrance to each compartment.
15. **Compartment Temperature:** Provides methods to monitor and control the temperatures on the Flight Compartment, Crew Rest and Cargo Compartment respectively. Compartment Temperature is the actual temperature of the associated compartment.
16. ◇ **Temperature Selector:** Provides means to select and control the actual temperature of any of the compartments.

Miltech Simulations-Microsoft C-17 Globemaster III

Hydraulic System

> Note
> Hydraulic Pressure in systems 2 and/or 3 is required for ramps to be operated. Hyd system can be pressurized using AC Power and auxiliary electrical pumps.

The C17 has four fully independent, continuously operating hydraulic systems that provide approx. 4000psi of Hydraulic Pressure under normal conditions (3800 Approx. under AUX Electrical Pump) to power all flight control surfaces and hydraulically dependent utility systems.

The Primary Flight Control Surfaces (ailerons, elevators, rudder) and secondary (stabilizer, flaps, slats) are all powered by at least two systems at any one time. They can continue to function at a reduced capacity after the loss of a system.

Each system has a primary, a secondary and an auxiliary pump, and associated reservoirs. The AUX Pumps are electrically driven. No. 4 system has a Ram Air Turbine as well, which is not currently modeled, but may be added in a future update. Systems 2 and 3 also share a XFER pump.

Hydraulic Panel

The Hydraulic panel is located on the overhead panel of the aircraft, right above to the fuel and engine panels.



Hydraulic System Panel

1. **Reservoir Temperature Display,** in degrees Celcius, for the associated system.
2. **Reservoir Quantity Display,** in gallons, for the associated system.
3. **Primary Engine Driven Pump (x4):** Provides on/off control of the associated pump.
4. **Secondary Engine Driven Pump (x4):** Provides on/off control of the associated pump.
5. **Auxiliary Driven Pump (x4):** Provides on/off control of the associated pump. Aux Pumps are electric.

6. **Pressure Display:** Provides hydraulic pressure for the associated system, rounded to the nearest 50 psi. Any pressure less than 100psi is reported as zero. Normal range is 3800 - 4100 PSI
7. **Preflight System Test:** INOP
8. **XFER Pump:** Transfer Hydraulic Press between systems 2 and 3.
9. **↔ RAT Switch:** Ram Air Turbine deploy switch, INOP.

The hydraulic system may be pressurized by the auxiliary pumps using electric power from the APU or Ground Power. The APU or GPU can pressurize all four lines to aprox. 3800 PSI (slightly under their normal pressure of 4000 PSI) by using the AUX Hydraulic Pumps on any of the systems. This means that ramps and doors, as well as control surfaces, can be fully operated on AC Power alone.

Miltech Simulations-Microsoft C-17 Globemaster III

Flight Control System

Cockpit Controls

The aircraft is equipped with two control stick assemblies that are interconnected and move in unison. The stick features various buttons for Autopilot and Microphone switches, however, for ease of operation these buttons are inoperative.

Both sets of rudder pedals are interconnected. The top of the rudder pedals tilt forward to apply brakes.

A flaps lever is located just under the throttle levers. A spoiler deploy/retract rocket switch is located on the sides of the handles of the Throttle levers.

Electronic Flight Control System Panel

In 1993, the C17 Globemaster III became the first military aircraft to feature a complete Electronic Flight Control System, also known as Flight by Wire system. The FBW system utilizes force sensors on pitch, roll and yaw axes to provide pilot commands to four separate Flight Control Computers. These FCCs combine the commands and apply the output commands to the control surfaces (Elevators, Rudder and Ailerons). The fly-by-wire computers act to stabilize the aircraft and adjust the flying characteristics without the pilot's involvement (eg. aircraft holds the attitude), and to prevent the pilot from operating outside of the aircraft's safe performance envelope.

The EFCS System can be disabled by switching the corresponding axis from EFCS to "MECH". This engages the backup Mechanical linkages.



Electronic Flight Control System Panel

1. ◇ **Pitch Trim EFCS Selector:** INOP
2. ◇ **Pitch EFCS Selector:** Three-way switch that determines the behavior of the Electronic Flight Control System (Fly-By-Wire). “EFCS” is the regular mode, and it provides normal operation of the system. MECH (Mechanical, PART or FULL) Disables all EFCS and reverts to the mechanical backup system. The aircraft will no longer hold attitude as expected on a FBW system.
3. ◇ **Flaps EFCS Selector:** INOP
4. ◇ **Roll EFCS Selector:** Three-way switch that determines the behavior of the Electronic Flight Control System (Fly-By-Wire). “EFCS” is the regular mode, and it provides normal operation of the system. MECH (Mechanical, PART or FULL) Disables all EFCS and reverts to the mechanical backup system. The aircraft will no longer hold attitude as expected on a FBW system.
5. **EFCS Reset Pushbutton:** INOP
6. ◇ **Yaw EFCS Selector:** INOP, the Yaw EFCS mode is always engaged by the Flight Model configuration.
7. ↔ **SCEFC Switch:** INOP

8. ↔ **FCC Switch:** INOP

Flaps and Slats

Extension and Retraction of Flaps, Slats and Spoilers are controlled by two FCC Computers. The Flaps slide has Five detent positions. First position is SLATS + FLAPS 0deg. Second position is 0/EXT (Slats Extended, Flaps Zero). Third position is 1/2 Flaps, slats extended. Fourth position is 3/4 Flaps. Final position is full Flaps. Granular Flap Index control is unavailable on this rendition of the C17

The Speedbrake is controlled by a single rocker switch. Only two positions (deployed and retracted) are selectable, however, the aircraft will automatically manage all the individual spoielr surfaces.



Flaps and Slats Indicators

Miltech Simulations-Microsoft C-17 Globemaster III

Landing Gear System

> Caution
> **Remove Landing Gear Pin before starting engines**. Gear Pin can be removed by finding the clickspot on the front gear structure, or main gear assemblies.
> Failure to remove the gear pin will result in the landing gear failing to retract while in flight.

The C17 Globemaster III has a very unique Landing Gear assembly configuration. The aircraft is equipped with a front, steerable gear with two wheels; and a main gear with two struts, three wheels on each strut. All wheels on the main gear assembly have braking mechanisms. The front wheels do not have brakes.



Main Gear Mechanism

A complex and unique set of linkages and rotatory axles fold the gear into the reduced space in which they are retracted. The C17 has a gear design like no other aircraft.

On the real aircraft, Hydraulic Pressure from systems 2 or 3 is required to retract the gear.

Retraction/Extension and Anti-Skid

A gear Retraction and Extension handle is located near the First Officer MFDs, and feature indicator lights displaying the gear status. Additionally, the handle lights up Red when the gear is moving. Gear status is also displayed on the MFD, Config page.

A test button lights up all the status lights to certify them being functional. Anti-skid system and auto Brake Temp monitoring is available to control the aircraft in aggressive braking conditions.

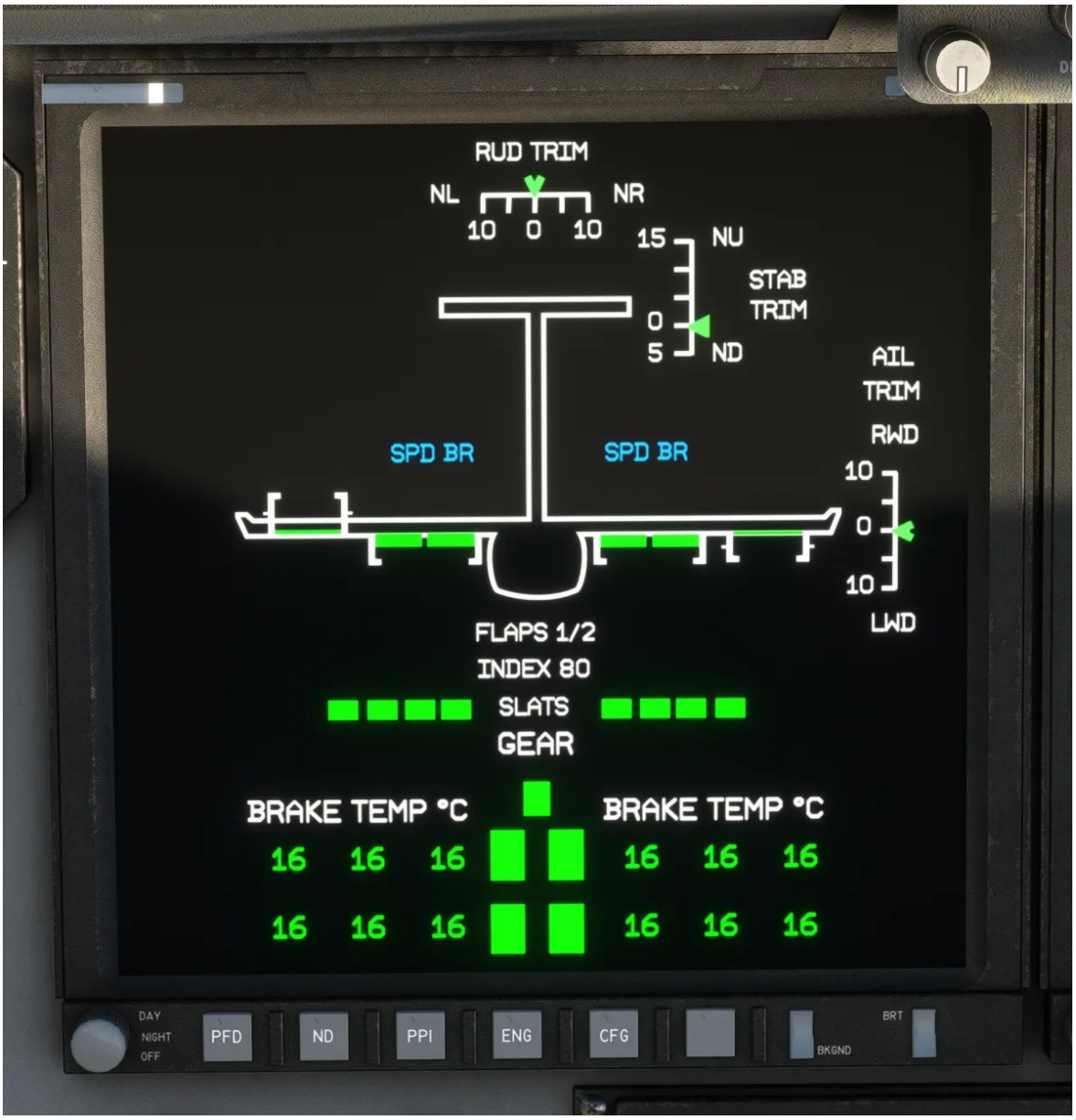


Gear Lever, Anti Skid Switch

Brake System

All 12 wheels on the main gear assembly feature individual braking. The brakes have active monitoring of their temperatures, that can be checked from the cockpit's MFD Config Page.

Autobraking is not available on the C17.



Brake Temperature

A brake pressure gauge accurately represents and monitors Braking Pressure in PSIx1000. This pressure is affected by the supply of Hyd Pressure on Hyd System #3, and decreases/increases slightly with braking action.



Brake Press

Miltech Simulations-Microsoft C-17 Globemaster III

Automatic Flight System

> Note
> VNAV and PACAH Automatic Flight Modes are currently unsupported. Support for these modes may come in a future update.

The Automatic Flight Control System (AFCS) on the real C17 Globemaster is highly complex, and supports various modes for Engine-managed speed control, stationkeeping, and formation flying.

The system has been adapted and simplified, while maintaining the most important modes in regular operations.



Autopilot Panel/MCP

1. ◇ **NAV Source Selector, Pilot:** Selects source of navigation data for the Pilot MFDs, Navigation Display pages. Currently supports
2. VOR/ILS 1 and 2: Available on ND, currently unavailable for LNAV.
3. MSN: Flightplan as active on FMC, available for LNAV.
4. SKE: Stationkeeping, INOP
5. ETAC: INOP
6. TAC: TACAN, currently unavailable for ND and LNAV. Functional on BDHI.
7. **F/D:** Toggle Pilot/Copilot Flight Director On/Off
8. **CAGE:** INOP
9. **APPR:** Toggle APPROACH autopilot mode
10. ↔ **RA/BA:** Switch altitude reference source from Barometric altimeter to Radio Altimeter, on Pilot/Copilot PFD.
11. **DCLT:** Declutter HUD (Pilot/Copilot), cycle through three Decluttered states.
12. **A/D:** Airdrop, currently unavailable.
13. ◇ **CAT1/CAT2 Selector:** INOP
14. **EPR Speed Mode:** Unavailable

15. **SPEED HOLD Mode:** Manages and holds selected MACH/IAS Speed as displayed on #20. Autothrottle must be engaged for this mode to function.
16. **SPDNAV Speed Mode:** Unavailable
17. **HDG HOLD Mode:** Holds selected heading as displayed on #21. Autopilot Master must be engaged for this mode to function. Engaging this mode will deactivate LNAV.
18. **LNAV:** Lateral Navigation. Follows the nav source selected. Currently only MSN is supported - support for VOR and TCN coming soon. Autopilot Master must be engaged for this mode to function. Engaging this mode will deactivate HDG HOLD.
19. ◇ **Ground Spoiler Arm Selector Switch:** 3-Way Switch - ARM (Arms ground spoilers), OFF (Disarm ground spoiler) and LAPES (Disarm Spoilers).
20. ◇ **Approach Path Selector Angle:** Selects Approach Path angle. Regardless of angle selected, the aircraft will always follow the glideslope as provided by airport ILS systems.
21. **APPR Path Display:** Displays selected Approach Path.
22. ↔ **MACH/IAS:** Switches between SPD HOLD in MACH or in IAS. Switches automatically to MACH at 18,000ft.
23. ◇ **MACH/IAS Selector:** Increase or Decrease selected airpeed. Note that rotating the knobs increases/decreases the selected airspeed, but such change will NOT be made effective until the knob is pushed to acknowledge the change.
24. ↔ **THR/PITCH:** Switches between THR and PITCH modes. Currently only THR is supported.
25. **MACH/IAS Display:** Displays selected airspeed.
26. **HDG Display:** Displays selected heading.
27. ◇ **Maximum Bank Selector:** Selects Bank Angle (Standard/Normal/20)
28. ◇ **HDG Selector:** Increase or Decrease selected heading. Note that rotating the knobs increases/decreases the selected heading, but such change will NOT be made effective until the knob is pushed to acknowledge the change.
29. **Pilot ID:** INOP
30. **ATS:** Autothrottle Master Switch. Required for IAS/MACH to function.
31. **Roll Rate:** INOP
32. **AP:** Autopilot Master Switch, required for all Autopilot modes to function. Spring loaded if Autopilot is force-disconnected. This switch also engages Yaw Damper automatically.
33. **ALT HOLD:** Upon selecting, aircraft will climb to/descend to/hold selected altitude as selected on #33. Manages Vertical Speed hold automatically. Requires Autopilot Master to be engaged.
34. **VNAV Mode:** Temporarily unsupported. To be added in a future update due to outstanding bugs.
35. **TURB Mode:** Unsupported.
36. **SPLIT AXIS:** Overrides Altitude Hold, and manages Vertical Speed independently as selected on #32. Requires Autopilot Master to be engaged.
37. ◇ **Vertical Speed selector and Display:** Select and display Vertical Speed.
38. ◇ **Altitude selector and Display:** Select and display Altitude (always BARO). Note that rotating the knobs increases/decreases the selected altitude, but such change will NOT be made effective until the knob is pushed to acknowledge the change.

39. **Alert Reset:** INOP
40. ◇ **NAV Source Selector, First Officer:** Selects source of navigation data for the First Officer MFDs, Navigation Display pages. Refer to #1 for all the modes available.

Understanding the AFCS System

The AFCS system manages the aircraft in three axes: Speed, Altitude/Pitch and Heading/Roll.

Speed Modes:

- Autothrottle Engaged:
- IAS HOLD MODE: Holds selected IAS
- MACH HOLD MODE: Holds selected MACH

Other modes (EPR, SPD NAV, etc.) are not modeled.

Altitude/Pitch Modes:

- Autopilot Master Engaged:
- ALT HOLD: Increases/Decreases/Holds altitude as selected.
- VERT SPD (Split Axis): Overrides ALT HOLD and holds selected VS.
- APPR: Follows Glideslope

Other modes (Turb) are not modeled.

Heading/Roll Modes:

- Autopilot Master Engaged:
- HDG HOLD: Turns to and holds selected heading.
- LNAV: Follows navigation source selected on NAV Source Selector. Currently only MSN is available, but VOR and TAC will be soon supported.
- APPR: Follows localizer.

Other modes (SKE, ETAC, etc.) are not supported.

Autopilot State Displays

Unlike other aircraft, the Autopilot Pushbuttons on the C17 are not backlighted, nor any indicator lights are available on the cockpit. Instead, the engaged modes can be validated on the Primary Flight Display and HUD. Additionally, indicator lights will turn on when Autothrottle or Autopilot are engaged.

Aural alarms, MASTER CAUTION warnings, and WAP Display messages show up when autopilot or autothrottle are disconnected, either manually or by force.



Primary Flight Display showing active modes - IAS, ALT, HDG. Notice AP and ATS lights are active, indicating the system is engaged.

LNAV Tips and Tricks

In some circumstances, users have reported having problems to engage LNAV. Lateral Navigation is fully supported on the C-17 Globemaster III, however, it has a few tricks:

- A complete flight plan, with no discontinuities, must be entered on the MSN (FMS) System. LNAV will not engage unless a plan is entered and executed.
- LNAV system is designed to follow the route as specified on the flightplan. If you fly past the first waypoint on your Flightplan, the aircraft may want to turn and return to that previous waypoint instead of flying to the next waypoint ahead of the aircraft. **If you engage LNAV at any time AFTER your first waypoint on your flightplan,** you may have to do a Direct To - next waypoint on your flightplan through the D-> (Direct To) menu on the MSN System. This ensures the aircraft properly follows a route to your next waypoint.
- Beware VNAV is not currently supported. Takeoff performance calculations are now available, but VNAV still remains pending a future update.

Performing ILS CATII/III Landings

ILS Landings are fully supported on the aircraft, however, they require systems to be correctly setup for the aircraft to follow the automated landing procedure.

1. **Program the approach on the FMS/MSN Systems.** An approach procedure, including selecting the active runway, type of approach and Standard Arrival must be inputted and activated on the aircraft FMS/MSN System. There shall be no flight plan discontinuities from the current position of the aircraft to the destination airport.

2. **Follow the procedure using LNAV:** Autopilot must be engaged, and LNAV mode must be active. The aircraft will follow the standard arrival procedure.
3. **Tune in the ILS Frequency on the NAV1 Radio:** Make sure the frequency is correctly selected on NAV1. When the aircraft has entered the localizer range, distance and bearing to LOC will display on the BDHI Indicator.
4. ◇ **Select VOR/ILS on NAV Source Selector:** On the Pilots side NAV Source Selector, make sure to select VOR/ILS (1 assuming that you have entered the ILS Frequency on NAV1).
5. **Intercept the Approach:** Most airports have ILS intercepts of 30 degrees or less. You may either follow the LNAV through the intercept, or engage APPR mode shortly before the aircraft intercepts the localizer.
6. **Engage APPROACH (APPR) Mode:** Engage APPR Mode and verify the lateral mode automatically switches from LNAV to APPR (verify on PFD bottom left corner). You will see the deviation diamonds on both the horizontal and glideslope bars.
7. **Fly the Glideslope:** The aircraft will automatically intercept the Glideslope, and the ALT Mode (upper right corner) will display GLIDESLOPE once intercepted. Monitor the instruments throughout the approach.

Bear in mind that the aircraft will be unable to fly the ILS if the approach and runway selection is not performed on the MSN system.

Miltech Simulations-Microsoft C-17 Globemaster III

Navigation and Communication Systems

NAVCOM Control Panel

The NAVCOM Control panel are the primary radio controls for all tunable communications and navigation equipment.

- Tunes all the communication radios.
- Tuves the VOR/ILS, TACAN and ADF Navigation Radios.
- Tunes IFF and Transponder
- Activates the IFF IDENT Feature



Navigation and Communications Display

1. **Left Side Pushbuttons:** Cycle through the communication options:
2. COM1/COM2: Selects COMM1/2 Frequencies by using the FREQ knobs. Press once for COMM1, a second time for COMM2.

3. UHF: Unsupported by the simulator.
4. VHF: Unsupported by the simulator.
5. HF: Unsupported by the simulator.
6. **Right Side Pushbuttons:** Cycle through the navigation options:
7. NAV1/NAV2: Selects NAV1/2 Frequencies by using the FREQ Knob. Select Course with the CRS Knob. Press once for NAV1, a second time for NAV2. NAV supports VORs and ILS Frequencies.
8. TAC1/TAC2: Same as above. TACAN frequencies can be used on the BDHI Bearing Distance and Heading Indicator.
9. ADF: Same as above. ADF can be used on the BDHI.
10. IFF: Transponder
11. ▣ **OFF/BRT Button**
12. **Lower Side Pushbuttons:** Their functionality changes from page to page. Particularly important to change IFF mode from GRD to T/A
13. **Upper Side Pushbuttons:** Generally INOP
14. ▣ **IDENT Button**
15. ▣ **XFER Button:** Transfers frequency from STBY to ACTIVE
16. ◉ **CRS Knob:** Selects course. Outer knob selects by 10s, inner knob selects by units.
17. ◉ **FREQ Knob:** Selects frequency. Outer knob selects integer parts, inner knob selects decimal parts.

Standby Radio

The standby radio located in the overhead panel is not simulated and INOP.

ICS/Radio Volume/Mic Select Modules

The various ICS/Radio Volume/Mic Select modules located around the cockpit are fully animated, but do not have any real functionality in the simulation. You may find them across the entire aircraft - in the centre console, on the pilot/copilot sidepanels, in the loadmaster station, etc.



ICS/Radio Volume/Mic Select Modules

Multi-Function Controls Unit

Located on the Centre Console (two of them, for the pilot and first officer respectively), the MFC Unit provides control over the Primary Flight Display and Navigation Displays of the aircraft.



MFC Unit

1. ◇ **Altitude Reference Selector:** Selects the altitude reference to be used with the Central Aural Warnings System (CAWS) and the alert displayed on PFD. Options are:
2. MDA: Minimum Descent Altitude - If the aircraft goes below the selected altitude, MDA message will be displayed on PFD
3. MKR: Marker - If the aircraft goes below the selected altitude, TOO LOW message will be displayed on the PFD.
4. DH: Decision Height - When the aircraft crosses Decision Height, DH Message displays on the PFD, followed by the respective aural alarm.
5. **Altitude Selected Display:** Displays selected altitude as per ALT REF Mode (1) and MIN SELECT (3)
6. ◇ **Minimum Altitude Selector Knobs:** The outer knob selects the reference source for generation of PFD Altitude Alerts (BARO for Barometric, and RA for radar altitude). The inner knob selects the altitude on the display window.
7. ▣ **MFC Buttons:** Enable/Disable various of the MFCs Functions:

8. CDI: Course Deviation Indicator
9. 1CRS: INOP
10. 2CRS: INOP
11. PFP: INOP
12. TAC CRS: INOP
13. FLT PLN: Display MSN Flight Plan
14. PPI PLN: INOP
15. DATA: INOP
16. NVAD: Display Navigation Aids on Navigation Display - VORs, NDBs and TACANs
17. ARPT: Display Airports on Navigation Display
18. GRP: INOP
19. TACT: INOP
20. SEC PLN: Secondary Plan, INOP
21. DCLT: INOP
22. RDR: Cycle through Radar Modes - OFF/Terrain Radar (TAWS)/Weather Radar (WX)
23. BCN: INOP
24. RZ TAC: INOP
25. ◇ **Aircraft Reference Symbol Position Selector, move Backward:** Enables the aircraft reference symbol to be moved Backward. This will affect both MFDs on the corresponding MFC Side.
26. **Display Test Mode:** Pressing the TEST Pushbutton enables a HUD and MFD Test Format.
27. ◇ **Aircraft Reference Symbol Position Selector, move Forward:** Enables the aircraft reference symbol to be moved Forward. This will affect both MFDs on the corresponding MFC Side.
28. **SKE/TCAS Ring Interval:** INOP
29. ◇ **Heading Reference Selector Switch:** INOP. All headings on the aircraft are set to Magnetic
30. ◇ **Map/Radar Range Selectors:** Increases/Decreases range for the MAP, ND Compass and PPI

Bearing, Heading, Direction Indicator (BDHI)

The BDHIs. located outboard of the outside MFDs at each pilot station, provide magnetic heading, and magnetic bearing and/or digital readouts of distance to VOR, DMEs or TACANs, and relative bearing to radio stations supplied to ADF.



BDHI Imdicator

Note
TACAN Stations may display correct distance to station but incorrect bearing. We are investigating the issue. VORTAC Stations will function correctly with DIST and BEA.

1. ◇ **Mode 1 Selector:** Select between VOR1, TACAN1 and ADF1. The instrument will use the frequencies as selected on the COMNAV display. Assuming the frequency is valid, and aircraft is within range of the radio station, the bearing to the station will display on Needle #4 and the distance on #6.
2. ◇ **Mode 2 Selector:** Select between VOR2, TACAN2 and ADF2. The instrument will use the frequencies as selected on the COMNAV display. Assuming the frequency is valid, and aircraft is within range of the radio station, the bearing to the station will display on Needle #5 and the distance on #7.
3. **Magnetic Heading Indicator:** The rotating plate will function as a backup compass, displaying the current magnetic heading of the aircraft.
4. **FREQ1 Bearing Indicator:** Displays the bearing to the station as selected on Mode 1 Selector. Eg. assuming Mode 1 selector is set to VOR1, and a valid VOR Frequency has been entered on the COMNAV display, the needle will point towards the bearing of the selected VOR station.
5. **FREQ2 Bearing Indicator:** Displays the bearing to the station as selected on Mode 2 Selector. Eg. assuming Mode 2 selector is set to ADF1, and a valid ADF Frequency has been entered on the COMNAV display, the needle will point towards the bearing of the selected ADF station.
6. **FREQ1 Distance Indicator:** Displays the distance, in Nautical Miles, to the station as selected on Mode 1 Selector, assuming the station can provide distance information.
7. **FREQ2 Distance Indicator:** Displays the distance, in Nautical Miles, to the station as selected on Mode 2 Selector, assuming the station can provide distance information.

Miltech Simulations-Microsoft C-17 Globemaster III

Mission/Flight Planning System

Caution
Please note that starting on Version Number V1.1.9, aggressive performance optimizations have been made, including limiting pages on PFD and MFDs, and mirroring both copilot's FMCs. More information here: NOTAMs

Note
Please note that the publicly known performance figures for the C17 Globemaster are limited since the aircraft is in active military service. This system may not match perfectly the displays found in the real aircraft.
Takeoff performance on the MSN system is now available. The calculations are sim-derived and may not match real-world military data exactly.

The MSN (Mission) System, also known as Mission Computer Display/Keyboard system.

This system enables aircrew or operators to input and manage critical mission parameters, providing an interface for real-time updates and control over navigation and operational tasks. The system mainly functions as Flight Plan Input and Modification device, from where the crew can input the flight route, waypoints, target locations, and other critical navigation data, as well as modify them in real-time based on mission needs. Other functions on the real counterpart include stationkeeping and aircraft performance calculations.

The C17 features a unique setup, consisting of four displays and two keyboards - two displays and one keyboard located on the Captain side, and two displays+keyboard on the first officer side. This setup provides the crew more flexibility and efficiency when performing actions while in flight.



MSN/Mission Computer Display System

1. **Forward Mission Computer Display,** with 12 softkey pushbuttons, 6 on each side.
2. **Aft Mission Computer Display,** with 12 softkey pushbuttons, 6 on each side.
3. ◉ **Brightness Knob** (x2)
4. ▣ **STS Button:** INOP
5. ▣ **Messages Button (MSG):** Display Messages Page. Each screen has an individual MSG Button, and as such it allows for control of each display individually.
6. **Mission Computer Keyboard, row 1:** Each screen has an individual copy of these buttons, which allows for control of each display individually. From left to right:
7. Communications (COMM): Displays the Frequency Search/Communications Page
8. Mission (MSN): The Mission Page (also known as Route Legs) will display all the waypoints, navaids, and fixes comprising the flightplan. This page is used to evaluate and modify the planned route of flight during the climb and to add or delete waypoint.
9. Stationkeeping (SKE): INOP

10. Arrow Up: Moves up through the list/page
11. Arrow Down: Moves down through the list/page
12. Index (IDX): Displays index menu linking to all the different pages.
13. **Mission Computer Keyboard, row 2:** From left to right:
14. Forward/Aft (FWD AFT): Switches active display between Forward/Aft
15. Direct To (D->): Displays the Direct To / Nearest Airports Page. Direct To menu can also be used to tell the aircraft to fly directly to the next waypoint on the flight plan when engaging LNAV, in the case the aircraft has flown past the first waypoint.
16. Progress (PROG): Displays the Progress Page
17. Flight Plan (FLT PLN): Displays the Active Flightplan Page
18. Performance (PRFM): Used to calculate Takeoff and Landing performance, V-Speeds, among others.
19. Execute (EXEC): Execute Button
20. **Mission Computer Keyboard, row 3:**
21. Empty Button
22. Empty Button
23. Departure/Arrivals (DEP ARR): Display Departure/Arrivals Page
24. Secondary Flight Plan (SEC PLN): INOP
25. Takeoff and Landing Distance (TOLD): INOP
26. Position Fix (POX FIX): Display Fix Information/Create Reference Points to display on ND
27. **Mission Computer Keyboard:** The keyboard will type on the active display only. To switch active displays, press the FWD AFT button.

Mission Computer Display Design Logic



Mission Computer Display Design

The system’s design logic uses pages with options either highlighted in green or unhighlighted. Green-highlighted options indicate features that are not simulated or unavailable, while unhighlighted options are clickable and interactive. This closely resembles the real counterpart.

Creating a new Flight Plan

1. Aircraft must have a source of power (Battery, APU, Generators or Ground Power) switched on.
2. Turn on the MSN Displays by using the rotary switch in the upper right corner.
3. Verify which screen is active. This can be easily done by typing with the keyboard - the active display text on the latest row. You may switch active displays by pressing FWD AFT.
4. Press FLT PLN. Insert departure and arrival airports.
5. Press DEP ARR. Insert the departure runways and SIDs, as well as arrival runway, approach and STARS. Press Execute to validate the departure/arrival procedures.
6. Press MSN to review flightplan. Delete any discontinuities or add any route waypoints. Press Execute to validate the flightplan.
7. The aircraft will follow the flight plan by selecting LNAV Mode on the Autopilot panel.

Configuring Takeoff Performance

Set takeoff performance after the route, runway, payload, and fuel are finalized.

1. Make sure your flight plan has correctly-configured takeoff and departure procedures (eg. SIDs), and most importantly, you have selected the takeoff runway on the DEP ARR Page.
2. Press **PRFM** on the MSN keyboard.
3. Enter the requested information: OAT, Takeoff Weight, Cruise Alt, Flap Config, etc.
4. Press "SEND" to fill the chevrons on the speed tape.
5. Confirm the V-Speed bugs appear on the FMC, as well as the PFD speed tape for takeoff.

The PRFM page is used for takeoff performance setup only. The **TOLD** key remains unavailable.

Simbrief Integration

This aircraft can load flightplans, over-the-cloud, directly from Simbrief. More information here: Simbrief Integration

Miltech Simulations-Microsoft C-17 Globemaster III

Simbrief Integration

- On the FMC, press **IDX** to open the **INDEX** page → navigate to **PAGE 2**.
- Select **MOD SET**.
- Enter your **SimBrief Pilot ID** (5-6 digits) in the scratchpad.
- Press button next to the **SIMBRIEF PILOT ID** field.
- If accepted, it will be displayed on the screen and stored permanently (you won’t need to re-enter it).
- Press **IDX** again → go to **PAGE 1**.
- Open the **ROUTE MENU**.
- You’ll see **FPLN RECALL (SB)**.
- Select **FPLN RECALL (SB)** to import your SimBrief flight plan.
- The system will prompt you to press **EXEC** to finalize the import.

Miltech Simulations-Microsoft C-17 Globemaster III

Deicing/Anti-Icing System

Deicing, Anti-Icing and Misc Panel



Deicing, Anti-Icing and Misc Panel

1. ↔ **Bailout Alarm Switch:** Upon switching on, the Bailout alarm sounds.
2. ↔ **Emergency Lighting Switch:** Three way switch OFF/ARM/ON. Off turns off all associated emergency lighting, incuding the EXIT signs. ARM sets the state of emergency lighting to the ARMED mode. On illuminates all components of the system.
3. ↔ **Stall Test Switch:** Three-way spring-loaded switch to test the stall prevention system. Center mode is OFF, 1MOM and 2MOM can be selected to test the corresponding stall alarms, displayed messages and stick shaker.
4. **Left Windshield Anti-Ice:** Provides controls for the windshield anti-icing system. OFF De-energizes the system, NORM energizes the system at a moderate temperature, HIGH energizes at a higher temperature.

5. ↔ **Windshield Defog Switch:** Provides control of Windshield Defog system. System is normally on for the flight. When selected off, the amber OFF lights illuminates.
6. ↔ **Wing Anti-Icing Switch:** Provides control for opening and closing the shutoff valves to both wings. Normally off for flight operations. When pressed on, the switch lights up green.
7. **Right Windshield Anti-Ice:** Provides controls for the windshield anti-icing system. OFF De-energizes the system, NORM energizes the system at a moderate temperature, HIGH energizes at a higher temperature.
8. ↔ **Engine Deicing Switches:** Provides control for opening and closing the associated engine cowl anti-icing valve. The switch lights up green to signify the system has been commended on.
9. ↔ **Probe Heat Switches:** Provides heat control for pitot-static probes, for the Pilot (P) and Copilot (CP). The system is normally on for the flight. When selected off, the amber OFF lights illuminates.

Miltech Simulations-Microsoft C-17 Globemaster III

Lighting Systems



Lighting Panel, Overhead

1. **Dome Lights**
2. **EPC Flood**
3. **Flow Line Power:** INOP
4. **W/S Wiper, Captain:** Three Positions - OFF, SLOW and FAST
5. **Overhead Panel Flow Line/Panel:** The small knob controls the lighting flow lines on the overhead panel. The large knob controls the brightness of the backlit panel text.
6. **Overhead Panel Digit/Flood:** The small knob controls the brightness on all the small LCD displays in the overhead panel. The large knob controls the flood lighting illuminating the overhead completely.
7. **Navigation/Storm Lights:** Controls the Green NVG Lighting, as well as the thunderstorm dome lights.
8. **Left Wing Landing Lights:** Controls the extensible landing lights located on the left wing. These lights are generally in the FOLDED position. Use the Landing Lights Position switches (#11) to move the lights into the extended position for operations.
9. **Nose Landing Lights:** Controls the two extensible landing lights located on both sides of the fuselage, as well as the Runway Turnoff lights. Three way switch - LAND, TAXI, OFF. The LAND position sets maximum brightness to the extensible landing lights, and turns the Runway Turnoffs off. The TAXI position makes use of the Runway Turnoff lights, while setting the Landing Lights to medium intensity. OFF de-energizes the entire system. These lights are generally in the FOLDED position. Use the Landing Lights Position switches (#11) to move the lights into the extended position for operations.
10. **Right Wing Landing Lights:** Controls the extensible landing lights located on the right wing. These lights are generally in the FOLDED position. Use the Landing Lights Position switches (#11) to move the lights into the extended position for operations.
11. **↔ Landing Light Position Switch:** This switch controls the position of foldable landing lights. All three are 3-way switches EXTEND-HOLD-RETRACT. The Extend position will fully move the corresponding extendable light to the fully deployed position. The HOLD position will hold the position and de-energize the folding mechanism. The RETRACT position will return the lights to fully retracted. Keep in mind that extension and retraction of lights works completely independently from the light circuits themselves, and as such configuring lights for landing is a two-step process: First extending lights, and then turning them on. Finally, we'd like to remind that lights shall be retracted for cruise flight, and only extended under 250 KIAS.
12. **Navigation Lights:** Modeled as an ON/OFF Switch
13. **Anti Collision Lights:** Four-position switch - OFF, Lower Beacon, Both Beacons, Beacon + Strobe

14. **W/S Wiper, First Officer:** Three Positions - OFF, SLOW and FAST
15. **Standby Comp:** INOP
16. **Formation Lights, Side and Trail:** Controls the formation lights brightness.
17. **Air Refueling Lights:** Controls the slip way and lead in lighting.
18. **Nacelle Scan Lights:** Illuminates the Engine Nacelles and Front Leading Flap for inspection.

Various other lighting panels are scattered around the aircraft - located in the centre console, glareshield, loadmaster bay, etc. These control "local lights" (eg. Cargo Bay lights from the Loadmaster Panel), as well as smaller panels that feature backlighting. For practical reasons, we decided not to pitcure all of them on the manual, but the decal titles are self-explanatory and these are all tooltipped as well.



TOP LEFT: Under Autopilot Module, TOP RIGHT: Next to the HUD, BOTTOM: Centre Console

Miltech Simulations-Microsoft C-17 Globemaster III

Cockpit Displays

- Primary Flight Display
- Navigation Display
- Plan Position Indicator
- Engine Display
- Configuration Display
- Head-Up Display
- Warnings and Annunciators Panel

Miltech Simulations-Microsoft C-17 Globemaster III

Primary Flight Display

Caution
Please note that starting on Version Number V1.1.15, aggressive performance optimizations have been made, including limiting pages on PFD and MFDs, and mirroring both copilot's FMCs. More information here: NOTAMs



Primary Flight Display

1. **Airspeed Autopilot Mode:** Displays the selected Autopilot Airspeed mode (ATHR ACT, IAS, MACH, etc). The white box displays when Autothrottle is engaged. The active mode will display in the upper box.
2. **Vertical Autopilot Mode:** Displays the selected Autopilot Vertical mode (ALT, VV, etc.). The white box displays when Autopilot is engaged. The active mode will display in the upper box.
3. **Lateral Autopilot Mode:** Displays the selected Autopilot Lateral mode (HDG, ROLL, LNAV, etc.). The white box displays when Autopilot is engaged. The active mode will display in the upper box.

4. **Airspeed Tape:** Displays the indicated Airspeed in Knots. Contrary to most commercial aircraft, the airspeed tape increases moving downwards.
5. **Selected Airspeed:** Displays the selected airspeed in Knots or MACH, as selected on the Autopilot panel.
6. **Heading Indicator/Selected Heading Bug:** Displays the current heading, as well as the selected heading as on the autopilot panel.
7. **Vertical Speed/Radio Altimeter/Decision Height Indicators:** Displays the current vertical speed. Decision Height is displayed as well in blue, as selected in the MCP Panel. Radio Altimeter is displayed, unless BA/RA Mode is switched, in which case Baro altimeter will be displayed.
8. **Altitude Tape:** Displays the current Baro Altitude. If BA/RA is engaged, the tape will display Radio Altitude.
9. **Selected Altitude:** Displays the current Altitude selected as per the autopilot panel. Always in Baro Altitude.
10. **Roll Indicator:** Displays the current aircraft roll attitude, as well as the roll limitations for the current speed/altitude.
11. **ADI:** Displays the current Attitude of the aircraft with reference to the horizon.
12. **Flight Path Vector indicator/Flight Director/Attitude Reference:** Displays the aircraft attitude and direction of travel.
13. ◇ **Screen Brightness Selector:** Cycles through display OFF/Night (Low Brightness Mode) and Day (High Brightness Mode).
14. ◇ **Multi-Function Display Selector:** Cycles through the different pages available on the MFD.
15. **Localizer/Glideslope/Flight Path indicators:** Display the aircraft position in refernece to the glideslope, localizer, selected navaid or flightplan entered.

V-Speed Bugs



V-Speed Bugs displayed on Cyan on the Speed Tape

V-Speeds provide visual airspeed references for takeoff and flight. They are automatically computed by the aircraft computers from the takeoff performance setup on the MSN PRFM page. These display as cyan ticks on the airspeed tape on PFD.

- Vgo (G): Takeoff decision speed when TOGA Mode is selected.
- Vrot (R): Rotation speed when TOGA Mode is selected.
- Vmco (C): Minimum climbout speed when TOGA Mode is selected.
- Vmma (M): Minimum Maneuvering Speed.
- Vapp (A): Approach Speed.
- Vmfr (F): Minimum flap retract speed when TOGA Mode is selected.
- Vmsr (S): Minimum slat retract speed when TOGA Mode is selected.

Miltech Simulations-Microsoft C-17 Globemaster III

Navigation Display

Caution
Please note that starting on Version Number V1.1.15, aggressive performance optimizations have been made, including limiting pages on PFD and MFDs, and mirroring both copilot's FMCs. More information here: NOTAMs



Navigation Display, Compass Format

1. **Heading Indicator**
2. **Aircraft Position Indicator**
3. **Selected Range Indicator:** Displays range as selected on the MCP Range Knob
4. **Wind Direction Information**
5. **Selected NAVAID Information**

6. **Selected Heading Bug**
7. ◇ **Screen Brightness Selector:** Cycles through display OFF/Night (Low Brightness Mode) and Day (High Brightness Mode).
8. ◇ **Multi-Function Display Selector:** Cycles through the different pages available on the MFD. First click on ND button will set MFD to the ND Compass page. A second click will set to Map Page format.



Navigation Display, Map Format

1. **Heading Indicator**
2. **TAWS/WX/TCAS Mode Indicator:** TAWS/WX Can be Enabled/Disabled on the MCP, RDR Button. TCAS is by default disabled on ND, and always enabled on PPI
3. **Aircraft Position Indicator:** Position indicator can be moved up/down using the two arrow buttons on the MCP.
4. **Selected Range Indicator:** Displays range as selected on the MCP Range Knob
5. **Map Display:** Displays WX or Terrain information, airport positions, NAVAIDs, etc. as selected on the aircraft MCP.

6. **Wind Direction Information**
7. **Selected NAVAID Information**
8. ◇ **Screen Brightness Selector:** Cycles through display OFF/Night (Low Brightness Mode) and Day (High Brightness Mode).
9. ◇ **Multi-Function Display Selector:** Cycles through the different pages available on the MFD. First click on ND button will set MFD to the ND Compass page. A second click will set to Map Page format.

Miltech Simulations-Microsoft C-17 Globemaster III

Plan Position Indicator

Caution
Please note that starting on Version Number V1.1.15, aggressive performance optimizations have been made, including limiting pages on PFD and MFDs, and mirroring both copilot's FMCs. More information here: NOTAMs



PPI Page

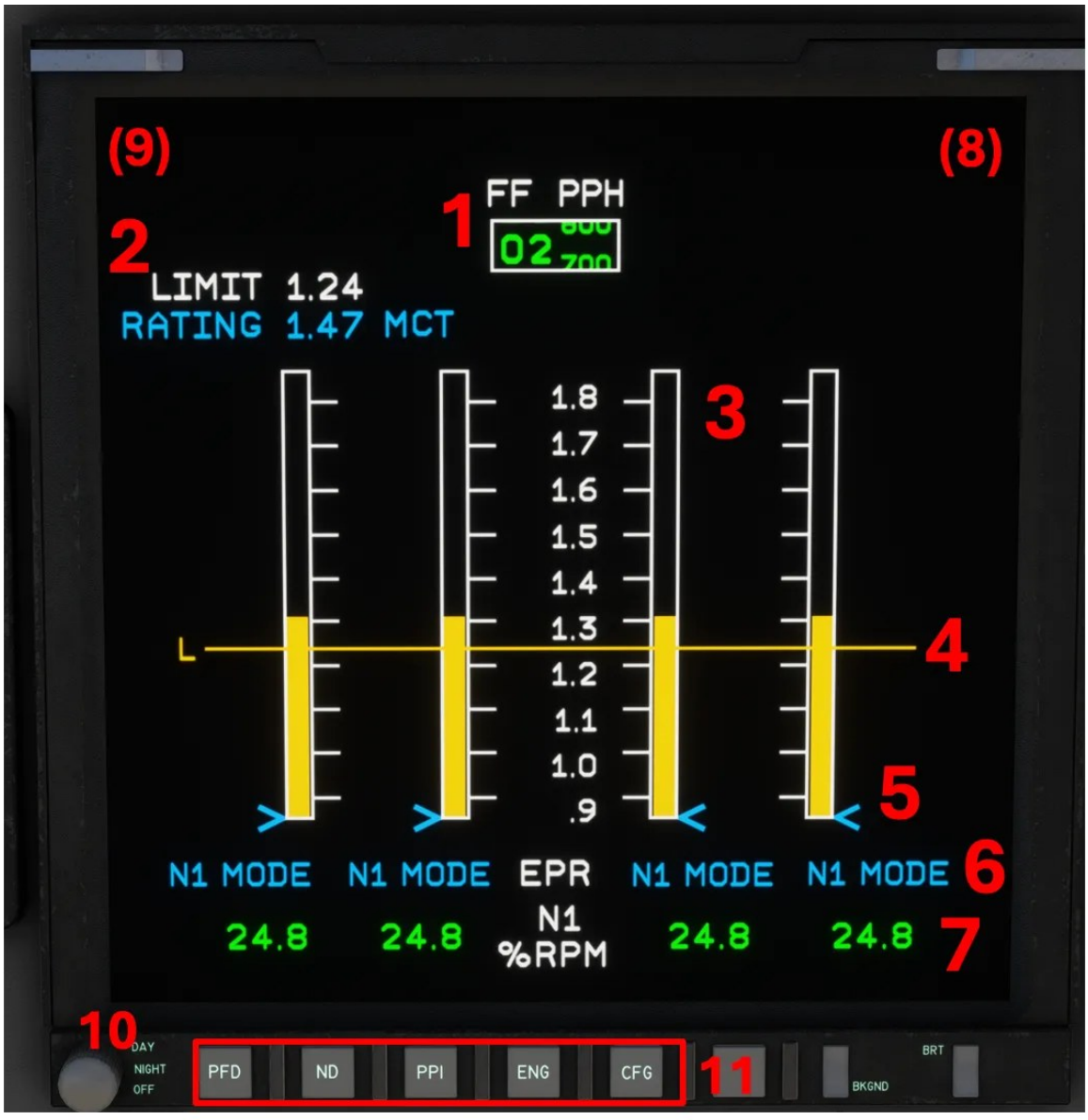
1. **Heading indicator**
2. **TAWS/WX/TCAS Indicator:** TAWS is controlled by the RDR button on the MCP. TCAS is by default always TA/RA
3. **Aircraft Position Indicator:** The position of traffic will be displayed in reference to the position of the Aircraft Indicator

4. **Range Lever:** As per selected on the MCP
5. **Navigation/Waypoint Information**
6. ◇ **Screen Brightness Selector:** Cycles through display OFF/Night (Low Brightness Mode) and Day (High Brightness Mode).
7. ◇ **Multi-Function Display Selector:** Cycles through the different pages available on the MFD.

Miltech Simulations-Microsoft C-17 Globemaster III

Engine Display

Caution
Please note that starting on Version Number V1.1.15, aggressive performance optimizations have been made, including limiting pages on PFD and MFDs, and mirroring both copilot's FMCs. More information here: NOTAMs



Engine Display, EPR Page

1. **Fuel Flow:** in Pounds per Hour
2. **Thrust Rating and Limit Display:** Reflects the selected EPR Rating as selected on the Standby Engine instrument panel (MAX, INT, MCT, DRT, MAN). Displays the respective Limit and Rating values.
3. **EPR Vertical Tapes:** Displays green when the engine EPR is within the limits. Displays yellow when EPR exceeds the EPR Limit

4. **EPR Limit/Rating Line:** Displays the engine max EPR Rating (Yellow). Displays the selected EPR Rating (Cyan),
5. **EPR Predictor:** Cyan chevron commanded by the throttle levers and corresponds to the set throttle lever angle.
6. **EPR Engine Mode annunciator:** Displays engine operating mode (N1 or N2)
7. **N1 RPM Digital Display:** When engine is operating in N1 mode, displays the N1 RPM for each engine.
8. **(Not Pictured) Brake Temperature Indicator**
9. **(Not Pictured) MAX Thrust Time, Reverser Status**
10. ◇ **Screen Brightness Selector:** Cycles through display OFF/Night (Low Brightness Mode) and Day (High Brightness Mode).
11. ◇ **Multi-Function Display Selector:** Cycles through the different pages available on the MFD. First click on ENG will open the EPR Page, second click the extended Engine page and third the Engine Oil page.



Engine Display, Extended Page

1. **Thrust Rating and Limit Display:** Reflects the selected EPR Rating as selected on the Standby Engine instrument panel (MAX, INT, MCT, DRT, MAN). Displays the respective Limit and Rating values.
2. **N1 RPM Indicator:** Arc displays the N1 RPM% For all four engines. Generally green, turns yellow when N1 is below the low limit, and red when its above the high limit.
3. **N2 Indicator:** The arc displays the N2 RPM% for all four engines. Generally green, turns yellow when N2 is below the low limit, and red when its above the high limit.
4. **EGT:** Displays the exhaust gas temperature, in degrees Celsius, in the linear arc.
5. **FF PPH:** Displays the fuel flow, in pounds per hour, to each individual engine.
6. **(Not Pictured) MAX Thrust Time, Reverser Status**
7. ◇ **Screen Brightness Selector:** Cycles through display OFF/Night (Low Brightness Mode) and Day (High Brightness Mode).
8. ◇ **Multi-Function Display Selector:** Cycles through the different pages available on the MFD. First click on ENG will open the EPR Page, second click the extended Engine page and third the Engine Oil page.



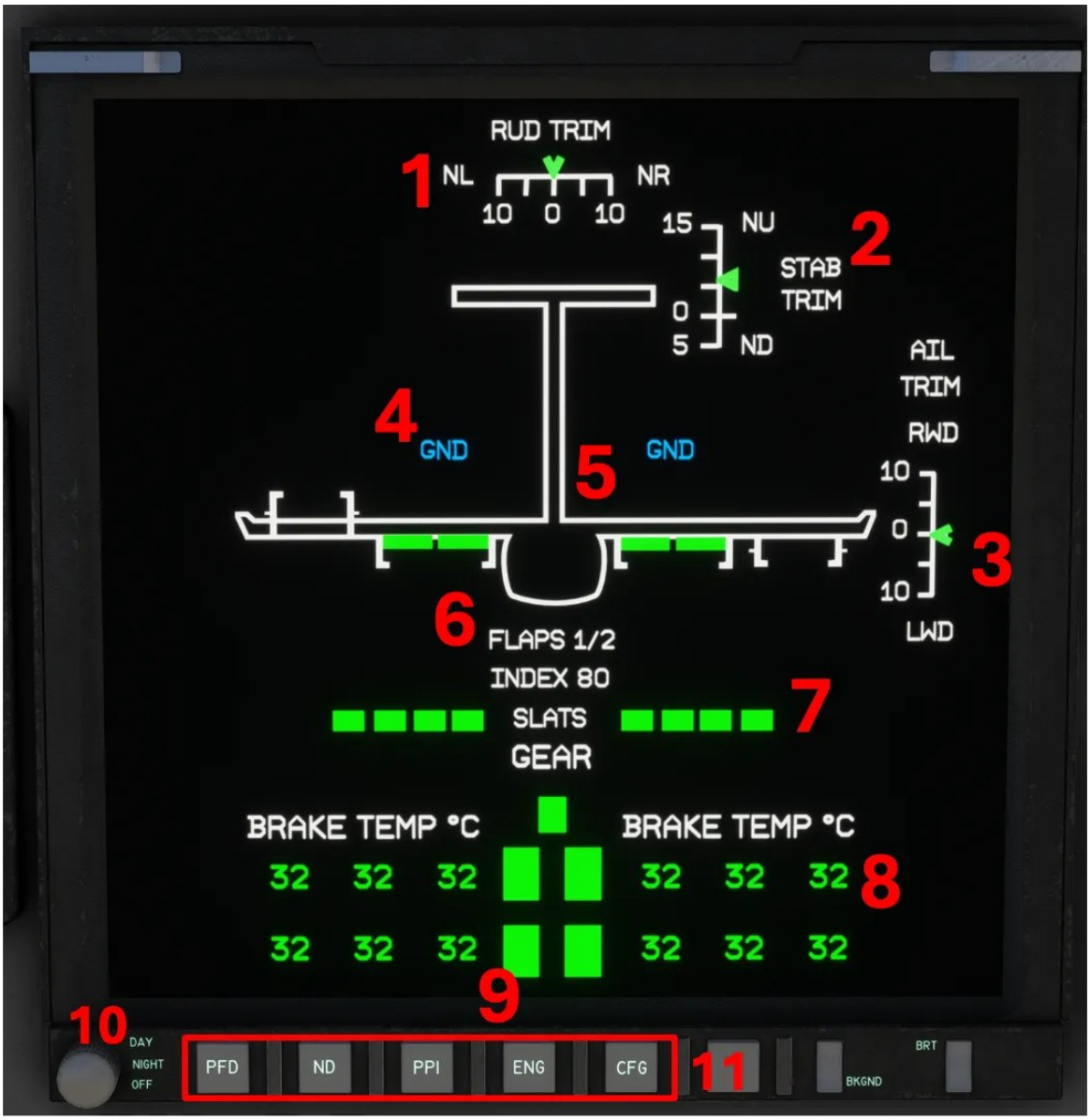
Engine Display, Engine Oil Page

1. **Engine Oil Pressure:** Displays engine oil pressure, in PSI
2. **Engine Oil Temperature:** in degrees Celsius
3. Engine Oil Quantity: In Quarts
4. **Fuel Used:** Shows the total fuel used per engine since the latest reset.
5. ◇ **Screen Brightness Selector:** Cycles through display OFF/Night (Low Brightness Mode) and Day (High Brightness Mode).
6. ◇ **Multi-Function Display Selector:** Cycles through the different pages available on the MFD. First click on ENG will open the EPR Page, second click the extended Engine page and third the Engine Oil page.

Miltech Simulations-Microsoft C-17 Globemaster III

Configuration Display

Caution
Please note that starting on Version Number V1.1.15, aggressive performance optimizations have been made, including limiting pages on PFD and MFDs, and mirroring both copilot's FMCs. More information here: NOTAMs



Configuration Display

1. **Rudder Trim Indicator**
2. **Stabilizer Trim Indicator**
3. **Aileron Trim Indicator**
4. **Spoiler Mode Indicator:** DLC Appears when spoilers are being used in the lift control mode during approach (Spoilers deployed and Flaps >1/2). SPD BR appears when spoilers are used in speed brake

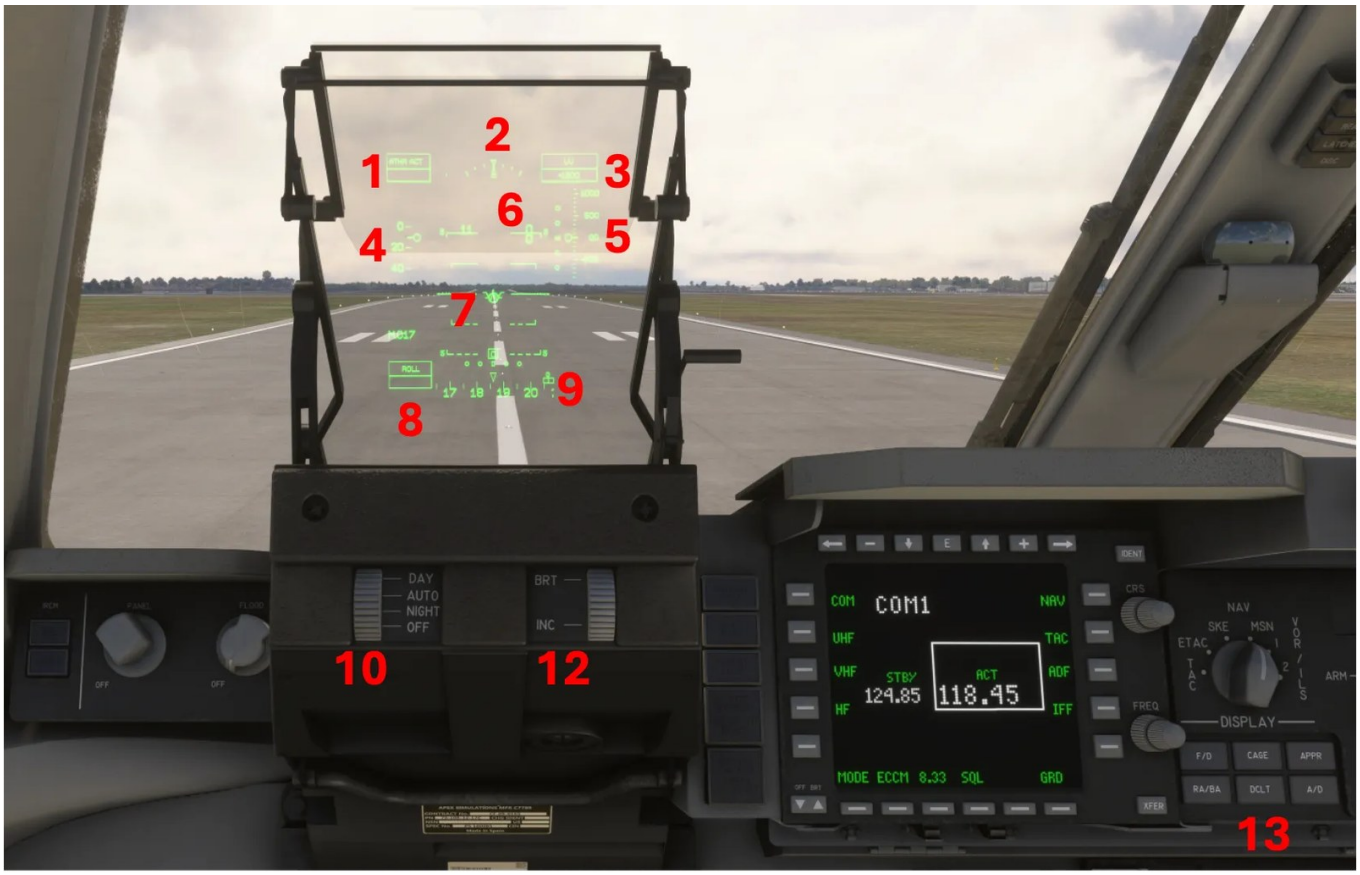
mode (Spoilers deployed and Flaps <1/2). GND Appears when spoilers are used on the ground for full stop landings or touch and gos.

5. **Aircraft Control Panel:** Displays the position and deflection of all control surfaces against the aircraft outline.
6. **Flap Status Indicators:** Display flap readouts according to the flaps lever: UP, ½, ¾ and FULL
7. **Slat Status Indicator:** Indicates if Slats are extended or retracted.
8. **Brake Temperature Indicator:** in degrees Celsius
9. **Landing Gear Status Indicator**
10. ◇ **Screen Brightness Selector:** Cycles through display OFF/Night (Low Brightness Mode) and Day (High Brightness Mode).
11. ◇ **Multi-Function Display Selector:** Cycles through the different pages available on the MFD. First click on ENG will open the EPR Page, second click the extended Engine page and third the Engine Oil page.

Miltech Simulations-Microsoft C-17 Globemaster III

Head-Up Display

Caution
Please note that starting on Version Number V1.1.15, aggressive performance optimizations have been made, including limiting pages on PFD and MFDs, and mirroring both copilot's FMCs. More information here: NOTAMs



Head-Up Display

1. **Airspeed Autopilot Mode:** Displays the selected Autopilot Airspeed mode (ATHR ACT, IAS, MACH, etc). The white box displays when Autothrottle is engaged. The active mode will display in the upper box.
2. **Roll Indicator:** Displays the current aircraft roll attitude, as well as the roll limitations for the current speed/altitude.
3. **Vertical Autopilot Mode:** Displays the selected Autopilot Vertical mode (ALT, VV, etc.). The white box displays when Autopilot is engaged. The active mode will display in the upper box.
4. **Airspeed Tape:** Displays the indicated Airspeed in Knots. Contrary to most commercial aircraft, the airspeed tape increases moving downwards.
5. **Altitude Tape:** Displays the current Baro Altitude. If BA/RA is engaged, the tape will display Radio Altitude.
6. **Altitude/Vertical Speed Indicator**
7. **Flight Path Vector indicator/Attitude Reference:** Displays the aircraft attitude and direction of travel.

8. **Lateral Autopilot Mode:** Displays the selected Autopilot Lateral mode (HDG, ROLL, LNAV, etc.). The white box displays when Autopilot is engaged. The active mode will display in the upper box.
9. **Heading Indicator/Selected Heading Bug:** Displays the current heading, as well as the selected heading as on the autopilot panel.
10. ↔ **HUD Brightness Mode Switch:** OFF/NIGHT/AUTO/DAY
11. ◇ **HUD Manual Brightness Selector**
12. **HUD Declutter Pushbutton:** Cycles through the declutter states, removing redundant information for ease of visibility during sorties.

Miltech Simulations-Microsoft C-17 Globemaster III

Warnings and Annunciators Panel



Warnings and Annunciators Panel

1. **Left Side Caution Messages**
2. **Right Side Caution Messages**
3. **Annunciation Messages**
4. **Warning Messages**
5. ▣ **Left Scroll Buttons**
6. ▣ **Brightness Increase/Decrease Button:** Cycle through display brightness levels
7. ↔ **Annunciations/Lights Test Switch:** INOP
8. ▣ **Right Scroll Buttons**

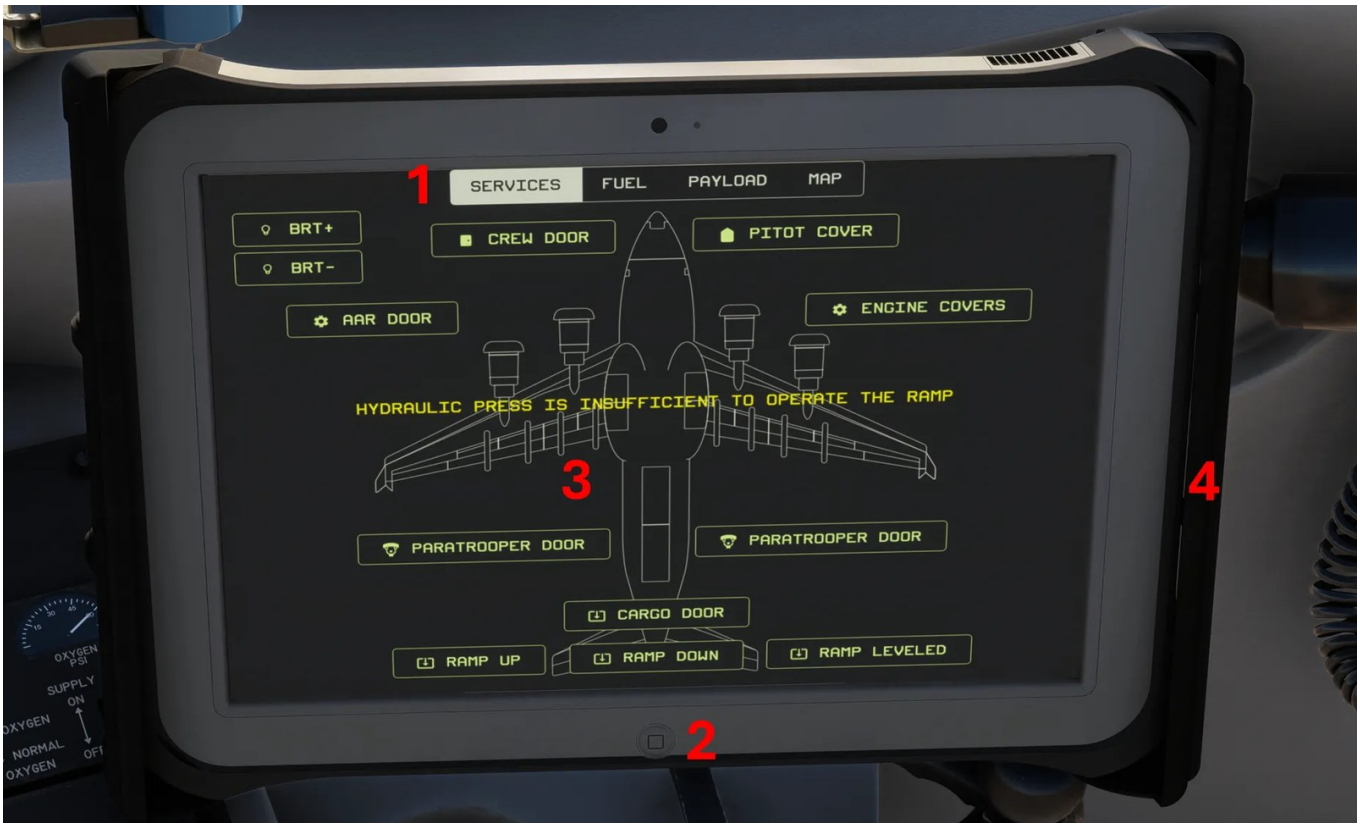
Miltech Simulations-Microsoft C-17 Globemaster III

Electronic Flight Bag

Caution
EFB Must be operated with a mouse. This tablet is currently incompatible with GamePads.

Note
Selecting a predefined cargo load through the PAYLOAD menu automatically assigns the corresponding weights to all six cargo stations and updates the aircraft's center of gravity. No further input is required. Manually changing these values or entering a different load weight may conflict with the tablet selection. There is no tool available to calculate CG outside the options provided on the EFB.

The Electronic Flight Bag provides an easy-to-use interface to interact with the aircraft attachments, doors and payloads. The EFB is located in the left side wall of the pilot seat, near the window. The EFB can also be accessed from the Loadmaster Station, though displayed as a laptop instead of a tablet.



EFB, Services Page

1. ↔ **EFB Menu:** Switch tabs between Services, Fuel, Payload and Map
2. ▣ **EFB On/Off Power Button**
3. **Services Page:** Select doors to open/close, external attachments, etc.
4. **Hide EFB Tablet Clickspot**



EFB, Fuel Page

1. **↔ EFB Menu:** Switch tabs between Services, Fuel, Payload and Map
2. **▣ EFB On/Off Power Button**
3. **Fuel Page:** For visualization only, displays the fuel quantity per tank, as well as total fuel loaded on the aircraft. To load fuel, use the MSFS24 Tablet EFB.



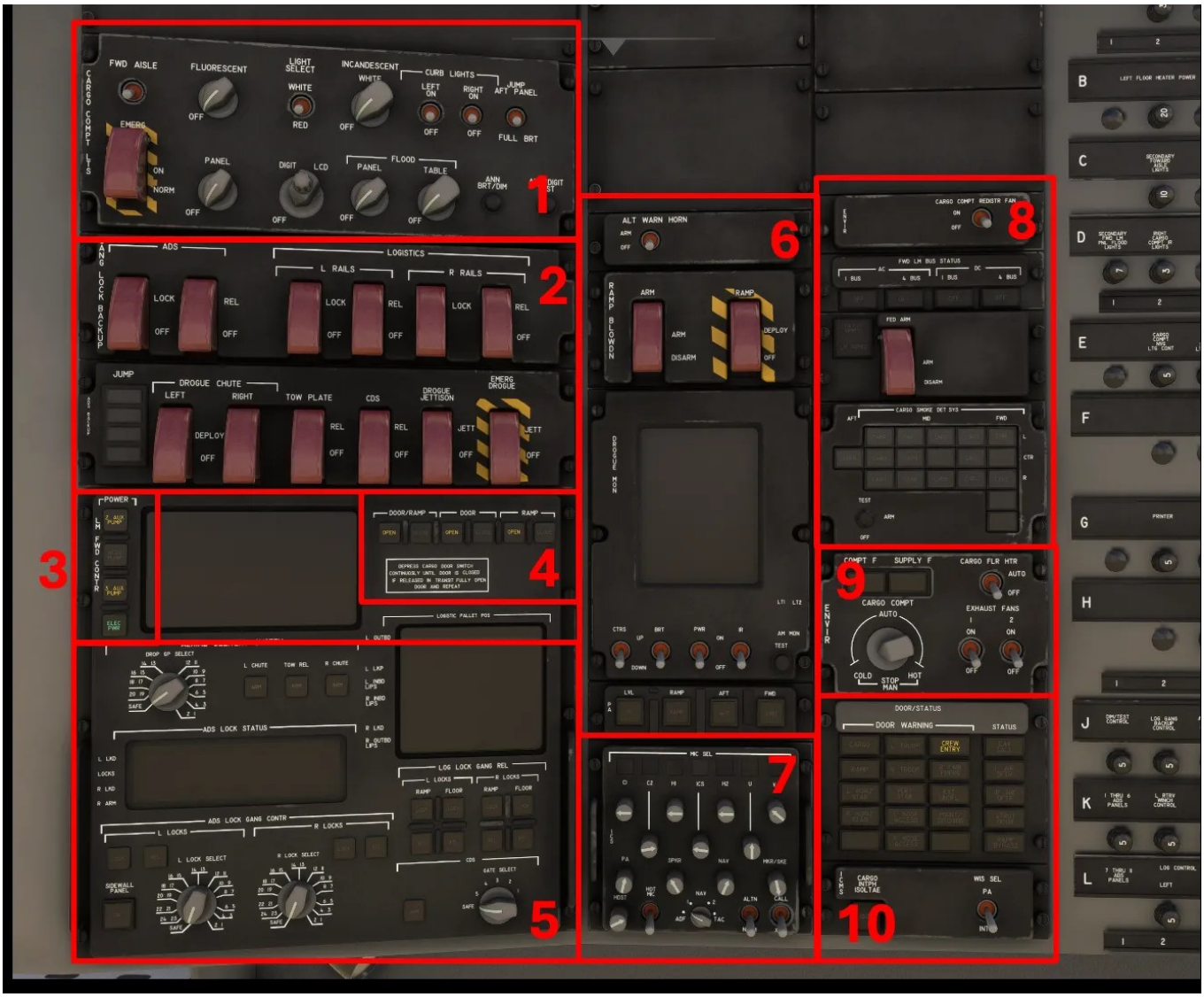
EFB, Payload Page

1. **↔ EFB Menu:** Switch tabs between Services, Fuel, Payload and Map
2. **▣ EFB On/Off Power Button**
3. **Payload Selection:** Automatically assigns the corresponding weights to all six cargo stations and updates the aircraft's center of gravity; visually places the loads inside the cargo bay.
4. **Aircraft Weights:** Monitor aircraft weights to ensure the takeoff weight is under MTOW
5. **Center of Gravity** Calculation Diagram: Automatically calculates and sets the CG for the aircraft based on the selected load.

Miltech Simulations-Microsoft C-17 Globemaster III

Cargo and Loadmaster

Located on the Front of the cargo bay, to the right side of the cockpit stairs. The Loadmaster typically manages cargo operations. This station is equipped with controls and monitoring systems for the loading and unloading process, ensuring cargo is distributed properly and safely. It usually includes displays or instruments for weight distribution, cargo restraint systems, and communication tools to stay in contact with the flight crew and ground personnel. The Loadmaster ensures that cargo is properly secured, and balanced for the flight, and that it adheres to aircraft limitations for safe operation. Here you will find a laptop computer that can be used to load cargo and fuel into the aircraft.



Loadmaster Station Panel

1. **Loadmaster Lights:** Controls Cargo Bay flood lights, LM Panel lights, LM Desktop Lamp, etc. Some Lighting Knobs/switches may be INOP as they do not apply to simulation.
2. **↔ Chute/Rails Control Switches:** INOP, not simulated.
3. **System Status Lights:** Display the status of Hyd 2 and Hyd 3 systems, as well as Electrical Power system. These are important for door and ramp operation, as the ramp and cargo door cannot operate without Hydraulic Pressure or Electrical Power,

4. **Cargo Door and Cargo Ramp Pushbuttons**
5. **Aerial Delivery System Panel:** INOP, not simulated
6. **Ramp Blowdown / Drogue Panel:** INOP, not simulated
7. **PA/Communications Panel**
8. **FED/Smoke Detection Panel:** INOP, not simulated
9. **Environment Panel:** Control Exhaust Fans and Cargo Bay Heater. Cargo Compt temperature selector and temperature displays INOP.
10. **Door Status Lights**

Additionally, the Loadmaster Station has access to the Electronic Flight Bag displayed as a laptop. The touchscreen provides an easy-to-use interface to interact with the aircraft attachments, doors and payloads. We have also added a little homage to our early days in Flight Simulation ;)

For more information, read the EFB Section of this manual.



Loadmaster EFB

Miltech Simulations-Microsoft C-17 Globemaster III

Normal Procedures

External Preflight Safety Inspection

Item	Action
Engine Covers	Removed
Pitot Covers	Removed
Wheel Pins	Removed
Front Gear Tire Pressure	Check
Main Gear Tire Pressure	Check

Preflight Safety Inspection

Item	Action
Gear Handle	Down
ENGINE IGNITION NORM/ORIDE Switch	NORM
ENGINE IGNITION Selector Switch	OFF
ENG SHUT OFF Switches 1, 2, 3, 4	OFF
GND OPS PWR Switch	OFF
BATT Switch	ON/Locked
DC X TIE Switch	AUTO
EMERG PWR Switch	AUTO
XFER BUSES Switch	NORM
L/R AV BUS Switches	AUTO
WAP (Warning/Caution Displays)	RESET MASTER CAUTION, Check WAP MSG
Fire Detection System	Tested
Smoke Detection System	Tested
EXT PWR Switch	ON if Available
AC X TIE Switch	AUTO

Item	Action
BAILOUT Alarm	TESTED
EMERG Lights	ARM
STALL Test	Complete, Verify WAP Messages and Sounds

Preflight Checklist

Item	Action
Parking Brakes	ON
WAP (Warning/Caution Displays)	Checked
Interior/Exterior Lights	As Required
Cockpit and Instrument Illumination	As Required
IRU Switches 1, 2, 3, 4	ON
HUD, MCD, MFDs	ON and Adjusted
COMM/NAV Radios	Set
Pilot STBY Instruments	Checked
ELT Switch	NORM
FED ARM Switch	Disarm
OBIGGS L&R Switchlights	ON
COMPT AIR FLOW	ON
TRIM AIR	ON
AVIONICS COOL ORIDE	OFF
W/S DEFOG	ON
L and R W/S Anti-Ice	OFF
ENG Anti-Ice	OFF
Probe Heat	OFF
No Smoking, Fasten Seatbelts Signs	ON
Anti-Skid/Brake Temp Switch	ARM
Mission Computer (FMC)	Initialized

Item	Action
FCS Actuator Panel	EFCS
Mission Computer Data / FMC	Setup Flight Plan and Verified
Fuel Pumps #3	ON
APU Starter	START, wait RPM >95%
APU Bleed	ON
APU Generator	ON
HYD2 and HYD3 AUX Pumps	ON, verify PRESS PSI >3000

Loadmaster Checklist

Now move the camera to the Loadmaster Station (recommended, can also perform these steps from Cockpit EFB)

Item	Action
Loadmaster Computer	On
Open Cargo Ramp/Door	As Required
Cargo Selected and Loaded	Check
Takeoff Weight is under Safe Limits	Verify
CG is under Safe Limits	Verify, crosscheck with Charts

Before Start Engines Checklist

Return to Cockpit Pilot Seat

Item	Action
COMM Radios	Set
APU and External Equipment	As Required
Parking Brake	On
WAP Displays	Checked
Fuel QTY	Checked

Engine Start Checklist

Item	Action
MFD 2, 3	Set for Engine Start
NAV Lights	ON
ANTICOL Lights	FSLG/WING
ENGINE IGNITION Selector Switch	A or B, or A&B
Throttles	IDLE
Bleed Air Supply	Checked
Engine Shutoff Valve 1	ON
Start Engine 1	Start
Monitor N2 and Engine Parameters, Engine 1	Monitor
Engine Shutoff Valve 4	ON
Start Engine 4	Start
Monitor N2 and Engine Parameters, Engine 4	Monitor
Start Engines 2, 3	Follow Procedure Above, Start & Monitor
Generators 1, 2, 3, 4	ON
APU Bleed	OFF
Engine Bleeds	ON, All Four
Wing De-Ice	As Required
ENG Anti-Ice	As Required
Probe Heat Switchlights	As Required (ON Below 6 Deg C)
Packs L and R	ON
Hyd Pumps	PRI/SEC/AUX ON, All Four

Before Taxi Checklist

Item	Action
DC X TIE Switch	AUTO
Hydraulic XFER Pump	AUTO

Item	Action
Flaps/Slats	Checked for Full Movement
Flight Controls	Checked for Full Deflection
Flight Controls	Checked In MECH Law
APU Generator	OFF
APU	OFF
External Power	OFF
STBY ENG SEL	EPR
Thrust Rating	SET MAX, DRT or MAN as Required
Flaps	Set
Stabilizer, Rudder Trim, Aileron Trim	Set, 0 and 0
Altimeters	Set
Doors	Closed
Hydraulic Temps	Checked
WAP Display	Checked

Taxi Checklist

Item	Action
Taxi	40% N1 Max
Taxi Lights	On, Extended
Brakes	Minimize Use
Thrust Reversers	Avoid Repeated Cycle of use to Slow Down

Before Takeoff Checklist

Item	Action
Brakes, Steering and Stick	Checked
Flight Instruments	Checked
Probe Heat Switchlights	ON

Item	Action
Fuel Boost Pumps	ON
WAP Display	Checked

Lineup Checklist

Item	Action
Slats/Flaps	Extended, Flaps ½, Index Confirmed
Hydraulic Temps	Checked
Exterior Lights	As Required

Takeoff Checklist

Item	Action
Brakes	Hold
Takeoff Thrust	MAX EPR or DRT EPR
Engines	Stabilize at 1.15 EPR
Brakes	Released
Rotate	12 Degrees

After Takeoff Checklist

Item	Action
Landing Gear	UP, Lights Out
Flaps/Slats	UP/RET
Anti-Ice	As Required
Pressurization/Air Conditioning Packs	Checked and ON

Cruise

Item	Action
Altimeters	Set

Item	Action
Anti-Ice	As Required
Pressurization	Checked
Exterior Lights	As Required
Pers Warning Signs	As Required

Descent

Item	Action
Engine Ignition Selector Switch	A or B or A\&B
Anti-Ice	As Required
Pers Warning Signs	ON
Enroute Descent	Lowest of Mach 0.74 / 310 KIAS
Tactical Descent	Lowest of Mach 0.80 / 320 KIAS

Approach

Item	Action
Passing 10,000 Feet	250 KIAS Max
Exterior Lights	ON
Altimeters	Set
Flaps	Set
Thrust Rating	As Required (Normally MAX)
WAP Display	Checked

Before Landing

Item	Action
Slats/Flaps	Extended, Flaps on Index
Landing Gear	Down

Item	Action
Spoiler Switch	ARM

Landing

Item	Action
Normal Landing (3/4 to FULL Flaps)	FPV set to -1.0 TO -1.5 degrees, 240 FPM
Assault Landing (FULL Flaps)	FPV set to -1.5 TO -2.0 degrees, 360 FPM
Reversers	Four REV, Reverse IDLE at 70 kts

After Landing

Item	Action
Flaps/Slats	UP/RET
Spoiler Switch	Dearmed
Exterior Lights	As Required
Cargo Door and Ramp	As Required
Engines	Operate at 1.05 EPR or less for 5 Minutes
Engine 1 and 4 HYD PRI, SEC, AUX Pumps	OFF
APU	Start
APU Generator	ON
Engine 1 and 4 Boost Pumps	OFF
Probe Heat	OFF

Cockpit Switchoff

Item	Action
Parking Brake	ON
Generators 1, 2, 3, 4	OFF
Engine Shut Off Switches	OFF
Anti-Ice	OFF

Item	Action
Hyd Pumps	OFF
Interior and Exterior Lights	As Required
Pers Warning Signs	OFF
IRU Switches 1, 2, 3, 4	OFF
OBIGGS L&R Switchlights	OFF
EMERG LT Switch	OFF
DC X TIE Switch	AUTO
EMERG PWR Switch	ON
XFER Buses	OFF
APU	OFF
APU GEN	OFF
BATT Switch	OFF