DO NOT USE FOR FLIGHT

C-130 X-perience

Captain Sim

ABOUT THIS MANUAL

VERSION: 28 FEBRUARY, 2008

WARNING: THIS MANUAL IS DESIGNED FOR MICROSOFT® FSX USE ONLY. DO NOT USE FOR FLIGHT.

The 'C-130 X-perience' FLIGHT MANUAL is organized into four Parts:
Each Part is provided as a separate Acrobat® PDF document available via:

Click START > Programs > Captain Sim > C-130 X-perience > Manuals >

Part I – User' Manual - this document

Part II – Systems and Equipment
Part III – Normal Procedures
Part IV – Flight Characteristics and Performance Data

FOR GENERAL INFORMATION ON THE 'C-130 X-PERIENCE' PRODUCT PLEASE USE WWW.CAPTAINSIM.COM .
THIS MANUAL PROVIDES ADDITIONAL INFORMATION ONLY, WHICH IS NOT AVAILABLE ON THE WEB SITE.

'C-130 X-PERIENCE' FLIGHT MANUAL

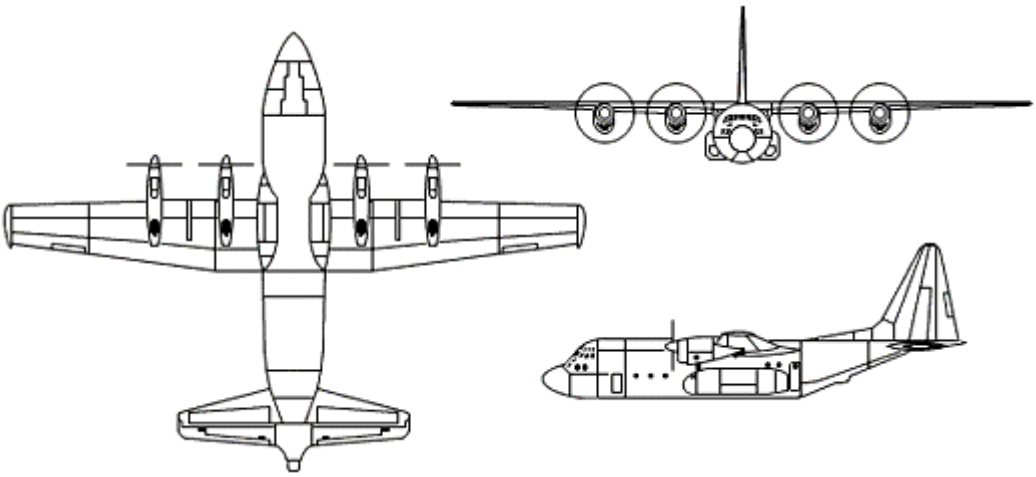
PART I – USER'S MANUAL

CONTENTS

30 C-130 EXTRA PACK II PRODUCT

49 CUSTOMER SUPPORT

THE C-130 AIRCRAFT



The Lockheed C-13O is high-wing, all-metal, long-range, land-based monoplane. The mission of these aircraft is to provide rapid transportation of personnel or cargo for delivery by parachute or landing. These aircraft can be used as tactical transports and can be converted readily for ambulance or aerial delivery missions. The aircraft can land and take off on short runways, and can be used on landing strips such as those found in advance base operation.

ACCOMMODATIONS

	C-130	C-13O-30
Ground Troops	78	114
Ground Troops (including wheel well seats)	92	128
Paratroops	64	92
Litters/Attendants	70/6	93/8
Litters/Attendants	74/2	97/4

PROPULSION

Power is supplied by four Allison T56-A-7/15/16, turboprop, constant-speed engines. There are provisions for externally mounted ATO units to provide additional thrust for take-off. Each engine drives a four-blade Hamilton Standard Hydromatic, constant-speed propeller with full feathering and reversible pitch.

AIRCRAFT DIMENSIONS

The principal dimensions of the C-130 aircraft are:

Wing Span - 132 feet 7 inches
Length - 99 feet 5 inches
Height - 38 feet 4 inches
Stabilizer Span - 52 feet 8 inches

Cargo Compartment:

Length - 40 feet
Width (Minimum) - 10 feet 3 inches
Height (Minimum) - 9 feet

The principal dimensions of the C-130-30 aircraft are:

Wing Span - 132 feet 7 inches
Length - 112 feet 9 inches
Height - 38 feet 4 inches
Stabilizer Span - 52 feet 8 inches

Cargo Compartment:

Length - 56 feet
Width (Minimum) - 10 feet 3 inches
Height (Minimum) - 9 feet

C-130 X-Perience

'C-130 X-PERIENCE' FAMILY OF PRODUCTS

The C-130 for FSX consists of the following four separate products:

- Base Pack
- Extra Pack I
- Extra Pack II
- Pro Pack

http://www.captainsim.com/products/c131/

Base Pack

'C-130 X-PERIENCE' BASE PACK PRODUCT

http://www.captainsim.com/products/c131/bp/

MODELS AND LIVERIES

Upon installing the C-130E aircraft will appear under 'Lockheed' manufacturer, 'Captain Sim' publisher.

CUSTOM 3D ANIMATION OF THE EXTERIOR MODELS

Forward Door
(Shift+E then 1)

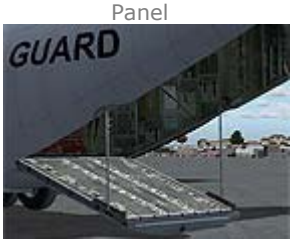
Aft Doors (2)

Pilots' Windows (2)

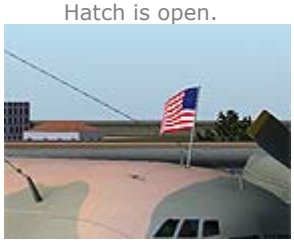
Air Deflectors (2)
(/)

Landing Gear

Cargo Ramp
Concorde Nose (should be assigned) or Control Panel



Flag
The flag will not appear until the Emergency Hatch is open.



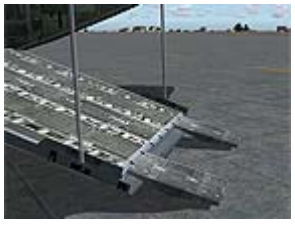
Emergency Escape Hatches (3)

Cargo ramp door
Concorde Nose (should be assigned)

Emergency exit

Ground vehicle
Doesn't move if Ramp closed

Cargo Ramp Tracks



Wipers (2)
VC

GTC Door
VC

Landing lights (2)
VC of Ctrl+L

Engine Oil cooler flaps(4)
VC

DO NOT USE FOR FLIGHT

Propellers Rotation (4)

Propeller Blades Pitch (16)
VC or 2D

Wing Flaps (2)
VC, 2D or F5,6,7,8

Ailerons (2)

Rudder

Elevator (2)

Ailerons trim tab (2)

Rudder trim tab

Radome

Radar Dish

GPU

3D VIRTUAL COCKPIT (VC)

Highly detailed Virtual Cockpit (VC) consists of two main parts - the Flight Deck and the Cargo Cabin:

FLIGHT DECK

Fully functional and readable virtual cockpit designed as a primary control environment. Although most switches and controls in the VC are synchronized with 2D panel but the following systems and controls are available in the VC only:

- NWS (Nose Wheel Steering System)
- Trim Tab Control Panel
- Low Speed Ground Idle Control Panel
- Assisted Takeoff Control Panel
- Negative Torque System
- Windshield Wipers Control
- Air Deflectors Control
- Nose Wheel Steering Wheel

See Part II – Systems and Equipment for details.

CARGO CABIN

Cargo Cabin is also included as a part of the VC. The Flight Deck and the Cargo Cabin are connected via stairwell.

You can use utilities like 'Active Camera' to walk from the Flight Deck to the Cargo Cabin.

2D PANELS (High resolution)

Five full size 2D panels and 10 pop-up 2D panels included:

Left Seat Pilot Panel

(1600 x 1200 pix)

Right Seat Pilot Panel

(1600 x 1200 pix)

Lower Overhead Panel

(1600 x 1200 pix)

Upper Overhead Panel

(1600 x 1200 pix)

14 pop-up 2D panels

Navigator panel

(1600 x 1200 pix)

See Part II – Systems and Equipment for details.

REPAINT KIT

Prior to using the Repaint Kit please read Captain Sim Copyright Policy.

1. DOWNLOAD 'C-130 X-PERIENCE' REPAINT KIT

2. CREATE A LIVERY OF YOUR CHOICE.

IMPORTANT:
The new livery set should be **ACE** (Aircraft Configuration Editor) compatible. Make sure the new livery set meets the following requirements:

- Texture files are not renamed;
- Texture files are in DXT format;
- Package includes 256x128 pixels *airlinenameYYYY.JPG* image (screenshot) of the new livery.
- Package includes ***livery.cfg*** (do not rename it!) file in the following format:

[livery]

model = 0 (model ID, see below)

0 = C-130E 'Hercules'
1 = C.Mk1 'Hercules'
2 = HC-130 'Hercules'
3 = C-130J 'Hercules'
4 = C-130J 'Hercules'
5 = C-130T 'Hercules'
6 = CL-130 'Hercules'
7 = KC-130 'Hercules'
8 = C-130A 'Hercules'
9 = C-130H 'Hercules' French
10 = C-130H 'Hercules'
11 = C-130H-30 'Hercules'
12 = L-100-30 'Hercules'
13 = LC-130 'Hercules'
14 = NC-130 'Hercules'
15 = AC-130 'Spectre'
16 = C.Mk3 'Hercules'
17 = C-130J-30 'Hercules'

texture= short (5-7 characters) but unique code of your repaint.
For example: for Greece Air Force livery circa 1980 you'd use 'gaf_80 code'. The code will be used in the texture folder name in the MSFS: texture.gaf_80

atc_id = XXXXXX any numbers & characters

atc_airline = XXXXXX any numbers & characters

atc_flight_number = XXXXXX any numbers & characters

ui_variation = Unique variation name. Should include full name and year when the livery was current AND repaint artists' initials. For example: Greece Air Force, 1980 FH

atc_id = XXXXXX any numbers & characters

description = Description of the livery. Any info you'd like to provide on the repaint. Artist name and e-mail address – recommended for feedback.
\n(c) 2007 Captain Sim www.captainsim.com line must be included in the description.

EXAMPLE OF THE LIVERY.CFG FILE:

[livery]
model=0
texture=ba_00
atc_id=C001
atc_airline=USAF
atc_flight_number=0001
ui_variation= Blue Angels, 2000 AP
description="C-130E Hercules (c) 2007 Captain Sim www.captainsim.com"
---

3. TEST YOUR LIVERY IN FSX

4. PACK TO ZIP ARCHIVE THE FOLLOWING:

- the new textures (Include modified textures only)
- the *LIVERY.CFG* file
- the *airlinenameYYYY.JPG* image

IMPORTANT: All files must go the archive root without any intermediate folders.

5. PUBLISH THE LIVERY AT CAPTAIN SIM WEB SITE

Using this form: http://www.captainsim.com/cgi-bin/products.pl?action=add_livery

Note: You will need a copy of the 256x128px JPEG image.

ACE™ (AIRCRAFT CONFIGURATION EDITOR) UTILITY

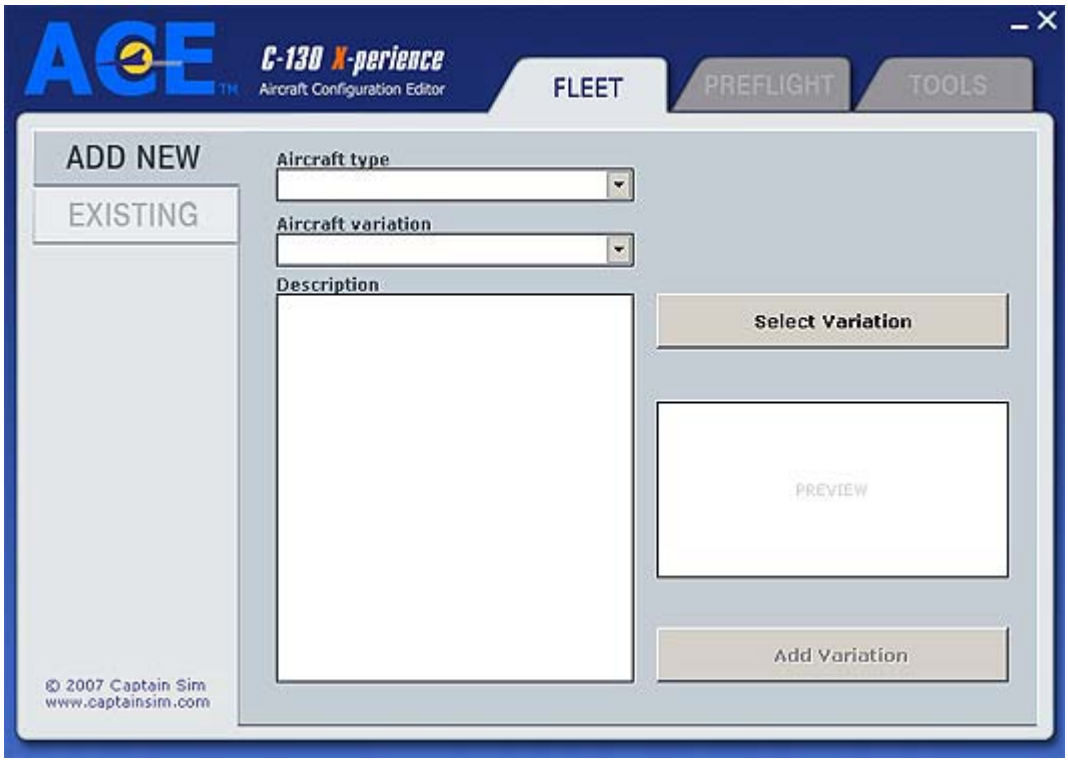
The ACE utility is provided to:

1. Select, preview and add to FSX new C-130 variations (designed by you or other) and flags.
2. Manage your C-130 fleet: edit or delete any existing C-130 variation.
3. Perform complete preflight on any selected C-130.
4. Perform path configuration and product testing.

ACE contains three horizontal tabs: **LIVERIES**, **PREFLIGHT** and **TOOLS**.

'LIVERIES' TAB

This tab allows to select, preview and add to FSX new C-130 variations.



The **LIVERIES** tab contains two vertical tabs: **ADD NEW** and **EXISTING**.

'ADD NEW' TAB

The ADD NEW vertical tab helps you to add new C-130 livery to FSX.

How to add new XYZ livery?

1. Make sure your Flight Simulator is not running.
2. Create folder in **FSX/Captain_Sim/130/variants** folder.
3. Download new C-130 livery archive to the created folder:
   FSX/Captain_Sim/130/variants/XYZ
4. Unzip all content of the downloaded archive to the same folder:
   FSX/Captain_Sim/130/variants/XYZ

5. Make sure all textures bmp files and *livery.cfg* and *airlinenameYYYY.JPG* files are present and located in the XYZ folder.

6. Start ACE (double-click on the ACE shortcut located at your desktop or go START>PROGRAMS>CAPTAIN SIM>C-130 X-PERIENCE>ACE).

7. Press 'ADD NEW' tab.

8. Press SELECT VARIATION button and select the variation you want to add. Press OK.

The new variation's image should appear in preview window. Also the new variation info and description should appear in the text fields.

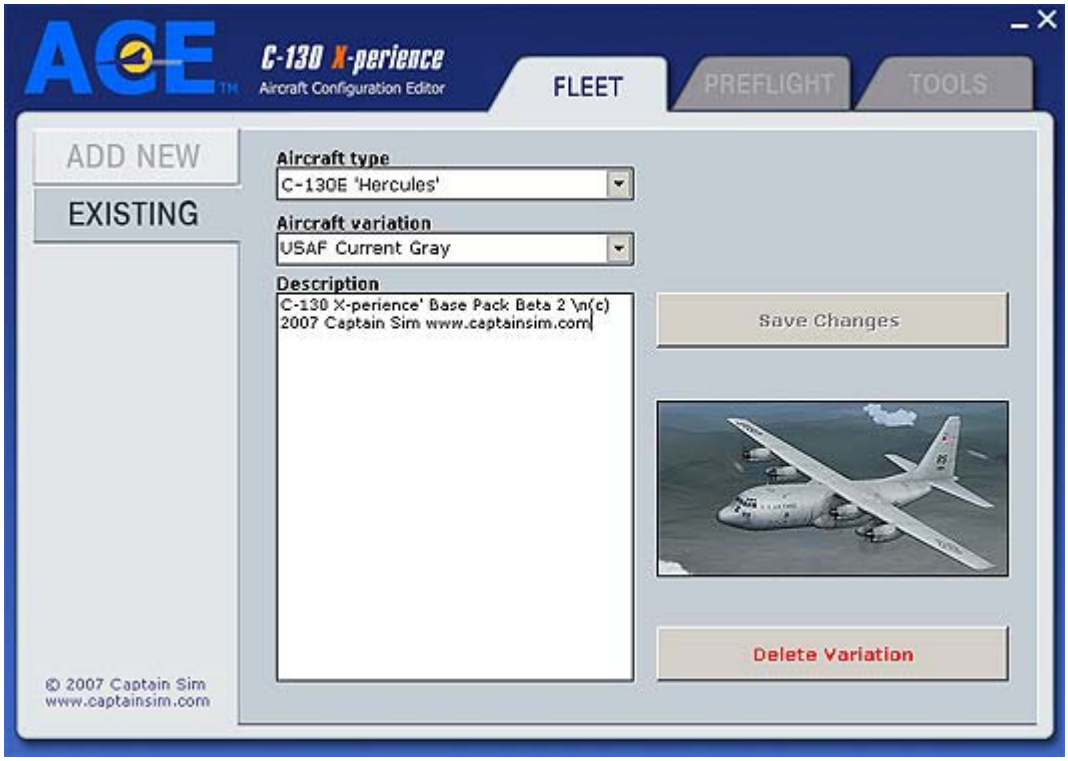
Note: You CANNOT change any text info now. You can change it after new livery installation using EXISTING menu section.

9. Press ADD VARIATION button.

Done, the new variation will appear in your FSX under CAPTAIN SIM publisher.

'EXISTING' TAB

The EXISTING tab helps you to manage existing (installed to FSX) C-130 liveries:



How to EDIT livery description?

1. Press 'EXISTING' tab button.

Note

You can modify text in description field. You cannot change Aircraft type and Aircraft variation.

2. Select 'AIRCRAFT TYPE'.

3. Select 'AIRCRAFT VARIATION'. 'EDIT VARIATION' and 'DELETE VARIATION' buttons will be activated.

4. Now you can edit texts for the selected livery. When finished, press 'SAVE CHANGES' button to save the changes.

How to DELETE a livery?

1. Press "EXISTING" tab button.

2. Select 'AIRCRAFT TYPE'.

3. Select 'AIRCRAFT VARIATION'. 'EDIT VARIATION' and 'DELETE VARIATION' buttons will be activated.

4. Press 'DELETE VARIATION' button. Pressing 'OK' button will delete the selected variation from your C-130 fleet. No backup copy will be saved.

Note

A black-and-white preview image with inactive 'SAVE' and 'DELETE' buttons indicates that the new model/livery is available for purchase at Captain Sim Online Store.

'PREFLIGHT' TAB

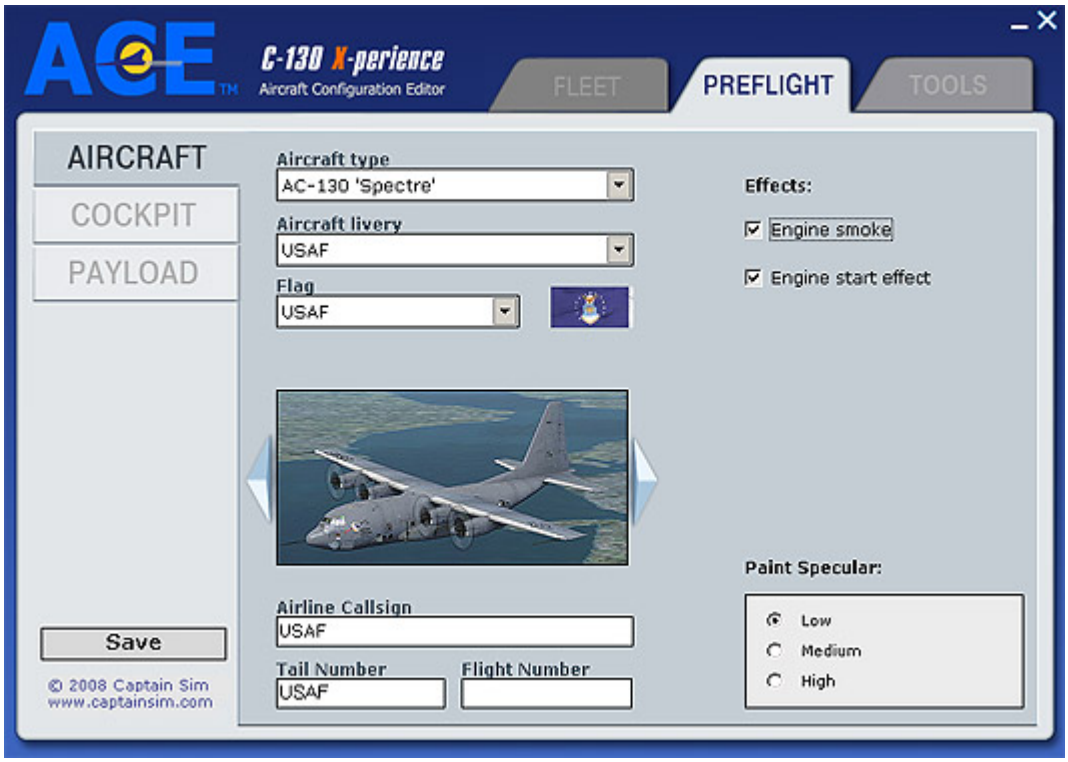
Use this tab to make various pre-flight settings. All settings are optional.

The **PREFLIGHT** tab contains four vertical tabs:

- AIRCRAFT
- COCKPIT
- FUEL
- PAYLOAD

'AIRCRAFT' TAB

Use for general aircraft settings.



- Select 'AIRCRAFT TYPE'.
- Select 'AIRCRAFT LIVERY' for this aircraft type.
- Select 'FLAG' to fly while taxing.

To add new flag to the list:

1. Create two flag pictures:
   - [flagname].jpg (60x30 pix) - for preview in ACE.
   - [flagname].bmp (128x64 pix, DXT3 format, use "Imagetool") - for texture.

   Note: The [flagname] should be identical for both images.

2. Place these files to {MSFS Root Folder}/Captain Sim/130/Flags folder.
3. Use ACE Editor to apply the flag to desired livery.

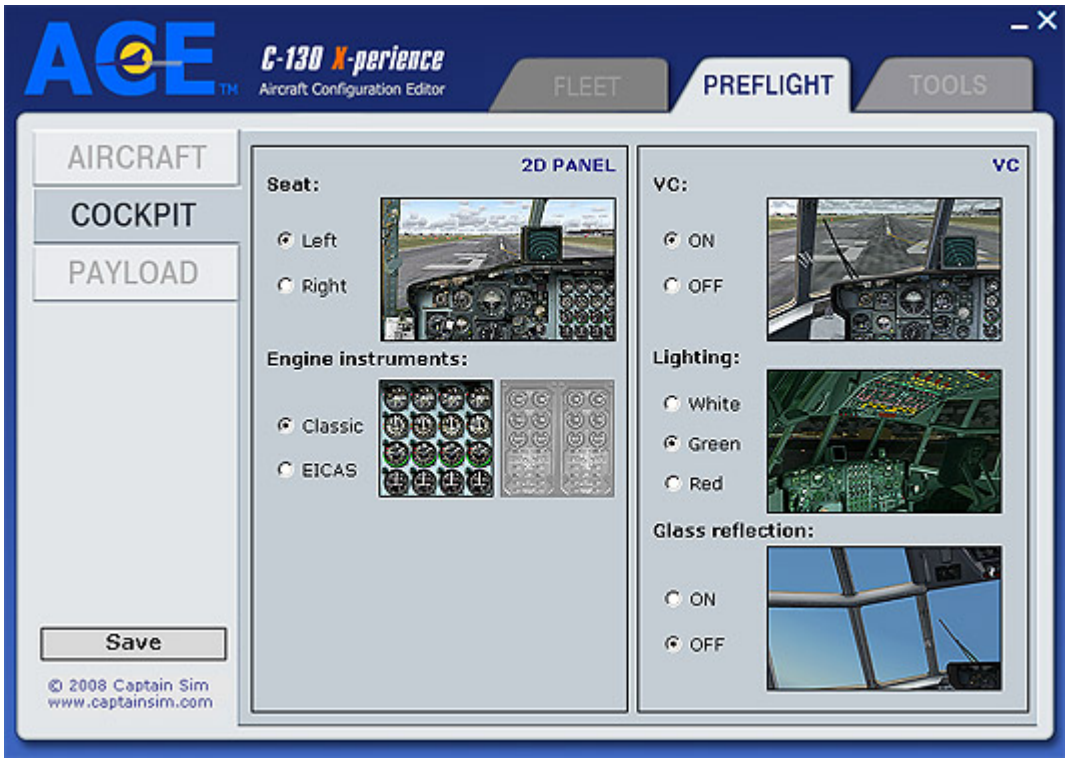
- Assign 'AIRLINE CALLSIGN'.
- Assign 'TAIL NUMBER'.
- Assign 'FLIGHT NUMBER'.
- Enable/disable the following 'EFFECTS' (keep in mind the 'appearance vs performance' rule, the enabled effects will improve the model look but might affect your FSX performance):

- Engine smoke;
- Engine start effect;

- Select the desired 'PAINT SPECULAR' using 'Low-Medium-High' button.

'COCKPIT' TAB

Use for 2D and VC settings.



2D PANEL OPTIONS

- Select 'SEAT' - Choose your default position: 'LEFT' - Pilot's seat or 'RIGHT' Copilot's seat.

Note

You always have an option to switch the seats using Control Panel (Shift+2) you can change the seat in flight.

- Select 'ENGINE INSTRUMENTS' - Classic ('steam gauges') or Glass (EICAS)*. To be activated upon the EICAS release. For Pro version only. * - Extra Pack I required for the EICAS option.

VIRTUAL COCKPIT OPTIONS

- Turn 'VC' ON/OFF.

Note

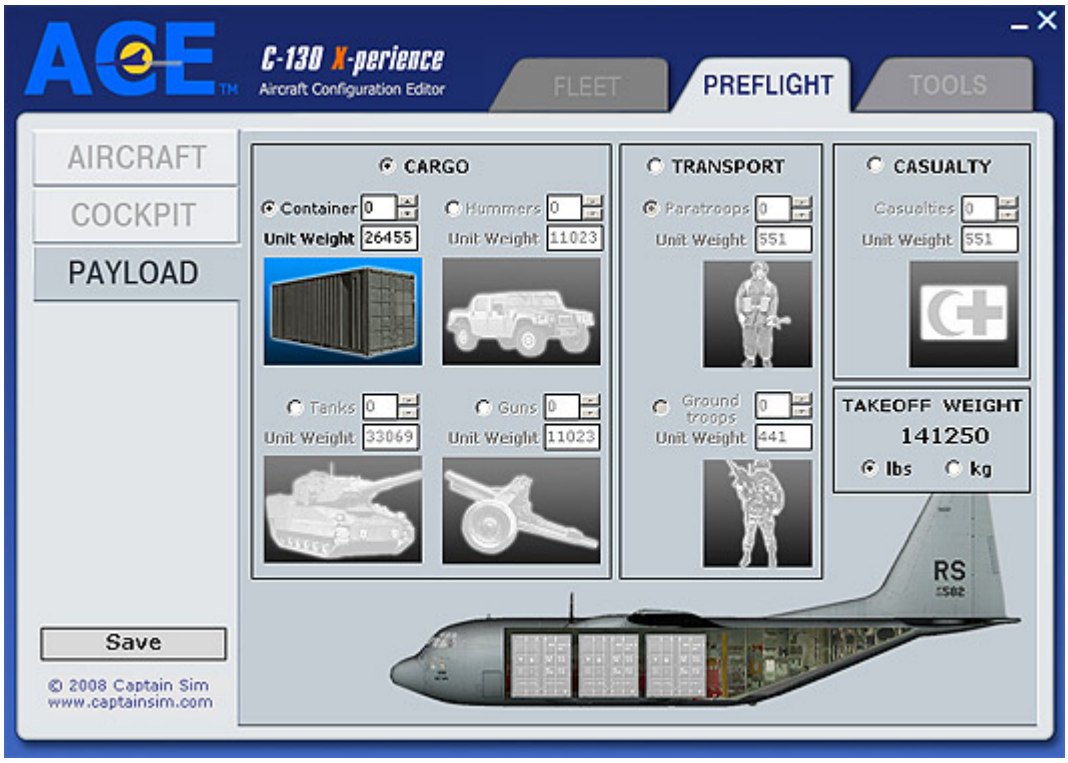
VC OFF option may improve the FSX performance on some systems.

- Select Cockpit Night 'LIGHTING' colour - WHITE (default), GREEN or RED.

- Select cockpit Glass Reflection ON/OFF.

'PAYLOAD' TAB

Use for payload settings.

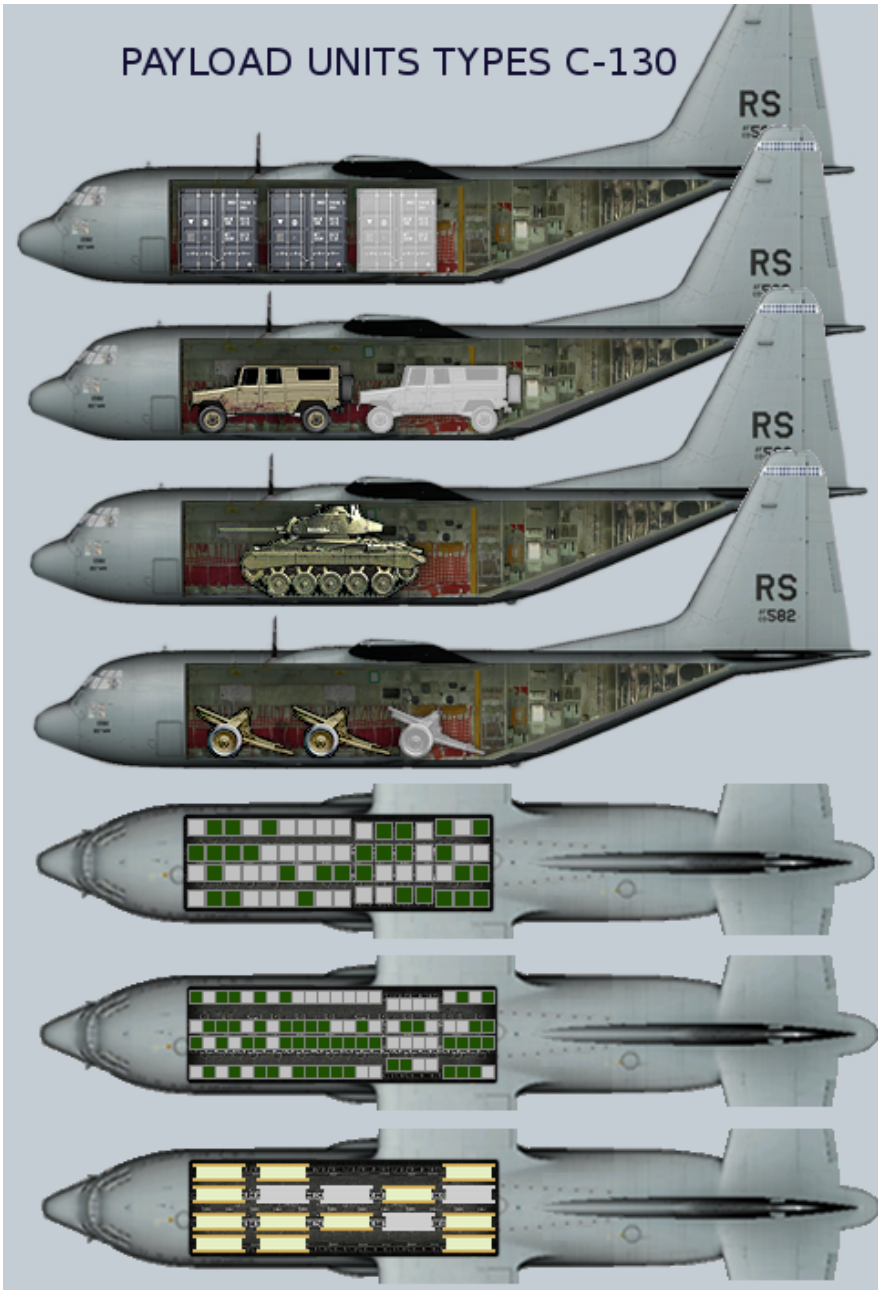


- Select Measurement System for this menu section – LBS (pounds) or KG (kilograms).
- Select one of three payload options: 'CARGO', 'TRANSPORT' or 'CASUALTY' using radio button. After this the corresponding section will be available for modifications. The airplane picture at the bottom of the page will be changed in accordance with the selected payload type.

  You can change the selected payload type 'UNITS NUMBER' and 'UNIT WEIGHT' using the editing boxes. That will update the bottom aircraft preview picture automatically.
  Also you can change 'NUMBER' of loaded units by clicking the «gray units» right on the aircraft preview picture. The clicked pictures turn in colour (i.e. 'loaded' to the airplane). The 'UNITS NUMBER' in the editing boxes will be changed correspondingly. If you change the values in the 'Edit' boxes the allocation of payload in the cabin will take place automatically.
- 'TAKEOFF WEIGHT' (TOW) box – continuously displays current total takeoff weight. In case of overload the TOW indicator panel will be blinking red. In this case you should unload some fuel and\or some payload.

Note

If you use 'CASUALTY' option, loading/unloading will increase/decrease correspondingly to four units at once (the stretchers are set in four tiers).



'SAVE" BUTTON

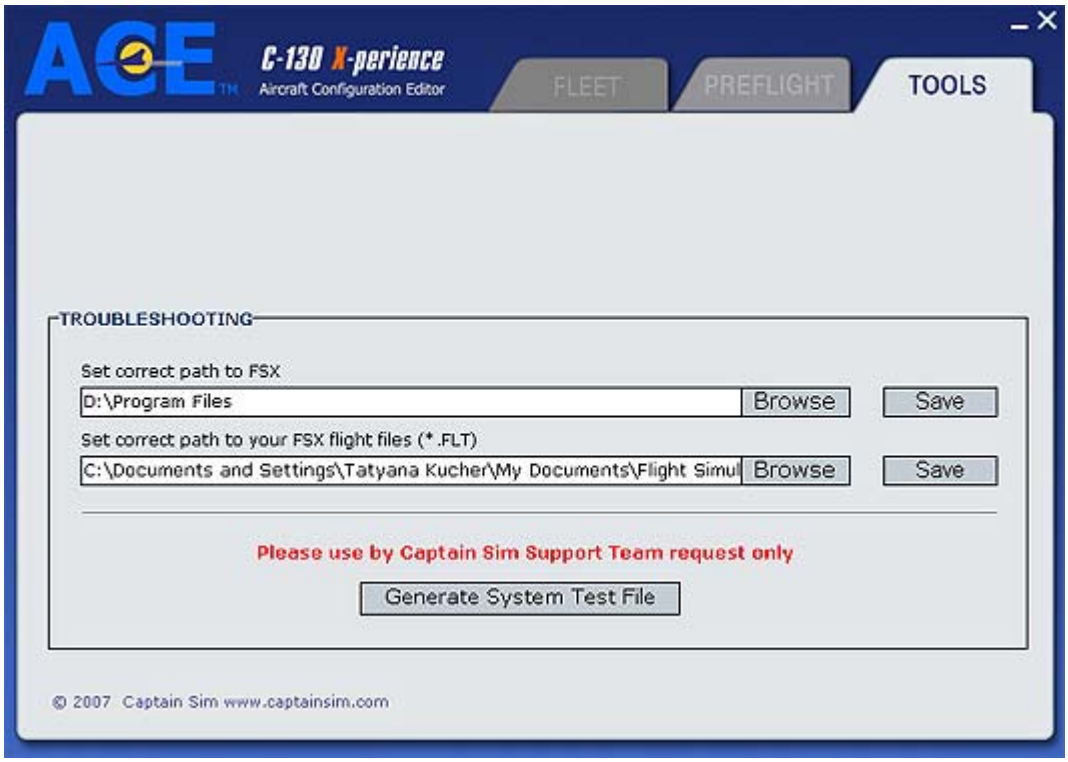
When you finish changing settings to apply them you should press 'Save' Button. Two options will be available: 'Save' and 'Cancel'.

'Save' - all changes you have made will be saved. Note: if you press 'Save' and THEN start MSFS yourself, changes you have made in fuel loading will not be applied for flight.

'Cancel' - this dialog box will be closed and you can continue working with ACE.

DO NOT USE FOR FLIGHT

'TOOLS' TAB



TROUBLESHOOTING

PATH CONFIGURATION tool.
If the 'LIVERIES' and 'PREFLIGHT' tabs in your ACE are inactive please press 'BROWSE button, set the path to FSX.exe or your flight files *.FLT path and press 'SAVE' button. 'LIVERIES' and 'PREFLIGHT' tabs should be activated.

GENERATE SYSTEM TEST FILE button.
Please use this tool at Captain Sim support officer request ONLY.
Click this button to run safe system diagnostic tool and save the data to 'test.txt' file. No personal information collected.

Extra Pack I

'C-130 X-PERIENCE' EXTRA PACK I PRODUCT

http://www.captainsim.com/products/c131/ep1/

EXTRA PACK I INSTALLATION WITHOUT C-130 BASE PACK

In this case the following limitations apply:

- Sound - Alias to default Beech King sound
- Panel - Alias to default B747 panel
- No VC
- No Base Pack features

MODELS AND LIVERIES

Upon installing the C-130 aircraft variations will appear under 'Lockheed' manufacturer, 'Captain Sim' publisher:

- C-130A
- C.Mk1
- HC-130
- C-130J
- C-130J
- C-130T
- CL-130
- KC-130

C-130J

The C-130J is a modification of the C-130H, undertaken by Lockheed Martin at company expense, with intended sales to the United States and various foreign markets. The C-130J modification includes a two-crew member flight station, upgraded Allison AE 2100D3 engines, enhanced performance, and improved reliability and maintainability.

HOW IS THE 'C-130J' MODEL DIFFERENT FROM THE 'C-130E' MODEL

LH side Refueling probe (VC view)

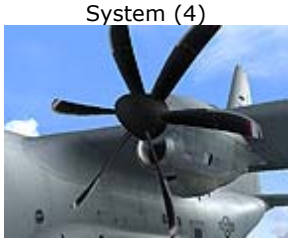
LH side Refueling probe (Exterior view)

APU Inlet Door And Exhaust

Modified Aft Door Windows

Fin Radome

Six-Blade Dowty Aerospace R391 Propeller System (4)



APU Exhaust Heat-Protection

Fwd Fuselage Formation Lights (2)

Modified Windows (2)

AE2100D3 Engines (4)

Cargo Compartment Ac Air Inlet Scoop And Exhaust

Flight Deck Ac Air Intake And Exhaust Scoop

Antennas (18)

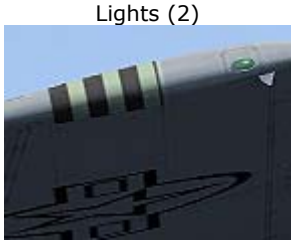
Emergency exit doors (2)

SKE Radome

Fin Formation Lights (2)

Aft Fuselage Formation Lights (2)

Wing Tips Formation Lights (2)



C-130T

The mission of the C-130T Logistics Support Aircraft is to provide logistics support to Navy fleet operating forces. The C-130T Aircraft provides rapid transportation for personnel or cargo for delivery by parachute or landing. The aircraft can be used as a tactical transport, or readily converted for ambulance or aerial delivery missions. The aircraft can land and take off on short runways, and can be used on landing strips such as those found in advanced base operations. It can provide mission capabilities such as emergency evacuation of personnel and key equipment, advanced party reconnaissance, and special warfare operations, as directed.

HOW IS THE 'T' MODEL DIFFERENT FROM THE 'C-130E' MODEL

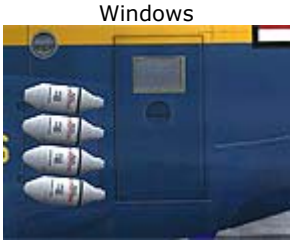
ATO Units (8)

Observer Canopy

APU Inlet Door And Exhaust

DO NOT USE FOR FLIGHT

Modified Aft Door Windows



New Antennas (16)

SKE Radome

APU Exhaust Heat-Protection

Flight Deck Ac Air Intake And Exhaust Scoop

Emergency exit doors (2)

Emergency exit doors (2)

Cargo Compartment AC Air Inlet Scoop And Exhaust

ASSISTED TAKE-OFF (ATO) SYSTEM

Provisions are made for external mounting of eight solid-fuel ATO units of 1000 pounds thrust* each, which supply additional thrust when it is desired to shorten take-off distance. The system is electrically controlled and operated from the assisted take-off control panel on the flight control pedestal.

The units are fired simultaneously and give thrust until the propellant is exhausted.

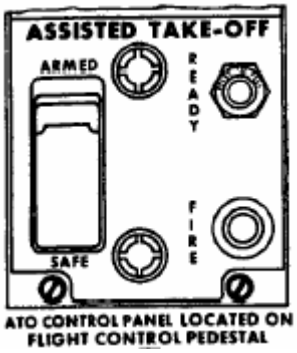
* The ATO is a visual effect only and does not supply any additional thrust.

ASSISTED TAKE-OFF (ATO) SYSTEM CONTROLS

The flight station controls and the indicator for the ATO system are located on the assisted take-off panel on the flight control pedestal (in VC only).

Note:

- JATO option must be selected and saved using the ACE.
- Default MSFS Smoke key (I) is a 'one-click' control for the ATO ignition circuits.



ATO CONTROL PANEL LOCATED ON FLIGHT CONTROL PEDESTAL

Armed Safe Switch

The ARMED-SAFE switch, located on the assisted take take-off control panel is a two position toggle switch designed to prevent accidental operation of the ATO system. When the switch is in the SAFE position the system will not operate. When the switch is in the ARMED position, the ATO CONTROL circuit is completed to the fire switch.

FIRE Switch

The pushbutton FIRE switch, located on the assisted take-off control panel, controls the operation of the ATO ignition circuits. When the ARMED-SAFE switch is in the ARMED position and the FIRE switch is depressed, 28-volt dc power from the ATO CONTROL circuit breaker energizes the ignition relay. Actuation of the ignition relay applies 28-volt, dc power from the main dc bus to the ATO igniters.

WARNING

- Do not approach any ATO unit until 30 minutes have elapsed from a firing attempt. If smoke appears from an ATO unit, wait 30 minutes after smoke stops before approaching the AT0 unit.
- With ATO unit igniters connected to the aircraft, do not expose any part of the body to the ATO unit nozzle assemblies.

ASSISTED TAKE-OFF

When the variables influencing take-off lengths, acceleration, and obstacle clearance indicate a marginal take-off, the use of ATO is required. When considering the use of ATO, first consider the objective for a particular take-off condition.

The objectives, acceleration to nose gear lift-off speed, acceleration to take-off speed, or minimum roll to clear obstacles will dictate when to actuate the ATO fire switch. The 12 to 15-second duration of the ATO units will accomplish the objective when fired at a pre-selected airspeed in consideration of the objective.

The ATO units are predicated on the basis of burnout at 50 feet altitude. The units will be fired by the copilot at the command of the pilot.

ATO VISUAL EFFECT APPEARANCE

- Any complex effect is always a hit on the MSFS performance.
- Any visual effect appearance and quality depends on particular system performance.

To adjust the ATO Effect quality, please go to MSFS menu, Options-> Settings -> Display -> Scenery -> "Special effects detail " and set them to 'High'.

CL-130

Information from spectrumwd.com:

NAVAL AIR STATION PATUXENT RIVER, MARYLAND 20670-5400
PUBLIC AFFAIRS DEPARTMENT

RELEASE #97-131 Aug. 18, 1997
Aircraft Division Officials Unveil Latest Version of C-130
NAVAL AIR STATION PATUXENT RIVER, MD

Officials at the Naval Air Warfare Center Aircraft Division recently announced the latest variant of the ubiquitous C-130 Hercules, the C-130 Floatplane. The C-130 Floatplane is proposed as a low-cost modification to existing aircraft which would add considerable flexibility to logistic, special forces, and other missions.

It would have field installable amphibian floats replacing the landing gear on C-130E/H/J models allowing open ocean, beaching, and hard surface operation without the need for a dedicated seaplane.

For the last two years, the warfare centerís aircraft division has contracted to Lockheed Martin Aeronautical Systems to perform a feasibility study and a technology risk reduction effort. These were done to identify and quantify the risk areas: hydrodynamic drag and impact loads spray patterns, and aerodynamic stability.

To mitigate this risk, a subscale model with a radical split float design was built and tested. The split float eliminates inboard spray, deflects outboard spray clear of the props and wings, reduces water impact loads, retains full cargo ramp operation, and has excellent sea-keeping qualities. Tow tank tests showed that water impact loads were lower than expected allowing sea state three operation. Drag was acceptable and spray patterns were excellent. Computational Fluid Dynamic Analysis indicated that aerodynamic stability degradation is within acceptable limits. Payloads up to 27,000 pounds and ranges more than 2,200 nautical miles with 10,000 pounds of cargo are possible. The C-130 Floatplane opens vast new missions that were formerly not feasible.

USN

HOW IS THE 'CL-130' MODEL DIFFERENT FROM THE 'C-130E' MODEL

ATO Units (8)

Floats

The main difference is the floats replaced the landing gear allowing open water operation.

Note:

- The 'CL-130 Model' floats are not amphibian type (no landing gear) therefore the model is not allowing hard surface operation.

- The 'CL-130 Model' does not have a water rudder. Use asymmetrical engines thrust to control the aircraft on water at low speeds.

ASSISTED TAKE-OFF (ATO) SYSTEM

See C-130T section.

KC-130

The KC-130 is a multi-role, multi-mission tactical tanker/transport which provides the support required by Marine Air Ground Task Forces. This versatile asset provides in-flight refueling to tactical aircraft and helicopters as well as rapid ground refueling when required.

Additional tasks performed are aerial delivery of troops and cargo, emergency resupply into unimproved landing zones within the objective or battle area, airborne Direct Air Support Center, emergency medevac, tactical insertion of combat troops and equipment, evacuation missions, and support as required of special operations capable Marine Air Ground Task Forces.

The KC-130 is equipped with a removable 3600 gallon (136.26 hectoliter) stainless steel fuel tank that is carried inside the cargo compartment providing additional fuel when required. The two wing-mounted hose and drogue refueling pods each transfer up to 300 gallons per minute (1135.5 liters per minute) to two aircraft simultaneously allowing for rapid cycle times of multiple-receiver aircraft formations (a typical tanker formation of four aircraft in less than 30 minutes).

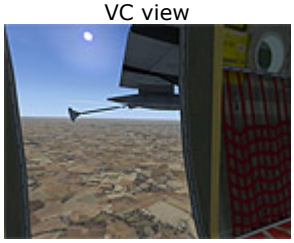
Some KC-130s are also equipped with defensive electronic and infrared countermeasures systems. Development is currently under way for the incorporation of interior/exterior night vision lighting, night vision goggle heads-up displays, global positioning system, and jam-resistant radios.

HOW IS THE 'KC-130' MODEL DIFFERENT FROM THE 'C-130E' MODEL

Fuselage Tank

Inflight Refueling Pods (2)

Inflight Refueling Pods (2) VC view



New Antennas (5)

SKE Radome

Modified Aft Door Windows

INFLIGHT REFUELING SYSTEM

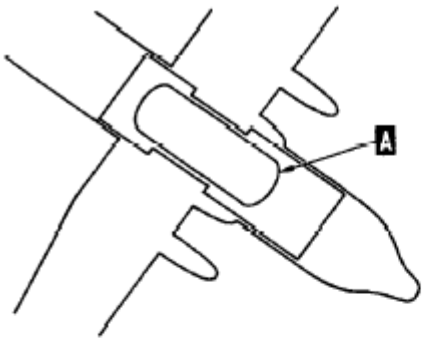
Note:
Description texts shown in gray color are provided for educational purposes only.
These features are not modeled in the 'KC-130 Model'

The inflight refueling system consists of a 3,600 gallon capacity cradle-mounted fuselage fuel tank, two drogue-and-hose reels mounted in external pods, an auxiliary fuel control panel in the flight station, and the necessary plumbing and accessories to connect these components.

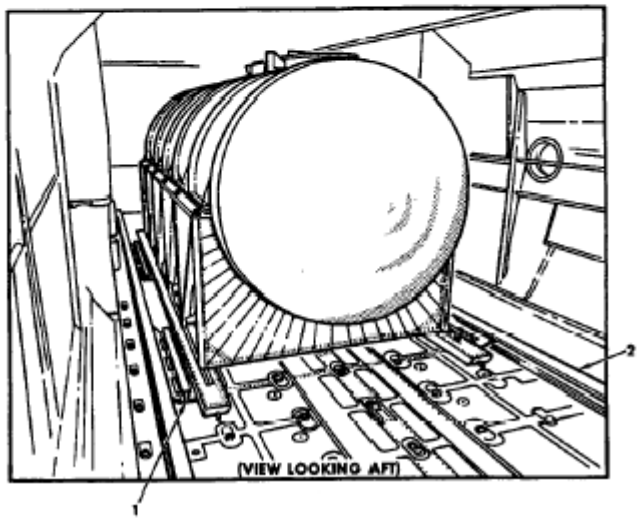
All inflight refueling fuel system controls are located on the auxiliary fuel control panel at the flight engineer station. The flight engineer station is connected by intercommunication circuits to two observer stations. The observer stations are located at the paratroop doors so that the observers may watch the refueling operation and report its progress to the flight engineer.

Fuel for transfer during inflight refueling is carried primarily in the fuselage tank. If additional fuel is needed, fuel can be transferred from the wing tanks into the fuselage tank and then to the receiver aircraft. Fuel also may be transferred directly from the wing tanks to the receiver aircraft, but this is normally done only when unable to refuel from the fuselage tank.

FUSELAGE TANK



1. ADAPTER PLATES (4 REQUIRED)
2. RESTRAINT RAIL



The fuselage tank with a capacity of 3,587 gallons of usable fuel, is mounted on, and secured by straps to a cradle which in turn is secured by adapter plates which lock into the siderails.

When refueling in flight, all except approximately 75 gallons of fuel can be transferred to receiver aircraft.

When operating the engines from the fuselage tank, all except approximately 5 gallons can be used. Tank refueling is accomplished through the single point refueling system and the fuel-level control valve installed in the tank.

Fuel for inflight refueling is pumped from the tank by two internally mounted electrically driven pumps rated at 300 gallons per minute. These two pumps discharge fuel into a common line through the tank aft access cover to the inflight refueling manifold. The inflight refueling pumps are used also for fuel dumping.

INFLIGHT REFUELING PODS

The two inflight refueling pods contain the hydraulically operated reels and associated plumbing. To facilitate extension and retraction of the hose, the pod is recessed to allow freedom of entry for the reception coupling and drogue.

This recessed port, located on the aft bottom of the pod, is designed to allow retraction of the drogue without interference between the paradrogue and the conical end of the pod.

AUXILIARY FUEL CONTROL PANEL.

Two two-position (ON, OFF) reel control POWER switches, one for each reel, are located on the auxiliary fuel control panel.

The POWER switch must be in the ON position in order to supply power to operate the reel fuel valves, the IFR pumps, and to trail the drogues.

Reel Control Switches

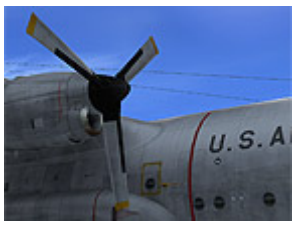
Two two-position (TRAIL, REWIND) reel control switches are located on the auxiliary fuel control panel. These switches are used to trail and rewind the drogues for normal operation. With the reel control POWER switches ON, the drogues will extend when the reel control switches am placed to TRAIL. The drogues will retract when the switches am placed to REWIND.

C-130A

The C-130A was the initial production model, with four Allison T56-A-11 or -9 turboprops. Conceptual studies of the C-130A, were initiated in 1951. The first prototype flight took place in 1954 and the first production flight followed on April 7, 1955. A total of 219 were ordered and the C-130A joined the U.S. Air Force inventory in December 1956. All special equipment was removable, permitting the aircraft to be used as freighters, assault transports, or ambulances. Early C-130A are now retired.

HOW IS THE 'C-130A' MODEL DIFFERENT FROM THE 'C-130E' MODEL

Three-Blade Propeller (Ext View)



Three-Blade Propeller (VC View)

Modified Windows

C.Mk1

The C-130K (L-382) is a C-130E with different engines, British comm/nav equipment, redesigned cargo floor, and tie down grid pattern (5 crew). This variant of the C130E was given the manufacturer's designation, somewhat confusingly, of C130K. In RAF service, they were designated Hercules C.Mk1. The first aircraft, XV177, was delivered to the RAF on 19th December 1966, followed throughout 1967 by delivery of a further 65 aircraft. The ALLISON T56A-15 engines mated to a Hamilton Standard Constant speed propeller power the RAF Hercules. This gives the aircraft a cruising speed of about 300 knots and a range of about 3000 nautical miles. XXIV Sqn used these aircraft mainly as strategic transport aircraft, typically operating legs of 2 to 8 hours in duration to and from airfields around the globe. The loads carried are diverse and range from weapons and ammunition to humanitarian aid.

HOW IS THE 'C.Mk1' MODEL DIFFERENT FROM THE 'C-130E' MODEL

Refueling Probe (Ext View)

Refueling Probe (VC)

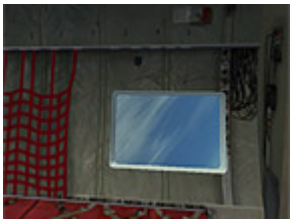
HC-130

The HC-130 Hercules is a long-range surveillance and transport aircraft that is used by USVG to perform search and rescue, enforcement of laws and treaties, illegal drug interdiction, marine environmental protection, military readiness, International Ice Patrol missions, as well as cargo and personnel transport.

HOW IS THE 'HC-130' MODEL DIFFERENT FROM THE 'C-130E' MODEL

Modified Cargo Cabin Windows

Modified Cargo Cabin Windows



DO NOT USE FOR FLIGHT

Extra Pack II

'C-130 X-PERIENCE' EXTRA PACK II PRODUCT

http://www.captainsim.com/products/c131/ep2/

EXTRA PACK II INSTALLATION WITHOUT C-130 BASE PACK

In this case the following limitations apply:

- Sound - Alias to default Beech King sound
- Panel - Alias to default B747 panel
- No VC
- No Base Pack features

MODELS AND LIVERIES

Upon installing the C-130 aircraft variations will appear under 'Lockheed' manufacturer, 'Captain Sim' publisher:

- C-130J-30 (stretched)
- C.Mk3 (stretched)
- C-130H
- C-130H French
- C-130H-30 (stretched)
- LC-130 (on skis)
- NC-130 (AEW&C)
- L-100
- AC-130 Gunship

AC-130

The AC-130 gunship's primary missions are close air support, air interdiction and force protection. Missions in close air support are troops in contact, convoy escort and urban operations. Air interdiction missions are conducted against preplanned targets or targets of opportunity. Force protection missions include air base defense and facilities defense.

These heavily armed aircraft incorporate side-firing weapons integrated with sophisticated sensor, navigation and fire control systems to provide surgical firepower or area saturation during extended loiter periods, at night and in adverse weather. The sensor suite consists of a television sensor, infrared sensor and radar. These sensors allow the gunship to visually or electronically identify friendly ground forces and targets any place, any time.

The AC-130E/H's call sign is 'Spectre'. The AC-130U's call sign is "Spooky" The U-model is the third generation of C-130 gunships.

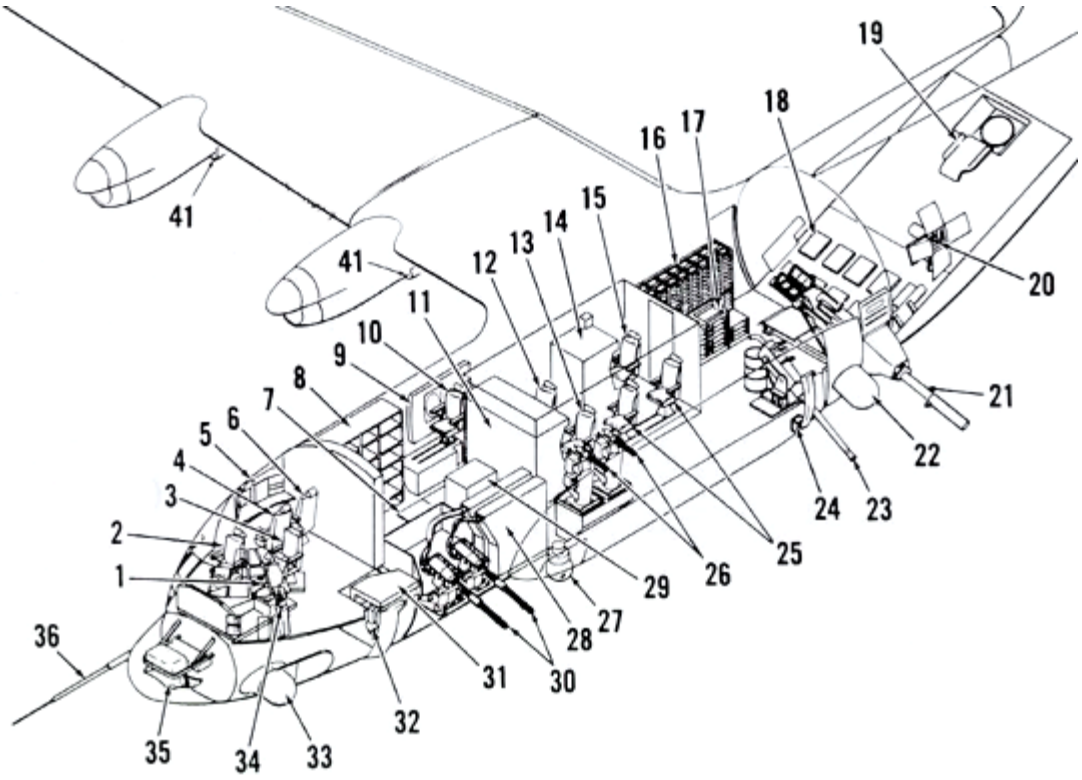
COMBAT HISTORY

- Vietnam war
- Operation 'Urgent Fury' in Grenada in 1983
- Operation 'Just Cause' in Panama in 1989
- Operation 'Desert Storm'
- Operations 'Continue Hope' and 'United Shield' in Somalia
- NATO ops in Bosnia-Herzegovina.
- Albania 1997
- Iraq 1998
- Operation 'Enduring Freedom'

General Characteristics:

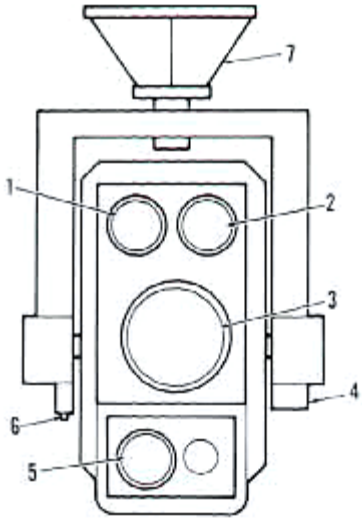
Primary Function: Close air support, air interdiction and force protection
Builder: Lockheed/Boeing Corp.
Power Plant: Four Allison T56-A-15 turboprop engines
Thrust: 4,910 shaft horsepower each engine
Length: 97 feet, 9 inches (29.8 meters)
Height: 38 feet, 6 inches (11.7 meters)
Wingspan: 132 feet, 7 inches (40.4 meters)
Speed: 300 mph (Mach .4) (at sea level)
Range: Approximately 1,300 nautical miles; unlimited with air refueling.
Ceiling: 25,000 feet (7,576 meters
Maximum Takeoff Weight: 155,000 pounds (69,750 kilograms)
Armament: AC-130H/U: 40mm cannon and 105mm cannon; **AC-130U:** 25mm gun
Crew: AC-130U - Five officers (pilot, co-pilot, navigator, fire control officer, electronic warfare officer) and eight enlisted (flight engineer, TV operator, infrared detection set operator, loadmaster, four aerial gunners)
Deployment Date: AC-130H, 1972; **AC-130U,** 1995
Unit Cost: AC-130E/H, $132.4 million; **AC-130U,** $190 million (fiscal 2001 constant dollars)
Inventory: Active duty: **AC-130H,** 8; **AC-130U,** 13; Reserve, 0; ANG, 0

GENERAL ARRANGEMENT



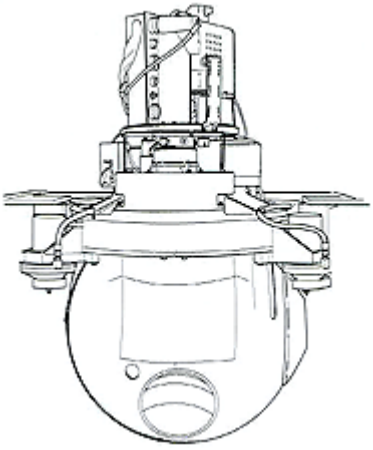
1. Pilot's Seat
2. Copilot's Seat
3. Flight Engineer
4. Navigator's Seat
5. Navigator and FCO Console
6. Fire Control Officer's Seat
7. Crash Seats
8. Cargo Comp. Electronics Equipment Rack
9. Scanner/Observer Window (Egress)
10. Scanner/Observer's Seat
11. IR and EWO Console
12. EWO's Seat
13. IR Operator's Seat
14. TV Console
15. TV Operator's Seat
16. 40 MM ammo Rack
17. 105 MM Ammo Rack (Aft)
18. Crash Seats
19. Illumination Operator Bench
20. 2kw Illuminator
21. 105 MM Gun
22. Beacon Tracking Radar
23. 40 MM Automatic Gun
24. ALE-20 Dispenser (2 Places)
25. Crew Rest Seats
26. 7.62 Miniguns
27. Infrared Reconnaissance Set
28. 20 MM ammo Rack
29. 105 MM Ammo Rack (Fwd)
30. 20 MM Guns
31. Flight Deck Extension
32. Multi-Sensor Platform (TV/Laser Platform)
33. Black Crow Randome
34. Pilot's Gunsight
35. APN-598 Radar
36. Pitot Static Boom
37. ECM Pods
38. SUU-42A/A Dispenser
39. Flare Launcher LAU-74A
40. 40KVA Illuminator Light Set
41. Infrared Shield

MULTI-SENSOR PLATFORM (TV/LASER PLATFORM)

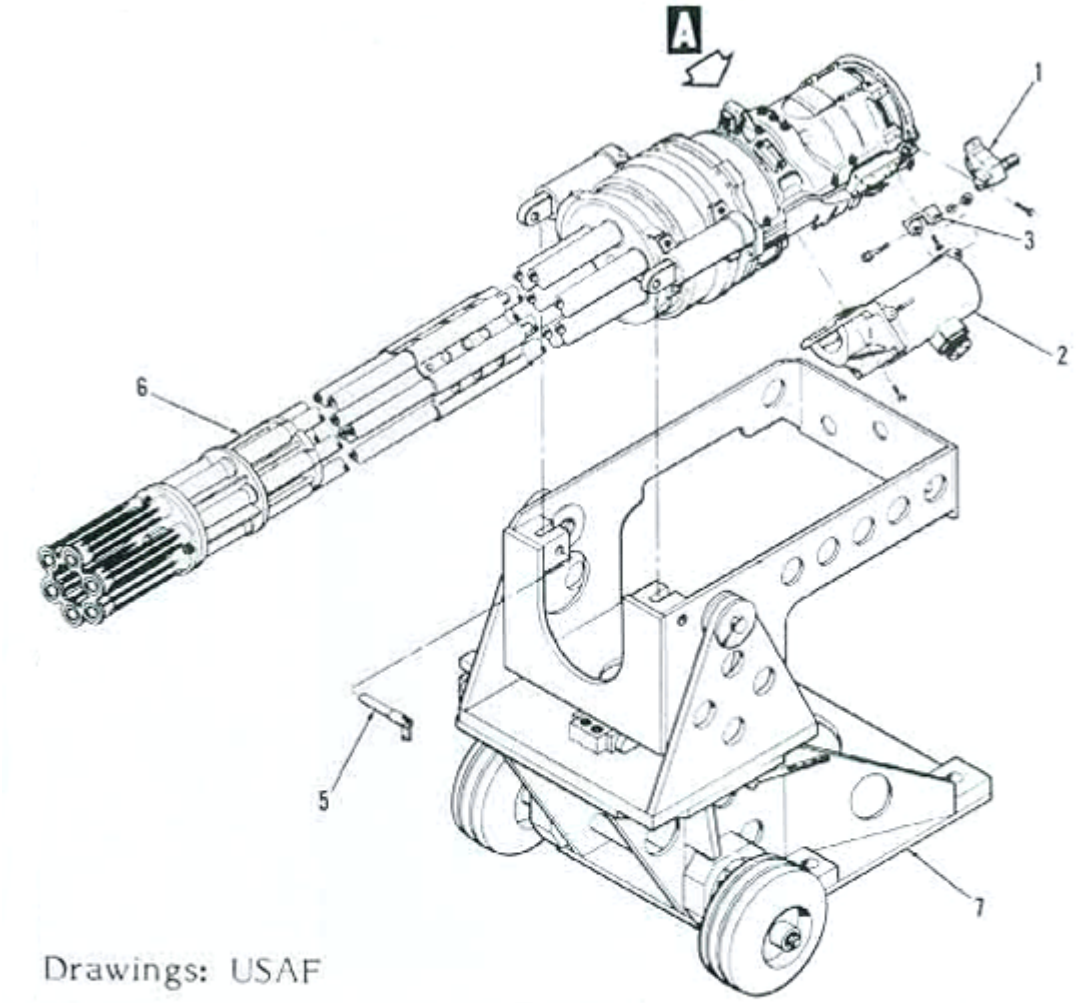


1. Wide Angle TV Lens
2. Laser Illuminator
3. Narrow Angle TV Lens
4. Elevation Dog Release
5. LTD/R
6. LN_2 Vent Port
7. Azimuth Dog Release

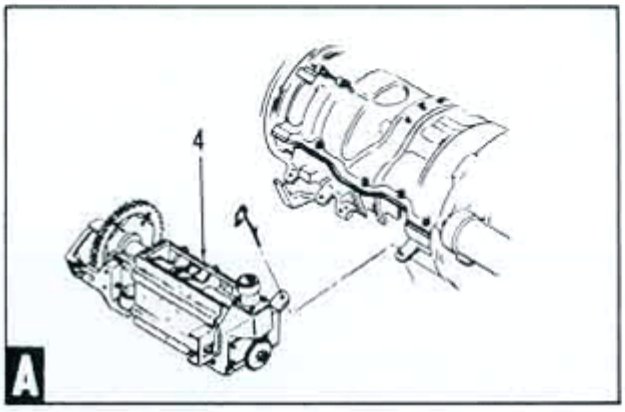
INFRARED DETECTING SET



20 MM GUNS (M61)

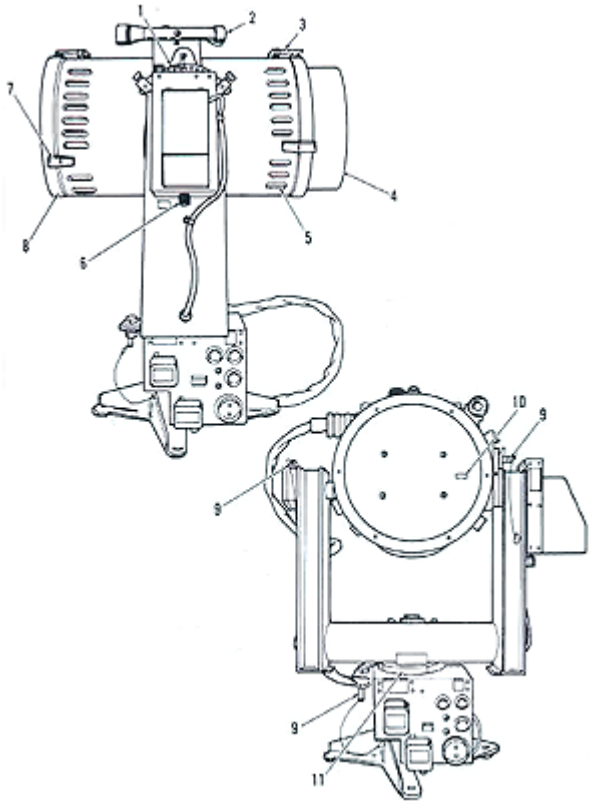


Drawings: USAF



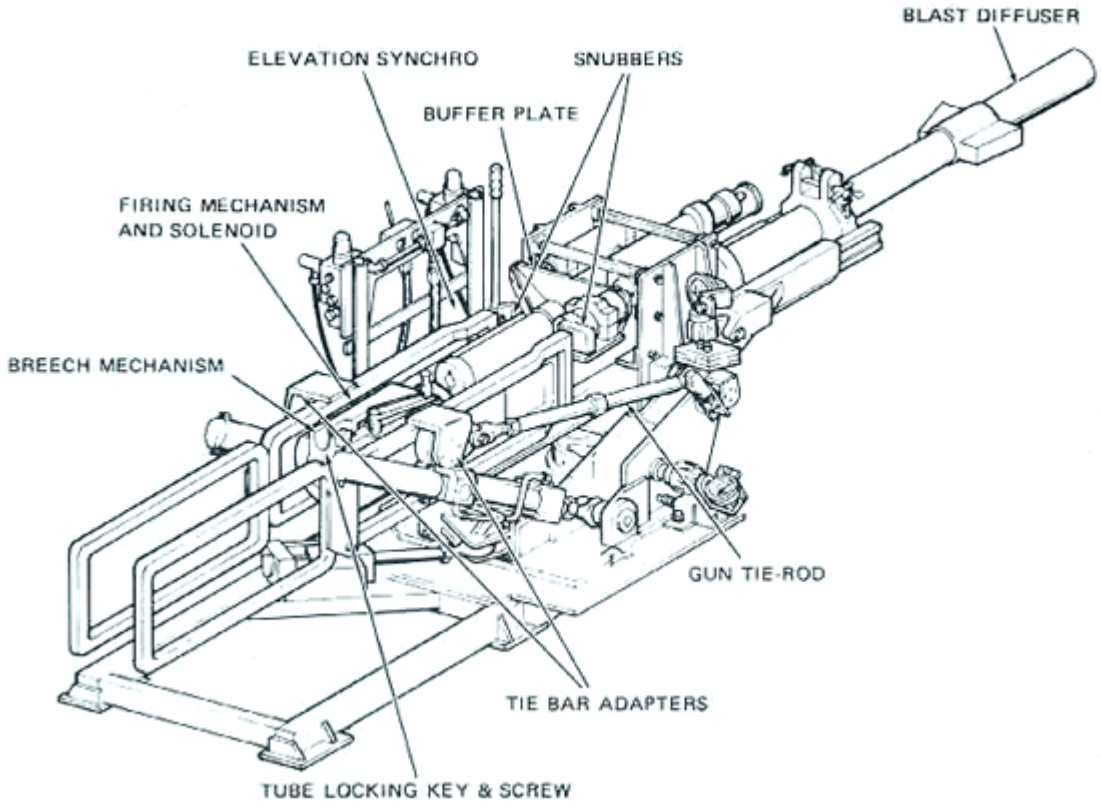
1. Actuator Booster Assembly
2. Gun Drive Assembly
3. Drive Motor Bracket
4. M2A1 Feeder Assembly
5. Quick Release Pin
6. 20 MM automatic Gun, M61
7. Gun Stand Assembly

2KW SEARCHLIGHT SYSTEM (AN/AVQ-17)

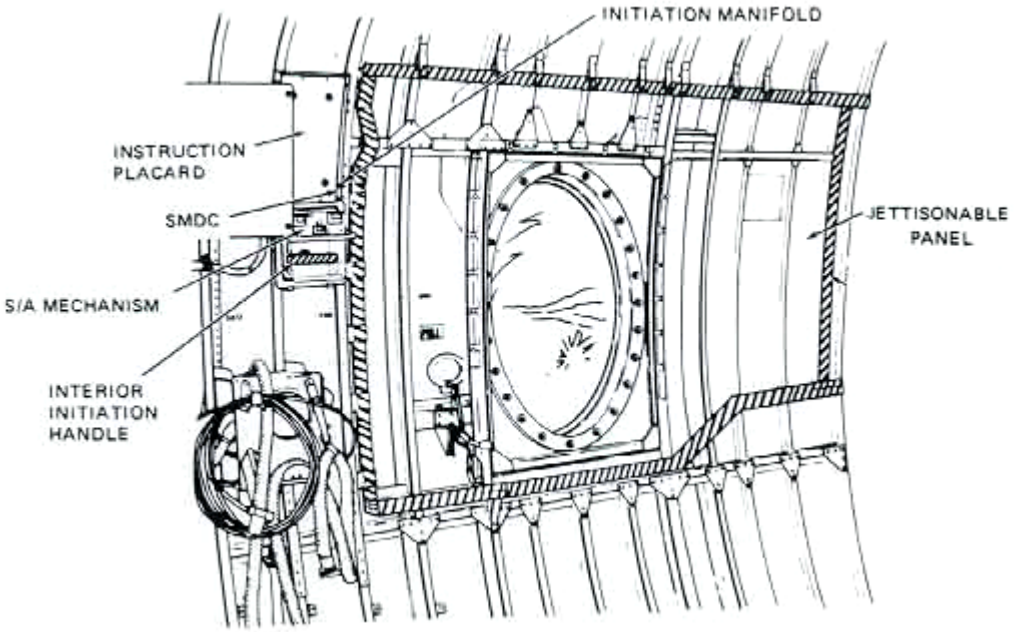


1. Elevation Index Plate
2. Telescope
3. Latch
4. IR Filter Assembly
5. Air Exhaust Duct
6. Gimbal Lock
7. Air Intake Duct
8. Visual Cover Assembly
9. Caging Lock Pin
10. Elapsed Time Indicator
11. Azimuth Index Plate

105 MM CANNON (M102)



EMERGENCY EQUIPMENT (TYPICAL)



HOW IS THE 'AC-130' MODEL DIFFERENT FROM THE 'C-130E' MODEL

EXTERIOR MODEL

2KW Illuminator

Animated 20MM Guns (2)

Animated 105MM Gun

Modified Aft Door Windows

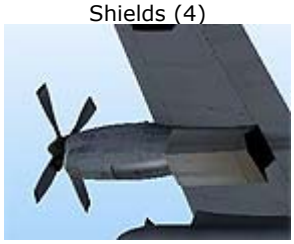
New Antennas (7)

Beacon Tracking Radar

Black Crow Radome

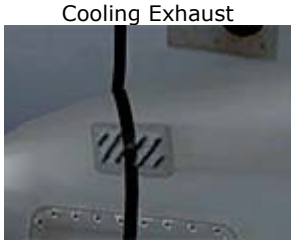
Infrared Reconnaissance Set

Removable Engine IR Shields (4)



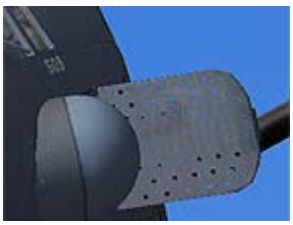
Reconnaissance Set Cooling Airintake

Reconnaissance Set Cooling Exhaust



Animated Multi-sensor Platform

Animated Radome Shield



Illuminator Operator Canopy

Pitot Static Booms (3)

DO NOT USE FOR FLIGHT

Minigun Loopholes (2)

Modified Animated Emergency Exit and Scanner/Observer Window

Consoles Operators Compartment

Animated 40MM Automatic Gun

40MM Brass Container

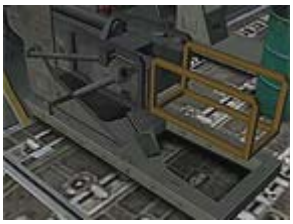
VIRTUAL COCKPIT (COMBAT DECK)

20MM Guns (2)

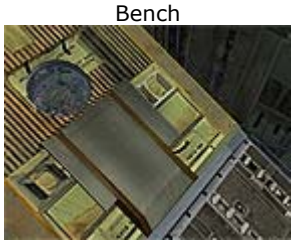
40MM Automatic Gun

Ammo Rack (FWD)

105MM Gun

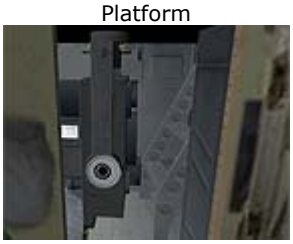


Illuminator Operator Bench



IR and EWO Console

Animated Multi-sensor Platform



Modified Emergency Exit

TV Console

DO NOT USE FOR FLIGHT

Cargo Compartment Rack

Scanner/Observer's Seat

EWO's Seat

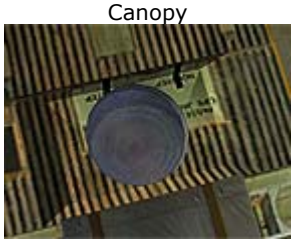
IR Operator Seat

Crew Rest Seats (2)

TV Operator Seat

Ammo Rack

Illuminator Operator Canopy



Scanner/Observer Window

Removable Engine IR Shields (4)

40MM Brass Container

Modified Aft Door Windows

C-130J-30

The C-130J-30 is the stretched version of the C-130J. The cargo floor length of the stretched version is increased from 40ft to 55ft which gives a significant increase in the aircraft's airlift capability.

The stretched C-130J-30 can carry eight 463L pallets, 97 litters, 24 CDS (US Container Delivery System) bundles, 128 equipped combat troops or 92 paratroopers.

The first C-130J-30 for the UK RAF was delivered in November 1999 and deliveries of all 15 aircraft ordered were completed in June 2001.

The aircraft is in production for the US Air Force (39 aircraft, the first of which was delivered to the Air National Guard in December 2001), the Royal Australian Air Force (12), the Italian Air Force (ten) and has been ordered by the Kuwaiti Air Force (four) and the Danish Air Force (three).

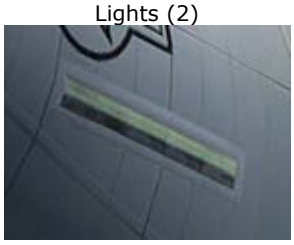
HOW IS THE 'C-130J-30' MODEL DIFFERENT FROM THE 'C-130E' MODEL

EXTERIOR MODEL

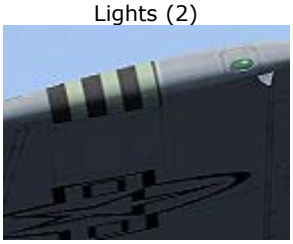
Fwd Fuselage Formation Lights (2)

6-blade Props

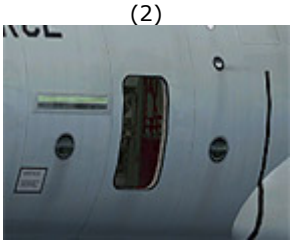
Aft Fuselage Formation Lights (2)



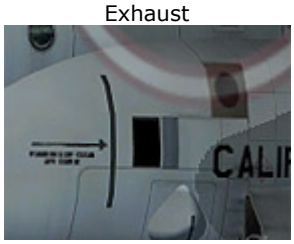
Wing Tips Formation Lights (2)



Modified Emergency Exit (2)



APU Inlet Door And Exhaust



Modified Aft Door Windows

Modified Windows (2)

Pitot (4)

Flight Deck Ac Air Intake And Exhaust Scoop

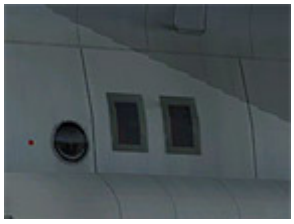
Cargo Compartment AC Air Inlet Scoop And Exhaust

Antennas (5)

Fin Radome

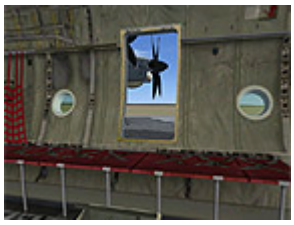
AE2100D3 Engines (4)

Modified Oil Cooler Flaps



VIRTUAL COCKPIT

Emergency exit doors (2)



C.Mk3

RAF Lyneham is currently the home to the entire RAF Hercules Force. Thirty of the original Hercules were converted to C.Mk.3 (C-130H-30) standard between 1980-1985. All of the C.Mk.3s are also modified with inflight-refueling probes.

HOW IS THE 'C.Mk3' MODEL DIFFERENT FROM THE 'C-130E' MODEL

Refueling probe
(Exterior view)

SKE Radome

New Antenna

VIRTUAL COCKPIT

Refueling probe
(Interior view)

C-130H

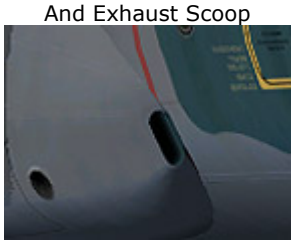
Similar to the E model, the C-130H has updated T56-A-T5 turboprops, a redesigned outer wing, updated avionics, and other minor improvements.

HOW IS THE 'C-130H' DIFFERENT FROM THE 'C-130E' MODEL

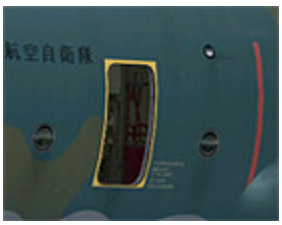
EXTERIOR MODEL

New Antennas

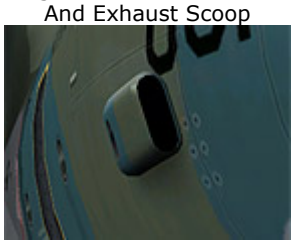
Flight Deck Ac Air Intake And Exhaust Scoop



Emergency exit doors (2)



Flight Deck Ac Air Intake And Exhaust Scoop



Pitot (4)

SKE Radome

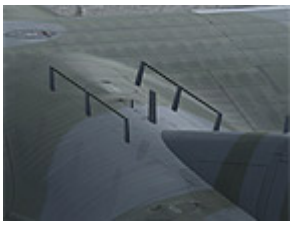
APU Exhaust Heat-Protection

APU Inlet Door And Exhaust

VIRTUAL COCKPIT

Emergency exit doors (2)

C-130H FRENCH VERSION



C-130H French version has additional antennas on the top of fuselage.

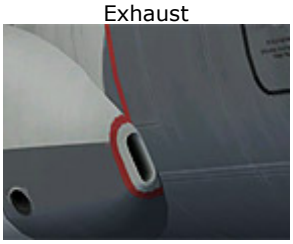
C-130H-30

The C-130H-30 is a stretched version of the original C-130H, achieved by inserting a 100-inch (2.54 m) plug aft of the cockpit and an 80-inch (2.03 m) plug at the rear of the fuselage.

HOW IS THE 'C-130H-30' MODEL DIFFERENT FROM THE 'C-130E' MODEL

EXTERIOR MODEL

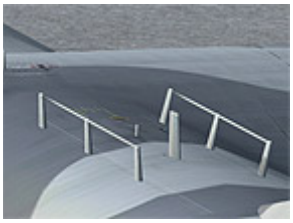
Cargo Compartment AC Air Inlet Scoop And Exhaust



Flight Deck Ac Air Intake And Exhaust Scoop

Pitot (4)

New Antennas



APU Inlet Door And Exhaust

Emergency exit doors (2)

VIRTUAL COCKPIT

Emergency exit doors (2)

LC-130

LC-130 airlift is necessary for the movement of personnel and cargo vital to the conduct of the US Antarctic Program's scientific research at international sites throughout the Antarctic continent including the United States Admunsen-Scott South Pole Station.

The standard C-130, on wheels only, first flew to Antarctica in late 1959. The C-130 Hercules (prototype first flown in August 1954, production model first flown in April 1955) has gone through many stages of development. The C-130H has four 4500-hp Allison turboprops, an MTW of 175,000 lb and a 300-knot cruising speed. Passenger amenities have remained at cattle-truck standards for over three decades.

The LC-130 is the largest aircraft to be fitted with retractable ski–wheels. The main skis are 20 ft (5.1 m) long and 5.5 ft (1.7 m) wide. The nose ski is 10 ft (3 m) long and 5.5 ft (1.7 m) wide. The complete ski set weighs 2.8 tons (2.5 tonne). With full bearing in soft snow, the contact pressure is about 4 lbf/in.2 (28 kPa). The original ski installation was first test-flown in 1957 and completed in 1958; twelve modified aircraft were delivered to the USAF in the first order. In its present form the C-130 ski–wheel modification is not a simple retrofit but rather a major modification of the gear and airframe. For aircraft bigger and faster than the C-130, ski modification seems unattractive and probably prohibitively expensive.

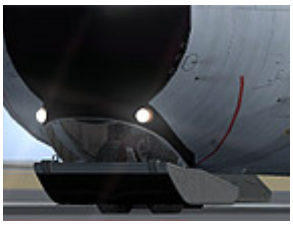
HOW IS THE 'LC-130' MODEL DIFFERENT FROM THE 'C-130E' MODEL

ATO Units (8)

Main Skis (2)

Modified Aft Door Windows

Nose Ski



Flight Deck Ac Air Intake And Exhaust Scoop

Cargo Compartment AC Air Inlet Scoop And Exhaust

APU Exhaust Heat-Protection

APU Inlet Door And Exhaust

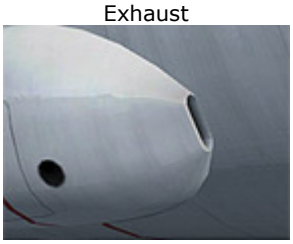
NC-130

HOW IS THE 'NC-130' MODEL DIFFERENT FROM THE 'C-130E' MODEL

EXTERIOR MODEL

Flight Deck Ac Air Intake And Exhaust Scoop

Cargo Compartment AC Air Inlet Scoop And Exhaust

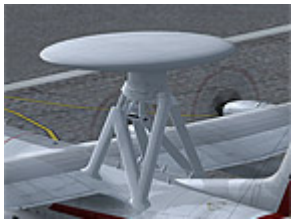


Modified Cargo Cabin Windows

Pitot (4)

APU Inlet Door And Exhaust

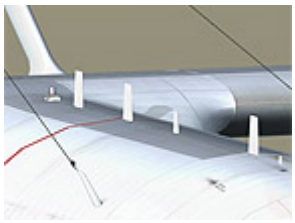
Radome



APU Inlet Door And Exhaust

APU Exhaust Heat-Protection

Number of New Antennas



DO NOT USE FOR FLIGHT

VIRTUAL COCKPIT

Modified Cargo Cabin Windows

L-100

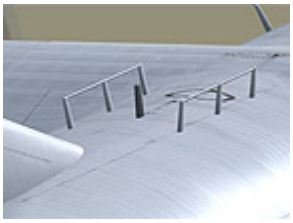
The Lockheed L-100 Hercules was the Lockheed Corporation's less successful civilian variant of the prolific C-130 military transport aircraft. Its first flight occurred in 1964 with certification the following year. Slow sales led to the development two new versions, the L-100-20 and L-100-30, both of which were larger and more economical than the original model. Total deliveries only amounted to 114, with production ending in 1992. In August 2006 a total of 39 Lockheed L-100 Hercules aircraft remain in airline service.

HOW IS THE 'L-100' MODEL DIFFERENT FROM THE 'C-130E' MODEL

EXTERIOR MODEL

Modified Windows

New Antennas



No Paratroop Doors

VIRTUAL COCKPIT

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