

F-50	Flight Deck Manual	(1)
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USE ONLY – NOT FOR REAL FLIGHT****

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Kim and Cameron Additional voices.
- VIDAR F. EGGEN** Editing of all sound files.
- GASTON ROCA** Pictures, checklists, video and detailed information about the Fokker 50 cockpit and ops.
- KJELL MATHISEN** Pictures, drawings, schematics, checklists, aircraft maintenance manual, ops pages and general information about the Fokker 50.
- INGVAR TRYGGVASON** Ops pages, checklists and detailed information about the Fokker 50 cockpit and ops.
- OYSTEIN EKER** Technical training manual for the Fokker 50.
- JEAN KREBS FONSECA** Detailed information about the Fokker 50 cockpit.
- ANDERS EKLO** Detailed information about the Fokker 50 cockpit.
- MORTEN BJONNES** Initial design and coding of the official website.
- PAULO MARCELO SOARES** Fokker 50 checklists.
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Front Cover Picture was taken using Thomas Diderich's Fokker 50 aircraft for FS98, file Fokk_50.zip.

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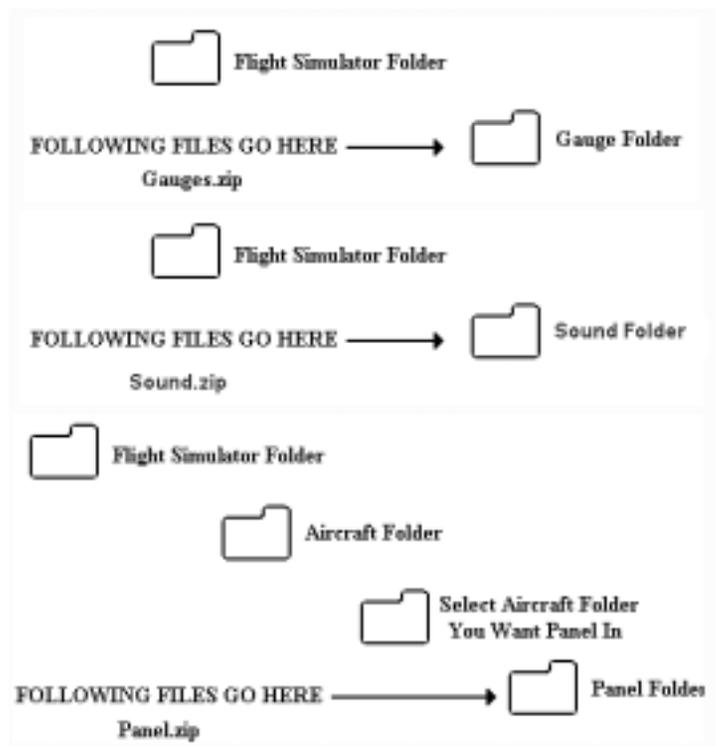


THE REAL FOKKER 50 FLIGHT DECK



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1. Open up the Gauges.zip and put all the gauge files into the main Flight Simulator Gauges directory.
2. Open up the Sound.zip and put all the files into the main Flight Simulator Sounds directory.
3. Open up the Panel.zip and put all the files into the Panel Directory



Please read the manual and check the homepage for FAQ at Fokker 50 Panel Project Homepage for problem solving:

<http://home.c2i.net/fokker50/>

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AND ALSO THANKS TO:

ANDREAS JAROS, for letting me borrow some of the sound files from his fantastic A320 panel.

UWE RADEMACHER, for converting this manual into pdf format

DIA GRIFFITHS, for writing "Gauge Creation Tutorial".

ARNE BARTELS, for writing "FS2000 Panel Designing Development Tips".

I highly recommend these two documents to all gauge coders.

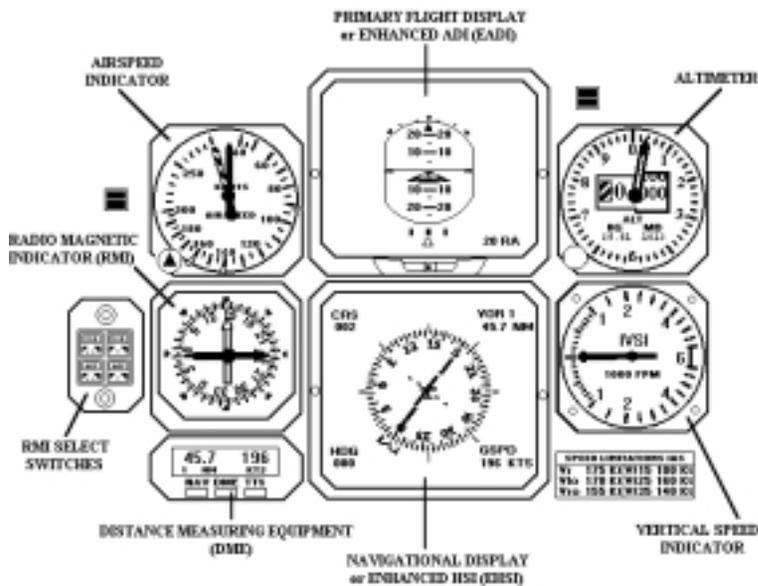
And finally, if there is anyone who I have forgotten please let me know ASAP and I will make sure you name is added.

Thanks for all you help,

Espen Oijordsbakken

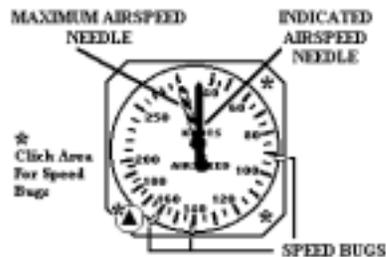


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AIRSPEED INDICATOR

Provides indicated airspeed (IAS) in knots.



MAXIMUM AIRSPEED NEEDLE (V_{mo})

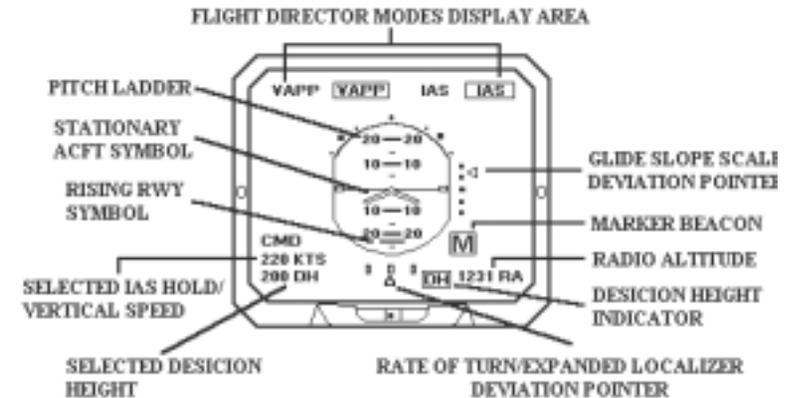
Shows the maximum airspeed allowed at various altitudes. Exceeding this airspeed will cause stress to the aircraft and possible loss of control.

SPEED BUGS

Plastic bugs that the pilot sets to remind him/her of various critical Airspeeds, such as V₁, V_R, V₂, etc. Use the mouse on the three Click areas (shown in diagram) to move the bugs around the gauge.

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PRIMARY FLIGHT DISPLAY (PFD) or ELECTRONIC ATTITUDE DIRECTOR INDICATOR (EADI)



Provides various indications that show the aircraft's present situation, dynamically, along with the various autopilot systems that may be in use in the flying of the aircraft.

CONSTANTLY DISPLAYED INDICATORS

- ATTITUDE SPHERE**
The attitude sphere is in the center of the display unit. The upper blue part represents the sky and the lower part represents the earth. The attitude sphere shows aircraft pitch and roll and moves in relation to the stationary aircraft symbol.
- AIRCRAFT SYMBOL**
An inverted V represents the stationary aircraft symbol, which stays in the center of the attitude sphere.
- PITCH SCALE and POINTER**
The scale shows 0 to 45 degrees of up and down pitch. Red chevrons show excessive attitude.
- ROLL SCALE AND POINTER**
A roll scale on the attitude sphere moves against a fixed roll scale. The scale shows up to 60 degrees of left and right roll.

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ON DEMAND/SYSTEM ACTIVATED DISPLAY INDICATORS

A. RADIO ALTIMETER (RA)

The RA is shown with four digits if the RA value is lower than 3500 feet above ground (AGL). The range of values is from 0-2500 feet. Increments are in fives below 200 feet and in tens above 200 feet.

B. DECISION HEIGHT (DH)

The DH is shown with three digits, values from 0 to 999 feet (as selected on the EFIS Control Panel) in 10 feet increments. If the RA value is less than 100 feet above DH, a white box is shown to the left of the RA value. When the RA is at or below DH the letters "DH" (amber) are shown inside the white box. The DH display is removed when the DH knob on the EFIS Control Panel is turned fully counter-clockwise.

C. FLIGHT DIRECTOR MODES (FD)

Armed and captured FD modes are displayed. Captured modes are displayed in green text. Armed modes are displayed in white text. A white box appears around a selected and captured mode for 5 seconds. This is to alert the pilot of a change in selected and captured flight modes.

D. MARKER BEACONS

The annunciators that can be displayed:

- "O" Outer Marker, Blue
- "M" Middle Marker, Orange
- "I" Inner Marker, white

IF an ILS (Instrument Landing System) frequency is tuned into NAV1 the marker beacon annunciators is shown inside a white box.

E. RISING RUNWAY SYMBOL

A yellow runway symbol is shown at and below 200 feet and touches the aircraft symbol at touchdown.

F. GLIDE SLOPE (GS) DEVIATION SCALE

When an ILS frequency is selected and the GS beam is intercepted a 4 dot GS scale is shown. A white pointer indicates deviation above and below the GS.

G. RATE OF TURN and EXPANDED LOCALIZER (LLZ) SCALE

Shows rate of turn at all times except when an ILS frequency is tuned, Then shows deviation from the LLZ centerline.

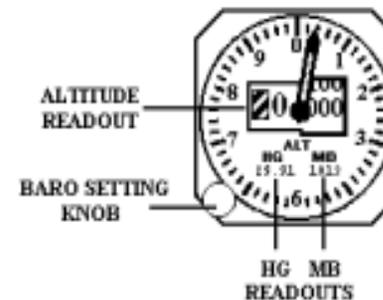
H. AIR DATA COMMAND DISPLAY

When the autopilot (AP) is active and Indicated Airspeed (IAS) is selected, the target IAS is shown. When Altitude Select Hold (ASEL) is selected in the AP, the vertical speed (VS) is shown in feet per minute.

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ALTIMETER

The Altimeter shows altitude data in relation to a selected pressure-datum (baro correction).



BARO SETTING KNOB

Sets the pressure condition (baro correction).

ALTITUDE READOUT

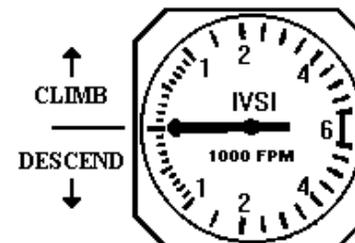
A dial and drum-counters shows the altitude. Readout is given in feet.

READOUTS HG MB

The pressure condition readouts are given in Hg (inches of mercury) and Mb (millibars).

VERTICAL SPEED INDICATOR

Shows vertical speed data. Shows how many feet per minute the aircraft is climbing or descending. Readout is given in 1000 feet per minute.



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FLIGHT DIRECTOR COMMAND (FD CMD)

An inverted V FD Command symbol is used to capture and hold the desired flight path as set on the Flight Mode Panel (FMP). The inverted V is visible when a AP mode is selected on the FMP. SBY mode removes the inverted V. The "FD CMD" push button on the EFIS Control Panel can be used to toggle the inverted V on or off regardless of flight modes set on the FMP. Note that the FD CMD is operated independently of the master AP switch.

STANDBY HORIZON

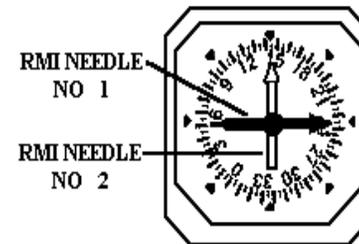
The Standby Horizon gives a visual indication of the aircraft attitude in pitch and Roll, relative to the horizon. The Standby Horizon is used, if there is a loss of Attitude information from the primary flight system.



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RADIO NAVIGATION INDICATOR – RMI

The RMI displays the magnetic bearings of selected VOR/ADF stations Together with the magnetic heading of the aircraft. ADF1/ADF2/VOR1/ VOR2 is available (note: ADF2 shows ADF1 bearing data due to the fact That FS only has one ADF).

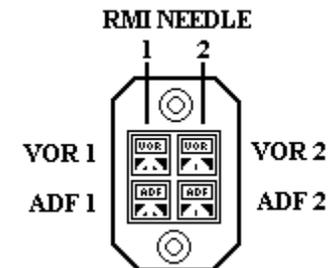


NOTE:

The VHF NAV unit must be turned on and supplying navigational data for the RMI to be able to display VOR bearings. And likewise for the ADF units when the RMI is selected to show ADF bearings.

RMI SELECT SWITCHES

The RMI Select Switches control the selection of VOR and ADF bearing data for each pointer (needle) of the RMI.



NOTE:

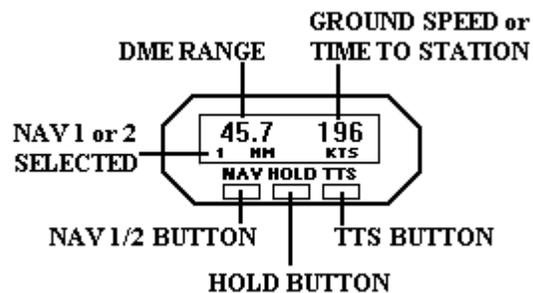
Due to limitation of MSFS only ADF1 and VOR1/VOR2 bearing data is supplied for the RMI pointers (needles). If you select ADF2 on the RMI Select Switches panel ADF1 bearing data is supplied.

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DISTANCE MEASURING EQUIPMENT – DME

The DME is used to measure the distance to the selected navigation station. The DME unit can also calculate ground speed and the time to reach the Selected navigation station.



The DME can display the following data:

- The distance between the aircraft and the selected navigation station. Output is given in nautical miles (NM).
- The ground speed (actually the relative speed between the aircraft and the navigation ground station). Output is given in knots (KTS).
- The flight time to go to the navigation station (Time to Station TTS). Output is given in minutes and seconds.

BUTTONS:

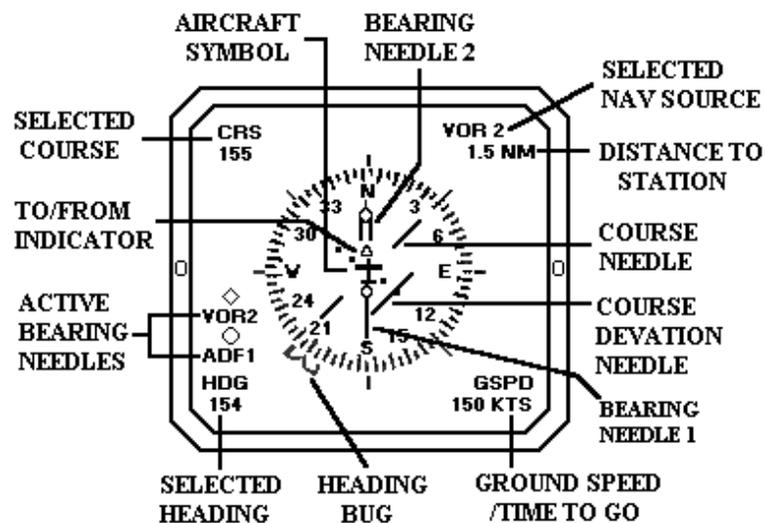
- NAV Switches selected ground station (NAV1 and NAV2)
- HOLD (Not operational)
- TTS Switches between ground speed and time to station TTS.

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NAVIGATIONAL DISPLAY (ND) or ELECTRONIC HORIZONTAL SITUATION INDICATOR – EHSI

ROSE MODE – ND/EHSI

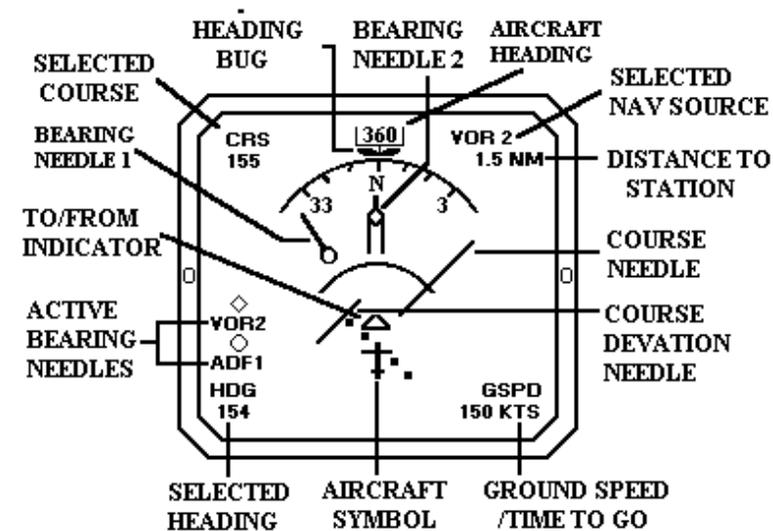


CONSTANTLY DISPLAYED INDICATORS

- AIRCRAFT SYMBOL**
The aircraft symbol shows the aircraft's position in relation to the selected course and heading.
- COMPASS ROSE**
The compass rose shows the magnetic heading of the aircraft.
- HEADING SELECT BUG**
The heading select bug shows the heading as selected on the Flight Mode Panel. A digital readout is shown in the lower left corner. The heading bug turns with the compass card.
- COURSE DEVIATION INDICATOR-SELECT COURSE POINTER-COURSE SELECT READOUT**
The yellow Select Course Pointer shows the selected course. A digital readout is shown in upper left hand corner. The Course Deviation Indicator shows the aircraft's deviation from the selected course. The CRS knob on the Flight Mode Panel controls the course pointer.

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ARC MODE – ND/EHSI



CONSTANTLY DISPLAYED INDICATORS

- COMPASS ARC**
The compass arc shows the magnetic heading of the aircraft.
- AIRCRAFT SYMBOL**
The AC symbol is shown in the middle of the display. It shows the aircraft's position in relation to the selected course and heading.
- HEADING SELECT BUG**
The bug shows the heading as selected on the Flight Mode Panel. A digital readout is shown in the lower left-hand corner. The heading bug turns with the compass card.
- COURSE DEVIATION INDICATOR – SELECT COURSE POINTER AND COURSE SELECT READOUT**
The yellow Select Course Pointer shows the selected course. A digital readout is shown in the upper right-hand corner. The course deviation indicator shows the aircraft's deviation from the selected course. The CRS knob on the Flight Mode Panel controls the course pointer.

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- E. **DISTANCE DISPLAY**
The distance display in the upper right-hand corner shows distance to the selected DME station.
- F. **NAVIGATION SOURCE ANNUNCIATOR**
The navigation source (VOR1/VOR2) is shown in white in the upper right-hand corner of the ND.
- G. **TO/FROM ANNUNCIATOR**
A small white arrowhead indicates if the aircraft is flying to or from the selected station.

ON DEMAND/SYSTEM ACTIVATED DISPLAY INDICATORS

- A. **GLIDE SLOPE DEVIATION**
When an ILS frequency is selected a 4-dot glide-slope scale is shown to the right of the compass card. A white pointer indicates deviation above and below the glide-slope.
- B. **BEARING POINTERS**
The bearing pointers show the direction to the selected source. Single and double pointers are used to show source 1 and 2 respectively. ADF1/ADF2/VOR1/VOR2 can be selected (ADF2 will show ADF1 bearing data). The source is selected from the EFIS Control Panel.
- C. **BEARING SOURCE ANNUNCIATOR**
Two symbols (a circle and a diamond) with an annunciator (VOR/ADF) is shown on the left-hand side of the screen when an active source is selected. ADF1/ADF2/VOR1/VOR2 is available (ADF2 will show ADF1 Bearing data).
- D. **GROUND SPEED/TIME-TO-GO**
The GSPD/TTG button on the EFIS Control Panel selects (alternatively) the annunciation of ground speed (KTS) or time-to-go (MIN). GSPD is calculated from the DME data. GSPD/TTG is displayed in the lower right hand corner of the screen. (Time-to-go is flight time to go to the ground station).

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- E. **DISTANCE DISPLAY**
The distance display in the upper right hand corner shows distance to the selected DME station.
- F. **NAVIGATION SOURCE ANNUNCIATOR**
The Navigation Source (VOR1/VOR2) is shown in white in the upper right hand corner of the ND.
- G. **TO/FROM ANNUNCIATOR**
A small red arrowhead indicator indicates if the aircraft is flying to or from the selected station.

ON DEMAND/SYSTEM ACTIVATED DISPLAY INDICATORS

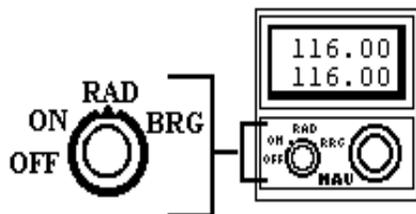
- A. **GLIDE SLOPE DEVIATION**
When an ILS frequency is selected a 4-dot glide-slope scale is shown to the right of the compass card. A white pointer indicators deviation above or below the glide-slope.
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- C. **BEARING SOURCE ANNUNCIATORS**
Two symbols (a circle and a diamond) with an annunciator (VOR, ADF) is shown on the left-hand side of the screen when an active source is selected. ADF/ADF2/VOR1/VOR2 is available (ADF2 will show ADF1 bearing data).
- D. **GROUND SPEED/TIME TO-GO**
The GSPD/TTG button on the EFIS Control Panel selects (alternatively) The annunciation of ground speed (KTS) or time-to-go (MIN). GSPD is calculated from the DME data. GSPD/TTG is displayed in the lower right hand corner of the screen. (Time-to go is flight time to go to the ground station).

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VHF NAV CONTROL PANEL

The VHF NAV Control Panel (CP) is used to select and show NAV frequencies. This panel has two VHF NAV CP units situated on top of each other. VHF NAV CP unit 1 is selected by pressing the "NAV 1" button on the EFIS Control Panel, and unit 2 is selected by pressing the "NAV 2" button on the EFIS Control Panel. The "ACT 1" or "ACT 2" signs shows which unit is currently selected.



The following description applies to both VHF NAV Control Panel units:

- A. A display shows the active and standby frequency, bearing and radial data.
- B. A transfer push button to make the standby frequency active.
- C. A four position rotary function selector switch.

OFF – The unit is turned off. In the OFF position no navigational data (VOR1/VOR2) is supplied to the RMI, DME or EHSI.

ON – The unit is on and navigational data is supplied. The active and standby frequency are displayed. Frequency range is 108.00 – 117.85 MHz.

RAD – When the unit is in Radial Mode the radial which the aircraft is currently on (to the turned station) is displayed on the lower half of the display.

BRG – When the unit is in Bearing Mode the bearing to the active station is displayed on the lower half of the display.

Only the standby frequency can be set directly. Click on the numbers to change the frequency. The active frequency is set by changing the standby frequency to the active frequency.

BFO – Basically the same as ADF Mode. BFO adds a beat Frequency that enables you to identify stations with an unmodulated carrier wave transmission (not simulated).

TST – In Test Mode the strength of the received signal is measured and displayed on the lower half of the display. L 00 means no signal is received. Normal range is L 10 – L 17 (with L 17 being the strongest).

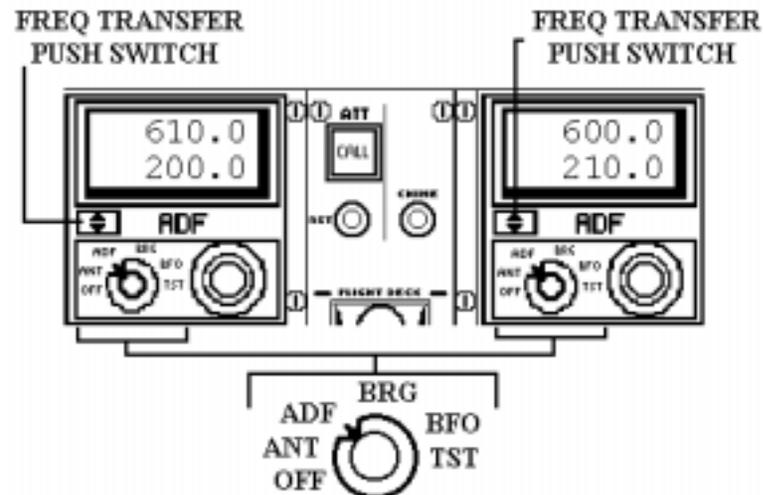
Only the standby frequency can be set directly. Click on the numbers to change the frequency. The active is set by changing the standby frequency to the active frequency.

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AUTOMATIC DIRECTION FINDING (ADF) CONTROL/ DISPLAY PANEL (CDP)

The ADF system gives bearing data of the ground stations that operate in the low and medium frequency range. There are two ADF CDP units installed in the F50 cockpit.



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The following description applies to both units:

- A. A display show active and standby frequency, bearing data and test data.
- B. A frequency-transfer push switch is used to change the standby frequency to the active frequency and opposite.
- C. A six-position rotary function selector switch:

OFF – In the OFF position power to the unit is removed.

ANT – the power is supplied to the ADF receiver and frequency selection is enabled. But no ADF data is supplied (to RMI and EHSI).

ADF – This is the standard ADF mode. ADF data is supplied.

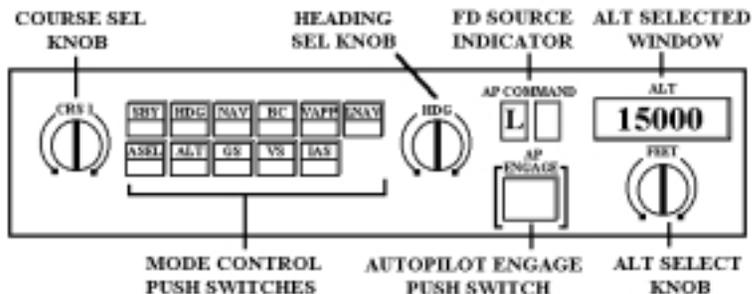
BRG – In Bearing Mode the bearing to the active station is displayed on the lower half of the display.

F-50	Flight Deck Manual	5-0 (25)
	AUTO FLIGHT	00.03.30

FLIGHT MODE PANEL (FMP)

The FMP is used to select and control:

- Flight Director (FD) modes, remote course and heading selection
- Autopilot (AP) engagement
- Altitude pre-selection
- Autopilot source left/right selection



FMP CONTROLS AND SWITCHES

MODE CONTROL PUSH SWITCHES:

SBY (Standby Mode)

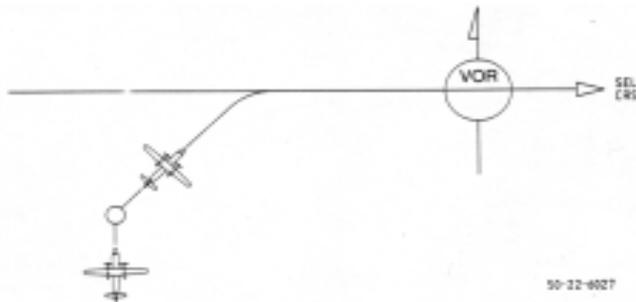
All other modes are cancelled.

HDG (Heading Mode)

The AP rolls the aircraft to turn it on to the selected heading. The selected heading is shown on the Navigational Display.

NAV (Navigation Mode)

The AP rolls the aircraft in order to capture the selected course to the VOR or the localizer center line for the station tuned in the Nav1 unit.



50-22-6027

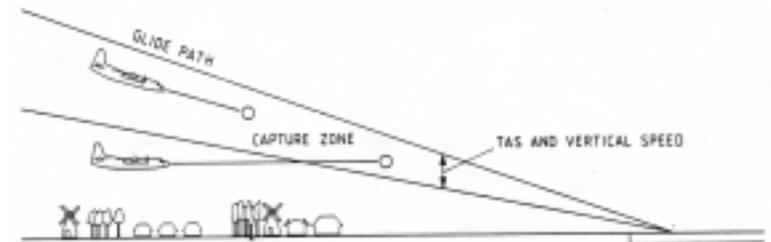
F-50	Flight Deck Manual	5-2 (27)
	AUTO FLIGHT	00.03.30

ALT (Altitude Hold Mode)

The AP gives pitch commands in order to capture the current Altitude of the aircraft.

GS (Glide-Slope Mode)

When GS is selected both GS and NAV is armed. The AP will Command roll and pitch in order to capture the glide-slope and Localizer of the station tuned into Nav 1.



VS (Vertical Speed Hold Mode)

The AP gives pitch commands in order to capture the current/selected vertical speed.

IAS (Indicated Airspeed Mode)

The AP gives pitch commands in order to capture the current/selected airspeed.

REMOTE DATUM SELECTION – CRS1 - HDG

The Heading (HDG) Control Knob sets the heading bug on the EHSI. Depending on which NAV source is selected on the EFIS Control Panel for the EHSI the Course (CRS1) Control Knob sets the course for NAV1 or NAV2. *NOTE: The real FMP has one knob for each NAV source.*

SOURCE LEFT AND RIGHT SELECTION – SOURCE L, SOURCE R

The Source L and Source R Switches select which Flight Director Computer (FDC) is connected to the AP. At least one of the FDC sources, left/right or both, need to be on for the AP to function.

F-50	Flight Deck Manual	5-3 (28)
	AUTO FLIGHT	00.03.30

AP ENGAGEMENT – AP ENGAGE

The AP Engage Control Switch controls the engagement of the AP system with the FDC.

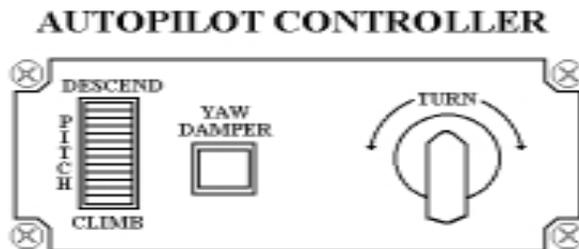
ALTITUDE ALERT CONTROL

The Altitude Select Control Knob is used to set the desired altitude for altitude capture in the ASEL mode.

AUTOPILOT CONTROLLER

The AP controllers task is to:

- control/select pitch for the aircraft.
- Control/select roll for the aircraft (*Not Used*)
- Engage the yaw damper



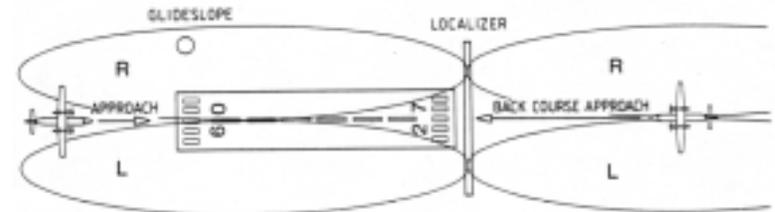
Clicking on the wheel will move the Pitch Wheel. When IAS Hold Mode is selected on the FMP the pitch wheel increases/decreases the IAS hold airspeed value. When ASEL Hold Mode is selected on the FMP the pitch wheel increases/decreases the vertical speed. The value of vertical speed (ft/min) or IAS input from the AP controller is displayed in the lower left corner of the EADI depending on which mode is active.

The Yaw Damper Engage Switch is turned on or off by clicking on the switch. When engaged, the white legend light of the switch comes on.

F-50	Flight Deck Manual	5-1 (26)
	AUTO FLIGHT	00.03.30

BC (Back-Course Mode)

The AP rolls the aircraft in order to capture the centerline of the localizer tuned in Nav 1. BC mode is used to approach the runway from the back side of the localizer.



V APP (VOR Approach Mode)

The AP rolls the aircraft in order to approach the runway/airport with signals from the local VOR station.

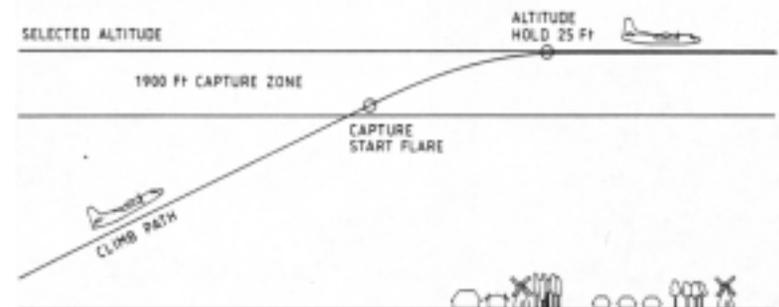


L NAV (Lateral Navigation Mode)

Not Used

ASEL (Altitude Pre-select Mode)

The AP gives pitch commands to the aircraft in order to capture the selected altitude. NOTE: ASEL will only level off the aircraft when the selected altitude has been reached. Another vertical AP mode, such as VS or IAS, must be selected in order to make the aircraft climb or descend to the desired altitude.



F-50	Flight Deck Manual	6-0 (29)
	COMMUNICATIONS	00.03.30

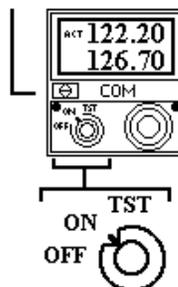
VERY HIGH FREQUENCY (VHF) COMMUNICATION (COMM)

The VHF COMM Control/Display Panel has a two-row LCD digital display. The upper display shows the active frequency and the lower display show the standby frequency. Only the standby frequency can be changed. Push the frequency-transfer push switch to transfer the standby frequency to the active frequency and opposite.

Both COMM CDP's are usable, however, both CDP's show the same active frequency as MSFS only has one COMM frequency.

The COMM CDP has a rotary switch to select ON, OFF or TST (test) mode. In test mode auto-squelch is turned off and

FREQ TRANSFER
PUSH SWITCH



AIR TRAFFIC CONTROL (ATC) CONTROL/DISPLAY PANEL

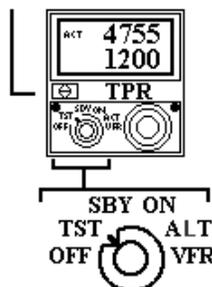
The ATC system transmits automatic coded responses to the radar station coded interrogators. This gives a coded identification to the radar return on the controller's screen.

The ATC CDP is used to select and control the transponder. Clicking on the numbers sets the transponder code. Code selection is from 0000 to 7777. Both ATC CPDs show the same active transponder code.

Each transponder can be operated in the following modes:

- OFF – transponder is turned off
- TST – Test mode, used to check the altitude which the transponder sends out when it is operated in the ALT mode
- SBY – transponder is in the standby mode, and code selection is possible. Note that you should always switch back to SBY mode when changing the code
- ON – transponder is turned on, and responds to radar station interrogation
- ALT – transponder is on and reporting altitude too when responding to radar station interrogation
- VFR – when selected this mode a standard VFR transponder code is set

FREQ TRANSFER
PUSH SWITCH



F-50	Flight Deck Manual	7-1 (31)
	ENGINES	00.03.30

* NI – low-pressure spool-speed indicator

ENGINE RPM INDICATOR
(N_L)



NOTES:

Nh gives readout of what is known in MSFS as "N1".
NI gives readout of what is known in MSFS as "N2".

Analogue readout is given in percentage on each gauge.

In the real Fokker 50:

Nh 100 % = 33300 rpm
NI 100 % = 27700 rpm

PROPELLER SPEED INDICATOR

PROPELLER SPEED INDICATOR



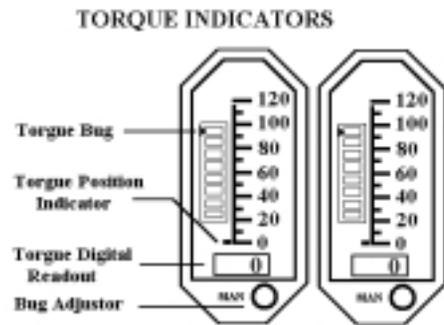
Analogue and digital readout is given in percentage.

F-50	Flight Deck Manual	7-2 (32)
	ENGINES	00.03.30

NOTES:

In the real Fokker 50 100 % propeller speed = 1200 rpm

TORQUE INDICATION



The Torque Indicator system gives continuous display of:

- The developed torque by the engine as indicated by the vertical torque tape and digital display
- The required torque setting (target torque), as indicated by the target torque bug. Target torque is calculated by the electronic engine control system based upon the selected engine rating mode (as selected on the Engine Rating Panel). Manual setting of the bug is not possible in this panel.

F-50	Flight Deck Manual	7-0 (30)
	ENGINES	00.03.30

INTER-TURBINE TEMPERATURE (ITT)

**INTER-TURBINE TEMPERATURE
(ITT)**



The ITT system is the indication system for the turbine gas temperature. The system measures the engine gas temperature at the station between the low pressure turbine and the high-pressure turbine inlet. Analog and digital readout is given in degrees centigrade.

NOTE: *In the real Fokker 50 the indicator shows information (temp) from a sensor, which is installed between the low-pressure and power turbines. A warning will be given when the temperature goes over 850 degrees Celsius.*

ENGINE RPM INDICATION

There are two sets of Engine RPM Indication gauges:

* Nh – high-pressure spool-speed indicator

**ENGINE RPM INDICATOR
(Nh)**



F-50	Flight Deck Manual	7-3 (33)
	ENGINES	00.03.30

OIL TEMPERATURE INDICATOR

OIL TEMPERATURE INDICATOR



The Oil Temperature Indicator shows the oil temperature in the engine. Temperature is given in degrees Celsius.

OIL PRESSURE INDICATOR

OIL PRESSURE INDICATOR



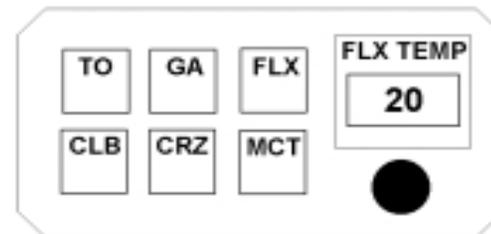
The Oil Pressure Indicator shows the oil pressure in the engine. Pressure is given in PSI (Pressure per square inch).

F-50	Flight Deck Manual	7-5 (35)
	ENGINE	00.03.30

ENGINE RATING PANEL

The Engine Rating Panel assist the pilot to make sure that the engines are being operated to their maximum efficiency, thus saving needless wear and tear on them and helps reduce fuel usage.

Description of the various buttons: (SHP=Shaft Horse Power)



- TO** Takeoff, used to set takeoff power (2250 SHP).
- GA** Go Around, sets the power required in the event of a missed approach or landing (2500 SHP).
- FLX** Flex, allows the pilots to set a temperature which allows for a lower power rating for takeoff, de-rated (2088-2250 SHP).
- CLB** Climb, sets the power setting for climb out after takeoff(2088 SHP).
- CRZ** Cruise, sets the cruise power when enroute (1725 SHP).
- MCT** Maximum Continuous Thrust, used when maximum power is required (2150 SHP).
- FLX TEMP** Allows pilots to manually set the temperature setting when using FLX (Flex) rating for takeoff.

Note: The performance values above are given as maximum values.

The engine rating unit calculates target torque setting based on selected engine rating mode, outside air temperature, altitude, airspeed and aircraft weight. The target torque setting is displayed on the torque gauges by the target torque bug.

The engine rating unit also gives commands to the Propeller Electronic Control Unit. When CLB mode or CRZ mode is selected propeller speed (Np) is set to 85%. For all other modes propeller speed is set to 100% (1200 RPM).

F-50	Flight Deck Manual	7-6 (36)
	ENGINES	00.03.30

GA mode is selected automatically upon touchdown. Approximately 16 seconds after touchdown, the TO mode is automatically selected, provided the aircraft is still on the ground.

FLX mode is usually used to make de-rated takeoffs in order to spare the engines.

FEATHERING OF PROPS

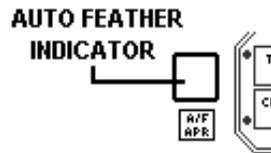
The propellers can be feathered automatically or manually.

MANUAL FEATHERING

The propeller is feathered manually when the fuel control lever is set to either SHUT or START.

AUTOMATIC FEATHERING

The annunciator light next to the Engine Rating Panel indicates the status of the auto feather system. The system can be inactive, standby or armed. The auto feather system is on standby when TO, GA or FLX is selected on the Engine Rating Panel, or when the landing gear is down, provided neither of the props are feathered. When in addition both power levers are set to TO and the actual torque values reach 50%, the system will be armed.

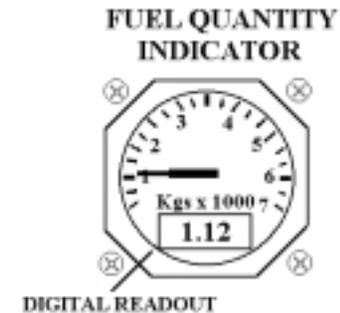


A propeller will be auto feathered when the auto feather system is armed and the actual engine torque drops below 25%. Auto feathering result in an up trim command of the remaining engine. The auto feathering system will be disarmed after feathering a prop.

The propeller feather pump status is indicated on the Propeller Control Panel on the overhead panel.

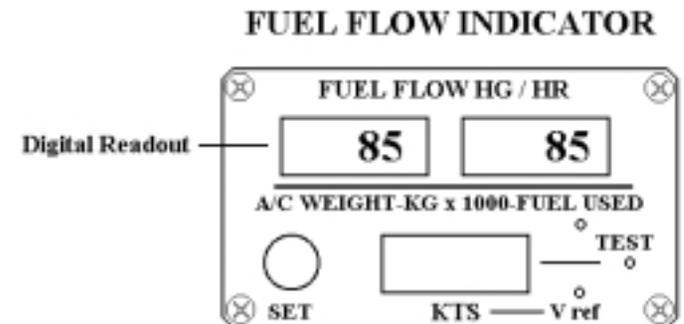
F-50	Flight Deck Manual	7-4 (34)
	ENGINES	00.03.30

FUEL QUANTITY INDICATOR



The Fuel Quantity Indicator shows the total fuel quantity of both main fuel tanks (left and right) and both collector tanks. Both analogue and digital readout is given in 1000 kg.

FUEL FLOW INDICATOR

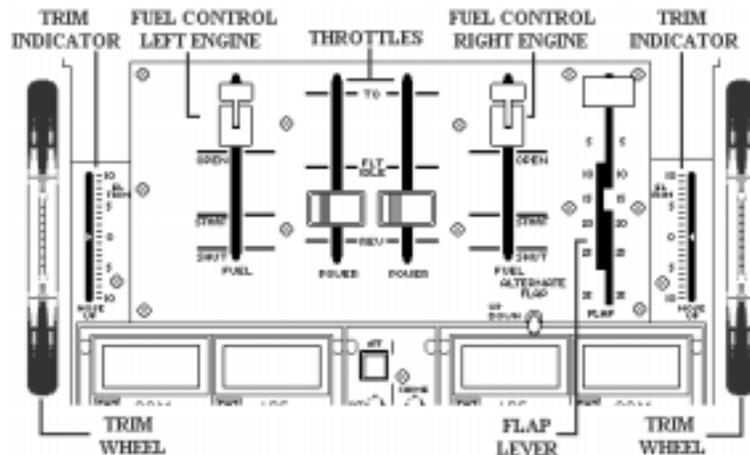


The Fuel Flow Indicator indicates how much fuel (Kg) is consumed per hour at the current throttle and engine settings.

F-50	Flight Deck Manual	7-7 (37)
	ENGINES	00.08.30

POWER CONTROL HANDLES/FUEL SHUT OFF LEVERS

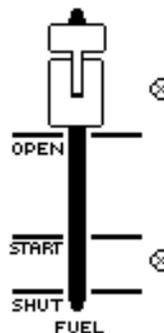
The Throttle Quadrant has both the Power Control Handles, or Throttles, for both the left and right engines. Also the Fuel Shut Off Levers, or Fuel Control Levers for both engines.



FUEL CONTROL LEVERS

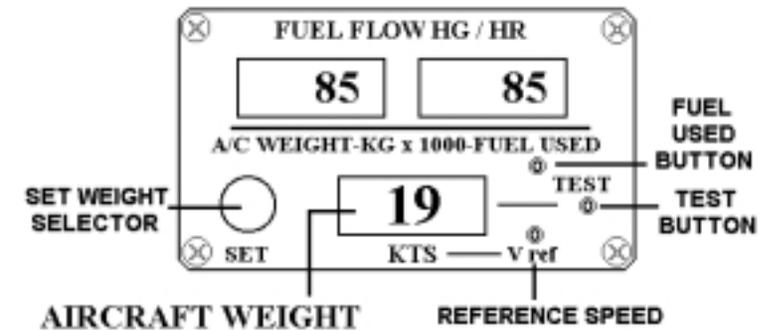
Allows for control of the fuel into each engine. There are three positions:

- SHUT** Fuel flow is stopped to engine.
- START** Is the initial position on engine startup. When engine reaches 20% Nh on startup, this is the position that the fuel control levers is moved to.
- OPEN** On startup when engine reaches 66% Nh, this is the position that the fuel lever is moved to and stays in until engine shutdown.



F-50	Flight Deck Manual	7-9 (39)
	ENGINES	00.08.30

AIRCRAFT WEIGHT INDICATOR/FUEL USED/VREF



On the lower part of the Fuel Flow Indicator Panel that are various important readouts available to the pilots. On initial startup the lower display displays dashes until the aircraft weight has been set using the Set Weight Selector. The Fuel Flow Displays will blank out until you have finished setting the aircraft weight.

The lower display can be operated in three modes using the three buttons to the right of the display:

- FUEL USED MODE:** will indicate how much fuel (tons) has been used this far. The display will switch back to the aircraft weight after 2 seconds.
- TEST MODE:** Will fill all the displays with "8"s. The display will switch back to aircraft weight after 3 seconds.
- REFERENCE SPEED (Vref):** Will show the reference speed for the aircraft at the current weight and flaps 25 set. The display will switch back to aircraft weight after 5 seconds.

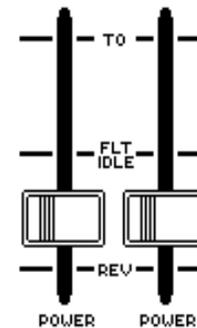
F-50	Flight Deck Manual	7-10 (40)
	ENGINES	00.03.30

	Flight Deck Manual	7-8 (38)
	ENGINES	00.08.30

POWER CONTROL LEVERS

Moving these levers increases or decreases engine thrust. Moving the levers forward increases thrust, moving the levers rearward decreases thrust.

Moving the levers fully rearward engages reverse pitch, which assists in slowing the aircraft down.



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F-50	Flight Deck Manual	8-0 (41)
	GPWS	00.03.30

GROUND PROXIMITY WARNING SYSTEM - GPWS

The GPWS monitors the flight profile. The system gives the crew visual and voice warnings when the aircraft's flight path and position, with respect to the terrain, need immediate attention from the crew. Warnings are given between altitudes of 50 feet and 2450 feet. There are different modes of operation, which monitor the different phases of flight.

GPWS PANEL



GPWS MODES

Mode 1 – Excessive Descent Rate

In this mode the computer compares the descent rate versus the radio altitude. When the descent rate is too high, the GPWS light flashes and the voice warning is “Sink Rate” and/or “Pull Up”.

Mode 2 – Terrain Closure Rate

In this mode the computer measures how fast the radio altitude decreases. When the terrain is too high for a certain radio altitude the GPWS light flashes and the voice warning is “Terrain” and/or “Pull Up”.

Mode 3 – Descent After Take-Off

In this mode the computer measures how much altitude the aircraft loses when the aircraft descends after take-off. When the altitude loss is too high, the GPWS light flashes and the voice warning is “Don’t Sink”.

Mode 4 – Terrain Proximity

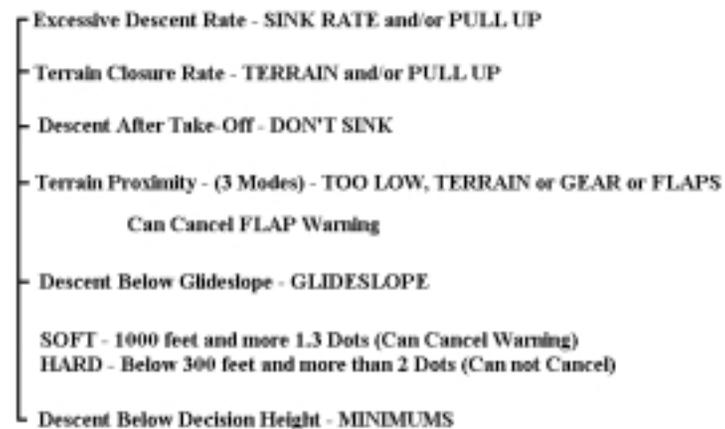
Mode 4-1 – In this mode the computer looks at aircraft altitude and airspeed. When the airspeed is high and the altitude is below 1000 feet, the GPWS light flashes and the voice warning is “Too Low, Terrain”.

Mode 4-2 – When the speed is below a certain value and the altitude is below 500 feet, the computer monitors if the landing gear is down. When not, the GPWS light flashes and the voice warning is “Too Low, Gear”.

F-50	Flight Deck Manual	8-2 (43)
	GPWS	00.03.30

GPWS Priority Chart

If two or more warnings occur at the same time, only the highest priority warning heard. If a higher priority warning occurs while another warning is heard, the higher priority warning takes precedence and it is heard immediately. Mode 1 has higher priority than Mode 2, Mode 2 has higher priority than Mode 3, etc.



F-50	Flight Deck Manual	8-3 (44)
	GPWS	00.03.30

	Flight Deck Manual	8-1 (42)
	GPWS	00.03.30

Mode 4-3 – When the landing gear is down and the altitude is below 200 feet, the computer monitors if the aircraft is making an approach with a flap position of less than 26.5 degrees (less than flap 25). If so, the GPWS light flashes and the voice warning is “Too Low, Flaps”. This mode can be canceled by turning on the Flap Override Switch on the GPWS Panel.

Mode 5 – Descent Below Glideslope

Below 1000 feet and during an ILS approach the computer monitors if the aircraft is too much under the glideslope. When the aircraft is, the GPWS and GS light flashes and the voice warning “Glideslope”. When the aircraft is below 1000 feet and more than 1.3 dots below the glideslope warning are SOFT. When the aircraft is below 300 feet and more than 2 dots below the glideslope warnings are HARD. The pilot can cancel soft warnings by pressing the GS Inhibit Switch on the GPWS panel. Hard Warnings can not be cancelled.

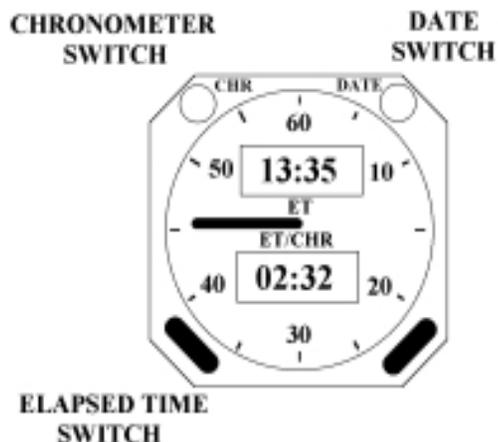
Mode 6 Descent Below Decision Height

When the aircraft is between 1000 feet and 50 feet and The landing gear is down, the computer monitors if the Radio altitude goes below the Decision Height set on the EFIS control panel. If so, the voice warning is “Minimums”.

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F-50	Flight Deck Manual	9-0 (45)
	CLOCK	00.03.30

DIGITAL CLOCK



The Digital Clock has two LED displays:

Upper Display – shows Greenwich Mean Time (GMT) in hours and minutes up to 23 hours and 59 minutes or the current date.

Lower Display – shows either elapsed time in hours and minutes up to 99 hours and 59 minutes or chronometer in minutes and seconds up to 99 minutes and 59 seconds.

The Digital Clock controls are:

Chronometer Switch – press to activate and toggle the modes of Of the chronometer. The first push activates and starts the Chronometer. The chronometer is displayed in the lower LED. The second push stops the chronometer. The third push de-Activates the chronometer and the lower display goes back to Showing elapsed time.

Date Switch – press to display the current date in the upper LED. The display will alternate in one second intervals between day/ Month and year.

Elapsed Time Switch – is used to reset, start and hold elapsed Time. Note that the clock will continue to keep track of elapsed Time even if the chronometer is activated in the lower display.

GMT Switch – (not used)

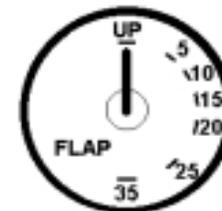
F-50	Flight Deck Manual	11-0 (47)
	FLIGHT CONTROLS	00.08.30

FLAP CONTROLS

The Flaps are used for takeoff and landing phases of flight. They provide the aircraft with a increased lift factor by making the air above the wing have to travel a longer distance, thus faster, to keep up with the air below the wing which has a much shorter distance. Causing the air above the wing to move faster causes a lower pressure then the slower moving air below the wing thus increasing lift.

FLAP INDICATOR

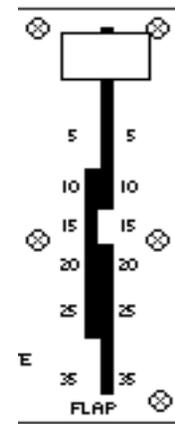
Shows the current flap setting as selected by the flap selector.



FLAP SELECTOR

The flap selector is located on the center pedestal. Moving the flap selector rearward moves the flaps through various degrees of settings. The flaps can be set to 5, 10, 15, 20, 25 or 35 degrees.

Up to 15 degrees can be used for normal takeoff and 25 or 35 used for normal landings.



ALTERNATE GEAR HANDLE

The alternate gear down handle is located on the far aft right hand side of the center pedestal (see overviews). This handle is used in case of a failure in the normal gear down system.

FLIGHT CONTROLS LOCK HANDLE

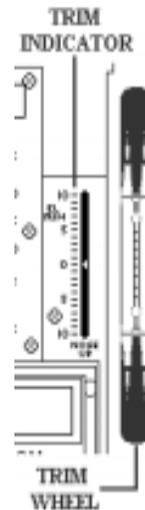
The flight controls lock handle is located on the far aft left side of the center pedestal (see overviews). This handle is used to lock the flight controls when the aircraft is maneuvering/parked on the ground, and unlock the flight controls when the aircraft is ready to get airborne. Note this handle has no effect in this panel if you are using a joystick/flight yoke to control the aircraft. This handle is only effective in this handle if you using a keyboard to control the aircraft.

F-50	Flight Deck Manual	11-1 (48)
	FLIGHT CONTROLS	00.08.30

TRIM CONTROLS AND INDICATORS

ELEVATOR TRIM

The Elevator Trim Controls and Indicator are located on the center pedestal. The Elevator Trim Indicator shows either positive or negative trim settings. Zero setting being the neutral trim setting. Moving the trim indicator down makes the nose of the aircraft rise (climb). Moving the trim indicator up cause the opposite to happen, the nose of the aircraft goes down (descends).

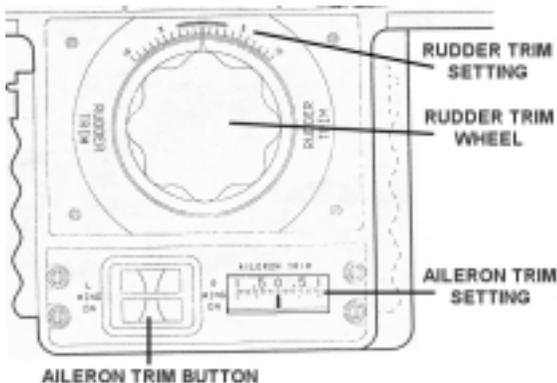


RUDDER TRIM

The Rudder Trim, located on the aft of the center pedestal (large control knob), is used to trim the control surface on the horizontal stabilizer. Turn the knob to the right to give right yaw input, and turn the knob to the left to give left yaw input. The needle just in front of the control wheel gives indication of the current setting.

AILERON TRIM

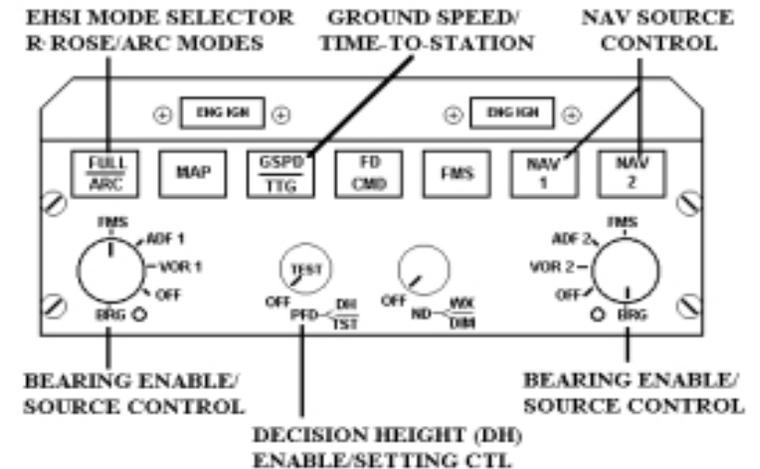
The Aileron Trim, located on the far aft of the center pedestal, is used to trim the control surfaces on the outer part of the wings. Trimming to the right gives a right roll input, and trimming to the left gives a left roll input.



F-50	Flight Deck Manual	10-0 (46)
		00.03.30

EFIS CONTROL PANEL

The EFIS (Electronic Flight Information System) Control Panel is used to change the various displayed information on the EADI and EHSI.



EHSI MODE SELECTOR – changes the EHSI mode between the rose or arc mode.

MAP – Not functional.

GSPD/TTG – changes between showing the aircraft's ground speed or the aircraft's time to go to the navaid (VOR) in minutes.

FD CMD – Toggles the Flight Director on and off.

FMS – Not functional.

NAV 1 – shows data for the tuned VOR 1 in the EHSI.

NAV 2 – shows data for the tuned VOR 2 in the EHSI.

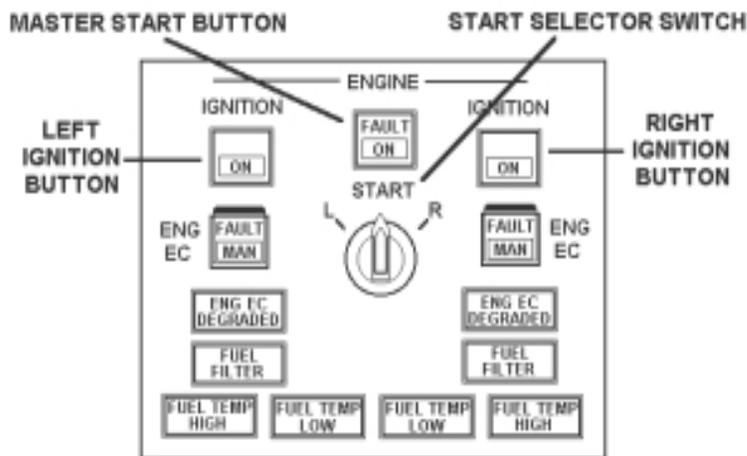
BEARING ENABLE/SOURCE CONTROL – shows a bearing to selected ADF/VOR. The one on the left is for ADF 1 or VOR 1, and the one on the right is for ADF 2 or VOR 2.

DECISION HEIGHT (DH) ENABLE – used to adjust the DH height shown in the EADI.

F-50	Flight Deck Manual	12-0 (49)
	OVERHEAD PANELS	00.08.30

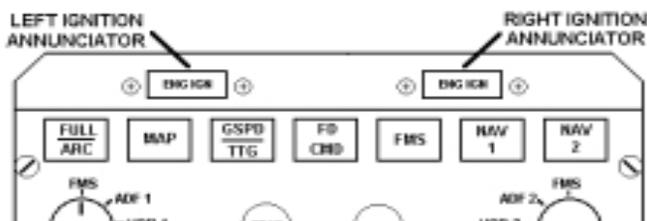
ENGINE START PANEL

The Engine Start Panel is used to start the two turbine engines. It also shows warnings associated with the engine's systems.



MASTER START BUTTON
Activates the startup system.

LEFT/RIGHT IGNITION BUTTON
Manually activates the secondary ignition system for the left or right engine depending on the button selected. Note that the annunciator located above the EFIS Control Panel will indicate that the ignition system for the left or right engine is active (both primary and/or secondary ignition system). The primary ignition system is operated automatically.

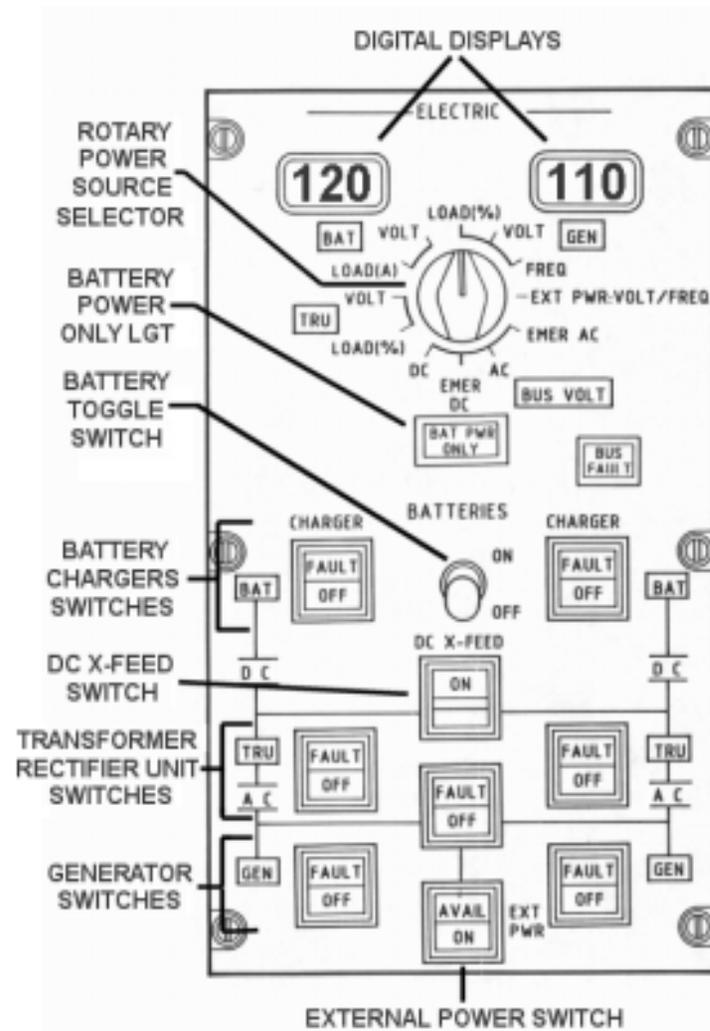


START SWITCH
Activates the starting motor which will make the high-pressure turbine (Nh) spool up. Turn the rotating Start Switch to the engine you wish to start, "L" (left) "R" (right). The Start Switch is spring loaded and will jump back into the center standby position.

F-50	Flight Deck Manual	12-2 (51)
	OVERHEAD PANELS	00.08.30

ELECTRICAL PANEL

All the electrically operated systems in the Fokker 50 are powered by an AC- and DC- system with two buses each. Both systems have multiple sources.



F-50	Flight Deck Manual	12-3 (52)
	OVERHEAD PANELS	00.08.30

AC SYSTEM

The AC system is powered by:

- two engine-driven integrated drive generators (IDG), one on each propeller gearbox or
- an AC ground power unit (external power)

All these sources supply 115/200V, 400 Hz, 3 phases. The IDG is a combined constant-speed drive (CSD) and generator. The CSD makes sure that the generator operates at a constant frequency over a wide range of different gearbox RPM's. Each IDG has a 40k VA rating.

The AC bus arrangement is split, i.e. an AC bus can only be supplied by one source at a time. When a source is inoperative, the AC bus is automatically transferred to another source.

DC SYSTEM

The DC system is supplied through buses by:

- two transformer-rectifier units (TRU) or
- two batteries (BAT)

The TRU's are supplied by an AC buses and supply 28V DC. Their rating is 300 A. The batteries are used as standby or emergency source. They supply 24V and have a 43 Ah rating. When the batteries are not in use they are being charged by the battery chargers.

The DC bus arrangement is normally split, however interconnection of the buses occurs:

- automatically during engine start, or
- after operation of the DC X-FEED push switch on the engine power control panel (EPCP).

ENGINE POWER CONTROL PANEL (EPCP)

All the controls for the electrical system are on the EPCP. The panel has the following controls and indicators:

BATTERIES TOGGLE SWITCH – switch on or off the battery supply

BAT CHARGE PUSH SWITCH – to switch on or off the battery charges and to show whether the charges are operating (no light) or not (white OFF light).

TRU PUSH SWITCH – to switch on or off the transformer rectifier units and to show whether the TRU's are operating (no light) or not (white OFF light).

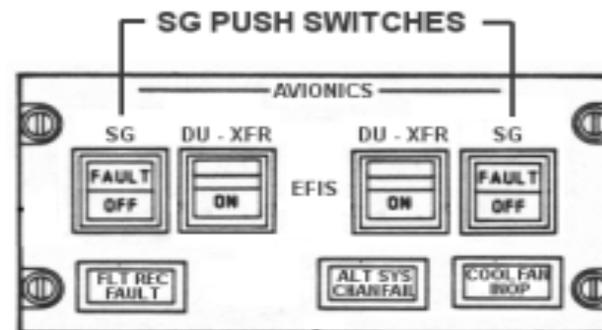
F-50	Flight Deck Manual	12-1 (50)
	OVERHEAD PANELS	00.08.30

ENGINE ELECTRONIC CONTROL PUSH BUTTONS (ENGINE EC)
Not available.

ENGINE START PANEL ANNUNCIATORS:
Not operational in this panel.

AVIONICS SWITCHING PANEL (ASP):

The ASP is used to control the Signal Generators (SG) that drives the EFIS system. There are two SGs installed, one for each EFIS. Each SG collect information from all the system connected to the EFIS system. The data is then processed before it is sent to the display units (DU) on the flight deck.



The ASP has the following controls and indicators:

- **SG PUSH SWITCHES** – to turn the SG on or off
- **DU-XFR PUSH SWITCHES** – to transfer the display from one DU to the other and select composite displays in case of DU failure. The DU-XFR switches are dummy switches in this panel
- None of the warning annunciator lights are operational in this panel

F-50	Flight Deck Manual	12-4 (53)
	OVERHEAD PANELS	00.08.30

GEN PUSH SWITCH – to switch on or off the engine driven IDG supply and to show whether the generators are operating (no light) or not (white OFF light).

EXT PWR PUSH SWITCH – to switch on or off the external power source and to show whether external power is available (white AVAIL light), switched on (white ON light) or not available at all (no light).

DC X-FEED PUSH SWITCH – to connect the two DC buses and to show whether they are connected (white bar) or not (no light).

AUTO AC X-FEED PUSH SWITCH – to switch the automatic AC bus transfer on or off and to show whether it is on (no light) or off (white OFF light).

BAT PWR ONLY LIGHT – to show that the battery power is the only electrical power source.

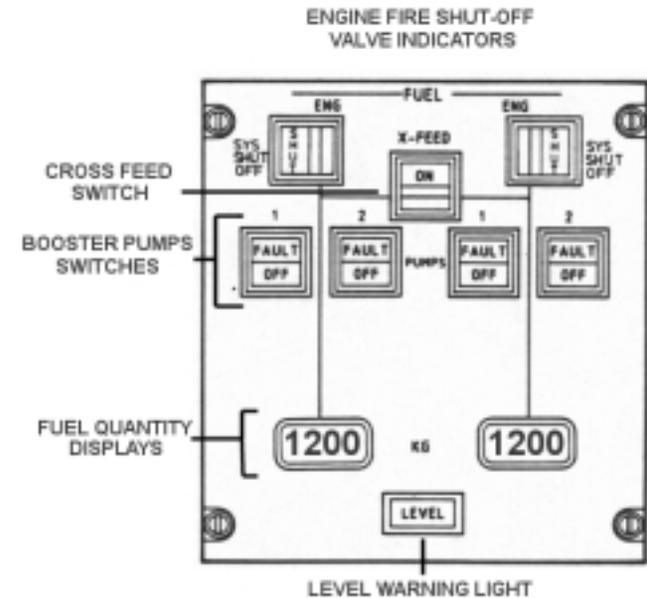
DIGITAL READOUT DISPLAYS – show voltage, frequency, current or load of the selected power source selected with the rotary power source selector switch.

BUS FAULT SIGN – not operative.

F-50	Flight Deck Manual	12-6 (55)
	OVERHEAD PANELS	00.08.30

FUEL PANEL

The Fokker 50 is equipped with two main wing tanks, one in each wing. The left hand side tank supplies the left engine and the right hand tank supplies the right engine. Cross feed is possible to supply two engines from one tank. Cross feed between the two tanks is not possible. Each main tank supply a collector tank by the engine, and the collector tank supply the booster pump, which makes sure the engine is feed fuel with the right pressure. The collector tanks are continuously kept full with fuel from the wing tanks.



The panel has the following controls and indicators:

ENGINE FIRE SHUT-OFF VALVE INDICATORS – (SYS SHUT OFF) indicate whether the shut-off valve is open (white bar) or closed (white SHUT sign). The shut-off valve is closed when the engine fire handle is pulled.

X-FEED PUSH SWITCH – is used to engage cross feed between the left and right hand side fuel supply system. The cross feed system is used to prevent asymmetry between the fuel tanks in case of single engine operation.

F-50	Flight Deck Manual	12-7 (56)
	OVERHEAD PANELS	00.08.30

PUMP PUSH SWITCHES – turn on or off the booster pumps. There are two booster pumps installed on each engine fuel system, however all the booster pumps are capable of supplying the fuel pressure needed for reliable operation of both engine alone. If all booster pumps malfunction or are turned off, the engine will still run but fuel supply is unreliable.

FUEL QUANTITY DISPLAYS – indicate the quantity of fuel in the corresponding wing tank and collector tank. When the wing tank is empty, “LO 40” (flashing) is displayed, meaning only 40 kg or less is left in the collector tank.

LEVEL WARNING LIGHT– indicates:

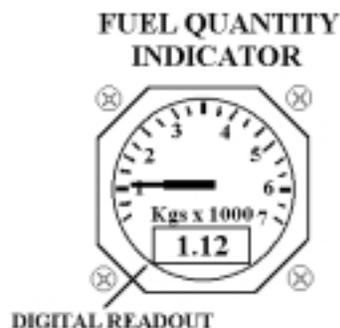
- fuel unbalanced between the main wing tanks of 250 kg or more
- fuel quantity in one wing tank drops below 200 kg

FUEL QUANTITY TOTALIZER

The fuel quantity totalizer indicates the total amount of fuel left in both main wing tanks and the collector tanks. Fuel capacity:

- Main tanks: 1990 kg in each tank
- Collector tanks: 40 kg in each tank
- Total fuel capacity: 4060 kg

The Fuel Quantity Totalizer is located on the main panel just above the flap gauge.



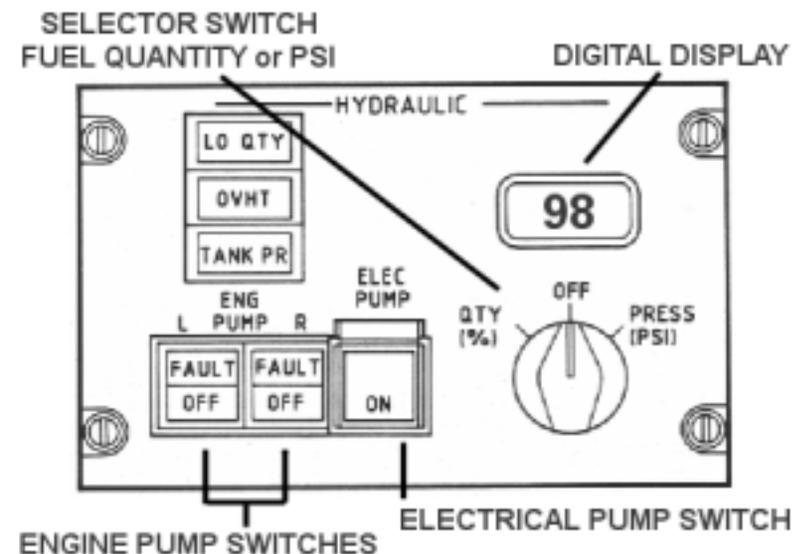
F-50	Flight Deck Manual	12-5 (54)
	OVERHEAD PANELS	00.08.30

HYDRAULIC PANEL

Hydraulic power is supplied from two engine driven pumps for normal operation and an electrical pump for maintenance or emergency situations. The hydraulic system supplies pressure at around 3000 PSI to operate:

- the flaps
- the landing gear and nose wheel steering
- the brakes
- the alternate brakes

These are the following controls and indicators:



L and R ENGINE PUMP PUSH SWITCHES – to switch on or off the relevant engine pump

GUARDED ELECTRICAL PUMP PUSH SWITCH – to switch on or off the electrical pump

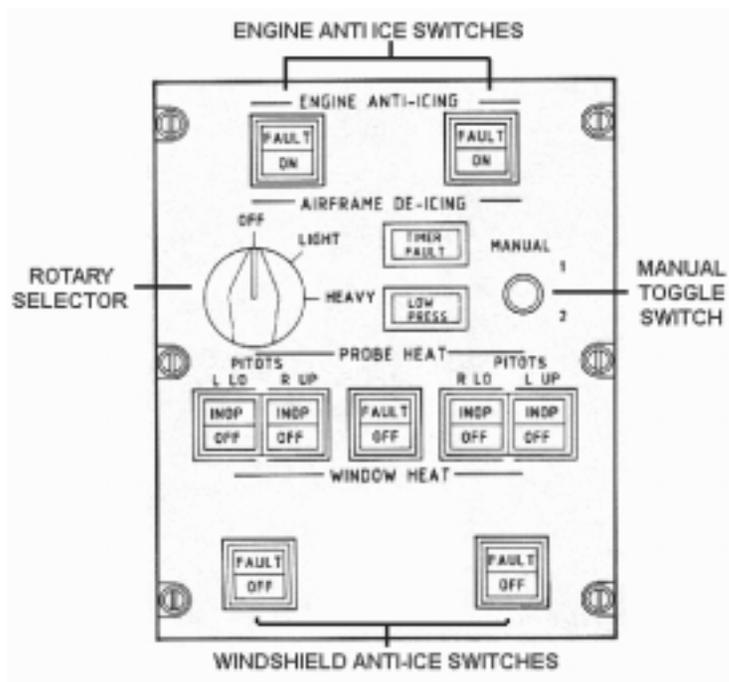
DIGITAL DISPLAY – shows either the hydraulic fluid quantity(%) or the system pressure (PSI)

SELECTOR SWITCH – rotate to display either the PSI or Quantity (%) in the digital display

F-50	Flight Deck Manual	12-8 (57)
	OVERHEAD PANELS	00.08.30

ICE PROTECTION PANEL

To make sure that the Fokker 50 can be controlled in icing conditions, the leading edges of wings, vertical and horizontal stabilizers are de-iced. Rubber de-icing boots are inflated with air from the bleed-air supply system. The boots have the best performance when the ice layer has a thickness of 6 mm (0.25 in) or more. The airflow removes the cracked ice.



The controls of the airframe de-icing system are on the AIRFRAME DE-ICING part of the ice protection control panel. There are the following controls:

ROTARY SWITCH – for automatic operation, three positions: Heavy, Light and Off.

- Heavy = boots are inflated/deflated once every minute
- Light = boots are inflated/deflated once every four minutes

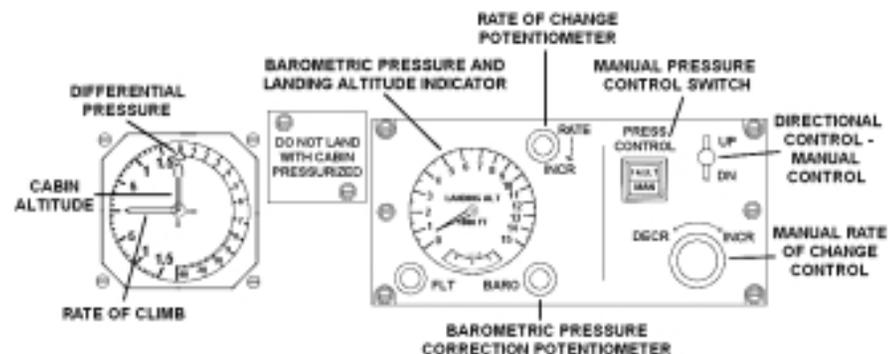
MANUAL TOGGLE SWITCH – to operate the system manually. Position “1” inflates 50% of the boots on each wing, position “2” inflates the other 50%.

(Annunciators are not operative)

F-50	Flight Deck Manual	12-10 (59)
	OVERHEAD PANELS	00.08.30

PRESSURIZATION PANEL

The pressurization panel is divided into two areas, the Cabin Pressure Selectors and Cabin Pressure Indicator.



On the Cabin Pressure Selectors area you will find the following components:

BAROMETRIC PRESSURE/LANDING ALTITUDE INDICATOR – shows the current barometric pressure along with the selected landing altitude.

LANDING ALTITUDE POTENTIOMETER – is used to set the desired landing altitude.

BAROMETRIC PRESSURE CORRECTION POTENTIOMETER – used to correct the barometric pressure reading.

PRESSURE CONTROL SWITCH – used to select manual control over the cabin pressure system.

DIRECTIONAL CONTROL – for selecting increased (UP) or decrease (DN) cabin pressure when manual control is selected.

MANUAL RATE OF CHANGE CONTROL – used to select the rate of change manually.

On the Cabin Pressure Indicator indicates the current state of the cabin pressurization. The Cabin Pressurization indicates:

CABIN ALTITUDE – (as equivalent to the cabin pressure) is given in feet x 1000.

F-50	Flight Deck Manual	12-11 (60)
	OVERHEAD PANELS	00.08.30

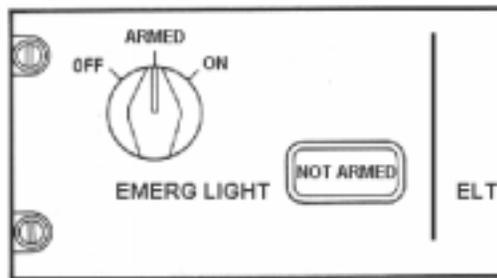
DIFFERENTIAL PRESSURE – the difference between the cabin and ambient pressure, given in PSI (Pressure per Square Inch).

RATE OF CLIMB – the rate at which the cabin altitude goes up or down, given in feet per minute x 1000.

EMERGENCY LIGHT PANEL

The Emergency Lighting has two functions:

- In flight, to make sure that some interior lighting is always available
- On the ground, to make sure some interior and exterior lighting is available during evacuation with no electrical power



The Emergency Lighting Control Panel has the following controls and indicators:

THREE WAY ROTARY SWITCH (EMERG LIGHT)

- **OFF** – puts the emergency lighting system off
- **ARMED** – makes the emergency lighting system ready to come on in case of a complete electrical failure
- **ON** – puts the emergency lighting system on

NOT ARMED INDICATOR – shows when the system is not in the armed condition

The Emergency Light Control Panel also has the Emergency Locator Transmitter (ELT) guarded push switch. This switch is used to turn on the ELT manually.

F-50	Flight Deck Manual	12-9 (58)
	OVERHEAD PANELS	00.08.30

Propellers, spinners and engine air-intakes are electrically heated to remove ice and to prevent ice from forming.

The controls of the system are on the **ENGINE ANTI_icing** part of the ice protection control panel. The push switches on this panel are normally off (no light). When the switch is pushed, a blue ON light appears.

Pitot, static ports and angle of attack vane heating is controlled from the **PROBE HEAT** part of the ice protection panel with push switches. Under normal operation all the probe heaters are on (no light).

The windshields are heated electrically. Apart from anti-icing other advantages are:

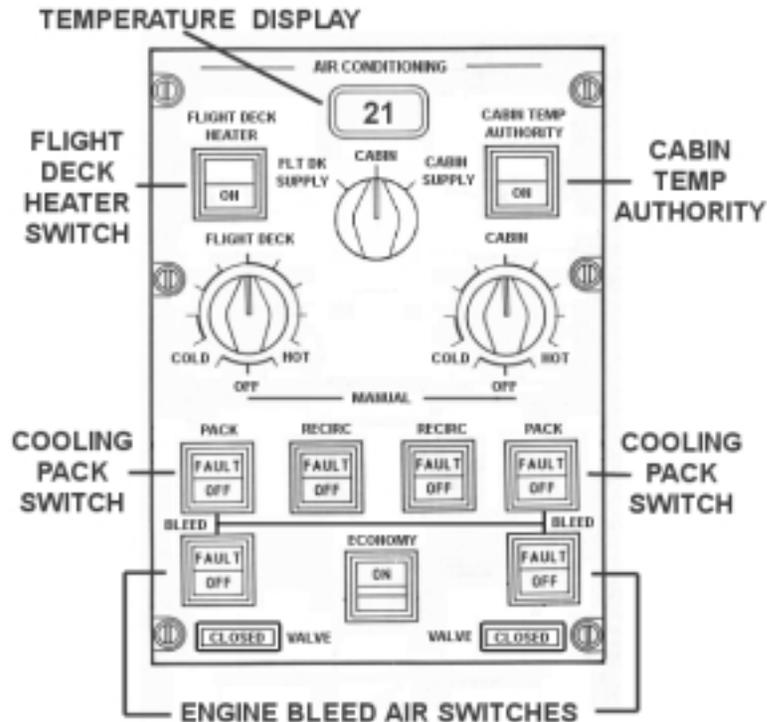
- a higher resistance to impact of objects
- a better discharge of static electricity
- a longer service life

The heating is controlled from the **WINDOW HEAT** part of the ice protection control panel with the push switches.

F-50	Flight Deck Manual	12-12 (61)
	OVERHEAD PANELS	00.08.30

AIR CONDITIONING PANEL

The Air Conditioning Control Panel controls the temperature of the air in the cabin and on the flight deck.



The following controls are on this panel:

FLIGHT DECK HEATER – this is an extra heater system for the flight deck. Only needed for very cold days.

TEMPERATURE DISPLAY – digital display shows the actual temperature in the selected compartment or supply duct (flight deck/cabin/cabin supply valve), which is selected with the rotary selector just below the temperature display. Temperature readout is given in degrees Celsius.

F-50	Flight Deck Manual	12-14 (63)
	OVERHEAD PANELS	00.08.30

AUTOMATIC MODE – With the temperature control rotary switch you can set the system to hold and maintain a set target temperature. Target temperature range is from 15 deg. C (switch in the 8 o'clock position) to 27 deg. C (switch in the 4 o'clock position).

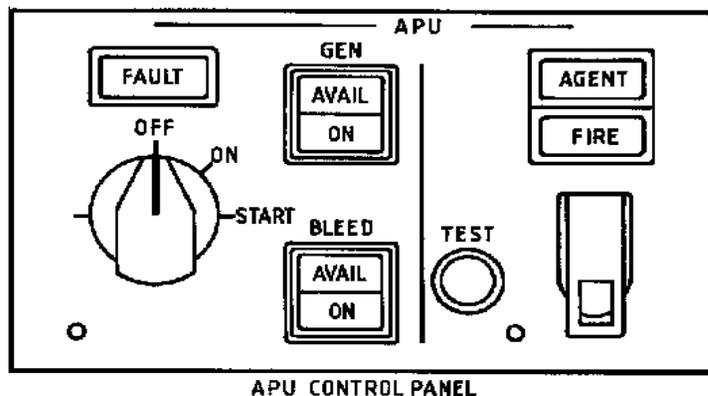
Note that the temperature control rotary switch for the cabin, is not active unless you activate the cabin temperature authority push switch to override the temperature input from the flight attendants.

Use of the flight deck heater switch if you need to speed up the heating process of the flight deck on cold days.

F-50	Flight Deck Manual	12-15 (64)
	OVERHEAD PANELS	00.08.30

AUXILIARY POWER UNIT (APU) PANEL

The APU is a source of electrical and pneumatic power for the aircraft on the ground. The APU is a gas turbine engine, which gives a mixture of shaft power and compressor bleed air. The APU is located in the rear section of the right hand side nacelle.



The APU is controlled from the APU Control Panel on the overhead panel, which has the following controls and indicators:

ROTARY THREE POSITION SELECTOR SWITCH

- OFF, the APU is turned off
- ON, the APU is in the initialization or start sequence, or on
- START, the APU start sequence is initiated

GENERATOR PUSH SWITCH – turns on or off the APU generator electrical supply. The lights on the switch indicate whether the APU generator is ready to supply electrical power (AVAIL) or if it is on, supplying electrical power (ON) to the electrical system in the aircraft.

BLEED PUSH SWITCH – turns on or off the APU bleed air supply. The lights on the push switch indicate whether the APU generator is ready to supply bleed air (AVAIL) or if it is on, supplying bleed air (ON) to the aircraft pneumatic system.

FAULT WARNING INDICATOR – indicating an APU failure and that the APU has been shut down.

TEST, DISH, AGENT and FIRE SWITCHES/INDICATORS – are not operational in this panel.

F-50	Flight Deck Manual	12-13 (62)
	OVERHEAD PANELS	00.08.30

CABIN TEMPERATURE AUTHORITY – the temperature in the cabin is normally controlled by the flight attendants in the cabin. Use the cabin temperature authority push switch to override the temperature setting set by the FA's.

FLIGHT DECK/CABIN TEMPERATURE ROTARY SELECTORS – is used to control the temperature in the relevant compartment, either automatic (up-range of selector) or manually (down range of selector).

COOLING PACK PUSH SWITCH – are used to close the cooling pack shut-off valves. Use the left hand side pack to open/shut the supply of conditioned air to the flight deck, and the right hand side switch to open/shut the supply of conditioned air to the cabin.

RECIRCULATION PUSH SWITCHES – turn on/off the air recirculation fans in the cabin and on the flight deck (dummy switches).

ECONOMY PUSH SWITCH – (Dummy switch).

ENGINE BLEED AIR PUSH SWITCHES – turn on/off the supply of bleed air from the engines. Note that the engines must be running before you can switch on the bleed air supply. Also, either one of the two engines can supply both the cooling pack for the flight deck and the cabin.

OPERATION OF THE AIR CONDITIONING SYSTEM

In order to activate and operate the air conditioning system you need to make bleed air available to the system. You can supply the air conditioning system with bleed air from either of the two engines or from the APU. When supplying bleed air from the engines, make sure the engine bleed air push switch for the selected engine(s) is on.

Then you need to open the cooling pack shut-off valve for the selected compartment you wish to supply condition air to (flight deck or cabin). You can also turn on the recirculation fans, which will recirculate the air in the selected compartment.

The temperature control system can be operated in two modes:

MANUAL MODE – On the temperature control rotary switch you can set COLD, OFF and HOT. Selecting COLD/HOT will cause the system to constantly blow cold/hot air into the selected compartment. OFF shuts off the flow of conditioned air into the selected compartment.

F-50	Flight Deck Manual	12-16 (65)
	OVERHEAD PANELS	00.08.30

OPERATION OF THE APU

The APU may only be operated when the aircraft is on the ground. The APU will automatically shut down if the aircraft is airborne.

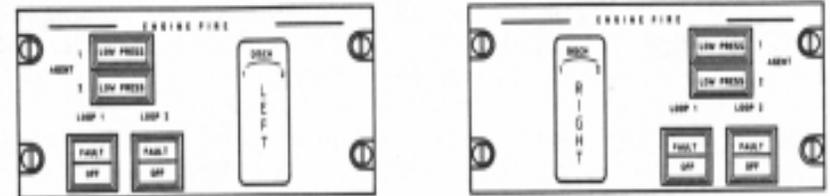
1. In order to start the APU, turn the rotary switch to ON. This will start the APU initialization sequence. This initialization sequence will take approximately 10 seconds.
2. After 10 seconds turn the switch to START in order to initiate the APU start sequence. The rotary switch is spring loaded back to the ON position. If you inadvertently turn the rotary switch to START too soon (before the initialization sequence is finished), you may have an APU failure and the APU will shut down and the amber FAULT sign will come on. If the APU faults you will have to wait approximately 2 minutes before you can attempt to start the APU again.
3. The startup sequence is now in progress. After about 45 seconds the APU generator will be ready (AVAIL) to supply electrical power. After about 2 minutes the APU will be ready (AVAIL) to supply bleed air to the pneumatic system.
4. Press the push switches to turn on the electrical supply and the bleed air supply.

On the options panel (shift F6) there is an option to cancel the APU time delays as described above. Check off this option and the APU will start immediately, and electrical and bleed air supply will also be available immediately.

F-50	Flight Deck Manual	12-18 (67)
	OVERHEAD PANELS	00.08.30

ENGINE FIRE EXTINGUISHING SYSTEM PANEL

The Engine Fire Extinguishing System has two fire extinguisher bottles installed, each filled with 5.1 lbs CBrF3 (Bromotrifluoromethane).



Operation of the fire extinguisher bottles is done from the two Engine Fire Control Panels, one for each engine, which has the following switches and indicators:

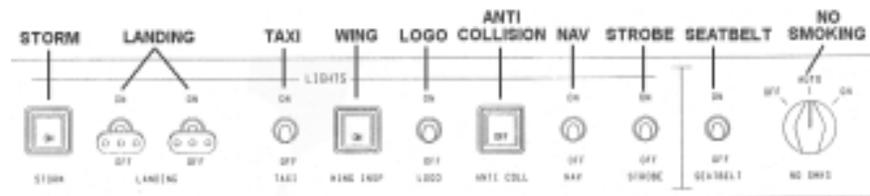
ENGINE FIRE HANDLE – pull and turn the engine fire handle to discharge the content of the engine fire extinguisher bottles into the engine. Turn the fire handle to the left to discharge bottle 1, and to the right to discharge bottle 2. When the fire handle is turned the fuel supply to the engine is also cut off. This is indicated on the Fuel Control Panel (SHUT sign).

LOW PRESSURE and LOOP PUSH SWITCHES – are not operational in this panel.

F-50	Flight Deck Manual	12-19 (68)
	OVERHEAD PANELS	00.08.30

EXTERIOR LIGHTING CONTROL PANEL (ELCP):

The ELCP has the following switches:



STORM PUSH SWITCH – selects full bright flood light of the main instrument panel. This switch is a dummy in this panel.

LANDING SWITCHES – turn on or off the landing lights. The landing lights, one in each wing leading edge, give a high-powered light. The landing lights help visibility when the aircraft makes a landing at night or any other time of poor visibility.

TAXI SWITCH – turns on or off the taxi lights. The taxi lights are installed to get a light during taxiing at night or bad weather conditions.

WING PUSH SWITCH – turns on or off the wing inspection lights. The wing inspection lights are installed to give lighting to the wing leading edges so that the crew can look for ice formation during the flight.

LOGO SWITCH – turns on or off the logo lighting. The logo lighting gives illumination to the company logo on the vertical stabilizer.

ANTI COLLISION PUSH SWITCH – turns on or off the anti-collision lighting. The anti-collision lighting gives flashing warning lights to prevent collision in flight or on the ground.

NAV SWITCH – turns on or off the navigation lighting. The navigation lighting has three light assemblies, one on each wing and one at the tail of the aircraft. They show the aircraft position and direction of movement.

STROBE SWITCH – turns on or off the high intensity recognition lighting. The high intensity recognition lighting is given by strobe light units. The units give a high intensity flash of white light to show the position of the aircraft.

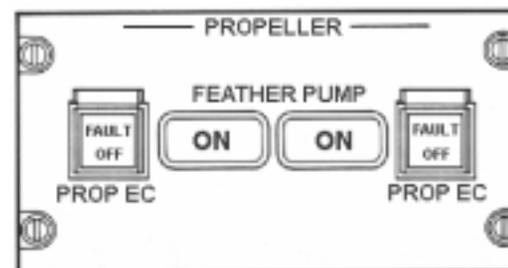
SEAT BELT SWITCH – turns on or off the FASTEN SEATBELT sign in the cabin.

NO SMOKING ROTARY SWITCH – turns on or off the NO SMOKING sign in the cabin. When the switch is set to the AUTO position this sign is slaved to the SEATBELT sign.

F-50	Flight Deck Manual	12-17 (66)
		00.08.30

PROPELLER CONTROL PANEL

The Propeller Control Panel shows the propeller feather pump status (white ON sign). The Prop EC push switches are not operational in this panel.



F-50	Flight Deck Manual	13-0 (69)
	FO CHECKLISTS	00.08.30

FO (First Officer) CHECKLISTS

The FO Checklists are designed to make the pilots (You!) job that much easier. The FO checklists are as realistic as possible, so some of the items are not yet simulated in this panel so you just have to skip over them and go onto the next item. The FO checklist are both is a pull up menu system and a voice system.

FO CHECKLIST MENU SYSTEM

The FO checklist menu system is activated by pressing shift-4.

An example of the checklist menu is as follows:

<u>Fokker 50 Checklists</u>	
1. External power.....ON	PRESTART
2. Batteries switch.....ON	
3. Ground handling switch.....ON	CREW AT THE STATIONS
4. Circuit breakers.....CHKD	
5. Gear pins & pilot covers.....ON BOARD	ALWAYS BEFORE PUSH BACK/TOW
6. Loose objects & equipm.....CHKD	
7. Landing gear.....CHKD	
8. Fresh air scoops.....SHUT	AFTER START
9. GPWS.....TEST	
10. EVAC signal system.....ARMED	
11. Flight recorder.....SET	TAXI
12. Cockpit voice recorder.....CHKD	
13. Heading mode switches.....SLAVED	
14. Engine fire panels.....CHKD	CLIMB
15. Bleed air.....OFF	
16. Air conditioning.....SET	DESCENT
17. Emergency lights.....ARMED	
18. Pressurization.....SET	
19. External lights.....SET	APPROACH
20. Seat belt - No smoking.....ON AND AUTO ON	
21. Avionics & RADAR.....SET & STBY	
22. Area NAV.....CHKD & SET	AFTER LANDING
23. Test panel.....CHKD & SET	
24. Trim tabs.....SET	PARKING
Next Checklist Item	

F-50	Flight Deck Manual	13-2 (71)
	FO CALLOUTS	00.08.30

FO (First Officer) CALLOUTS

The FO (First Officer) also will assist you with a number of different call outs at different phases of flight. They are as follows:

ENGINE START UP

* At 20% Nh	"Twenty Percent"
* At 66% Nh	"Sixty Six Percent"
* Engine 1 Stable	"Engine One Stabilized"
* Engine 2 Stable	"Engine Two Stabilized"

TAKEOFF ROLL

* Takeoff Power Set	"Takeoff Power is Set"
* 80 Knots Speed	"Eighty Knots"
* At V1 Speed	"Vee-One"
* At VR Speed	"Rotate"
* Positive Climb	"Positive Climb, Gear Up"
* Gear Up	"Gear is Up and Locked"
* Flap Retraction	"Flap 0"
(It depends on the flap settings on this item)	

LANDING PHASE

*Flap Extension	"Flap 5"
(At each new flap setting, i.e. flap 5, flap 10, etc)	
* Gear Down	"Gear is Down and Locked"
* Minimum Apch Altitude	"Approaching Minimums"
* At 500 Feet AGL	"Five Hundred Feet"
* At 400 Feet AGL	"Four Hundred Feet"
* At 300 Feet AGL	"Three Hundred Feet"
* At 200 Feet AGL	"Two Hundred Feet"
* At 100 Feet AGL	"One Hundred Feet"
* At 50 Feet AGL	"Fifty"
* At 40 Feet AGL	"Forty"
* At 30 Feet AGL	"Thirty"
* At 20 Feet AGL	"Twenty"
* At 10 Feet AGL	"Ten"

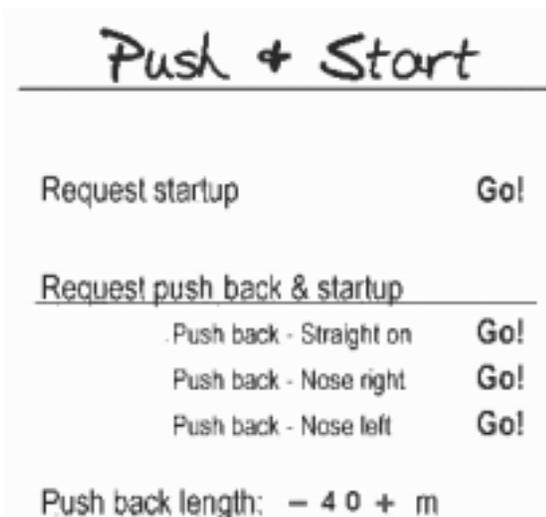
F-50	Flight Deck Manual	14-0 (72)
	PUSH BACK	00.08.30

PUSH BACK AND START PANEL

The Push Back and Start panel is used to communicate with your ground crew at the gate/stand. You can make the following selections on the Push & Start panel:

- **REQUEST START** – this selection initiates communication with the ground crew which advises you that the engine area is clear and you may start your engines
- **REQUEST PUSHBACK & STARTUP** – if you, in addition to a startup clearance, need to be pushed away from the gate/stand select:
 - Push Back – Straight on: to be pushed straight back
 - Push Back – Nose right: to be pushed backwards and turning the aircraft to face right of your original position
 - Push Back – Nose left: to be pushed backwards and turning the aircraft to face left of your original position
- **Push Back Length** – sets the total length you wish to be pushed

NOTE: If you are using a joystick to control your aircraft, it is VERY important that your joystick is 100% centered before you start the pushback sequence. The panel uses the “slew” mode to move the aircraft, and if your joystick is not fully centered it may interfere with the pushback and the result is unpredictable.



F-50	Flight Deck Manual	13-1 (70)
	FO CHECKLISTS	00.08.30

You will notice that the checklist is divided into two sections, the first on the left side is the items for the checklist selected. The right side is the different checklist available. Once you select a checklist from the right side, all the items in that checklist will be displayed on the left side. If the line at the very bottom of the left side states “Next Checklist Item” click in this area to bring up more checklist items for the current selected checklist.

VOICE FO CHECKLIST

If you prefer to have the FO go through the checklist verbally, then all you have to do is hit the space bar. The first checklist (Pre Start) will now be read off by the FO. The FO will not go to the next item until you hit the space bar again. You will know when the current checklist is finished as the FO will state “Checklist Completed”.

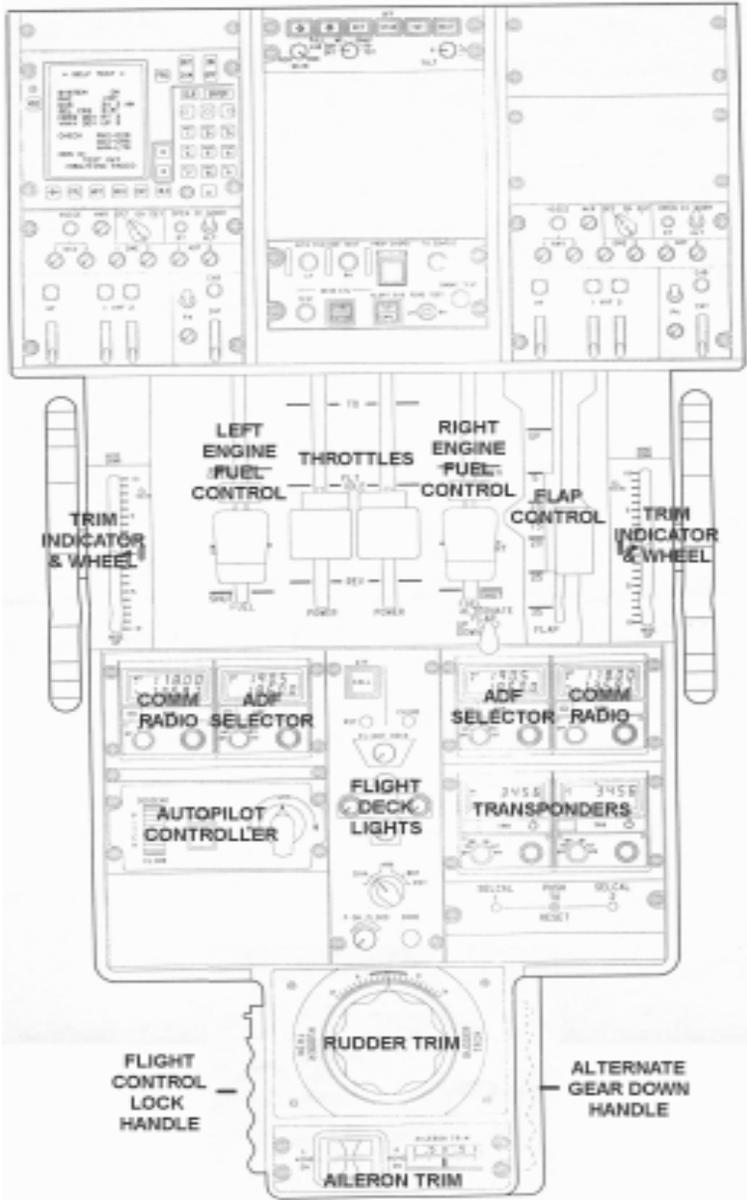
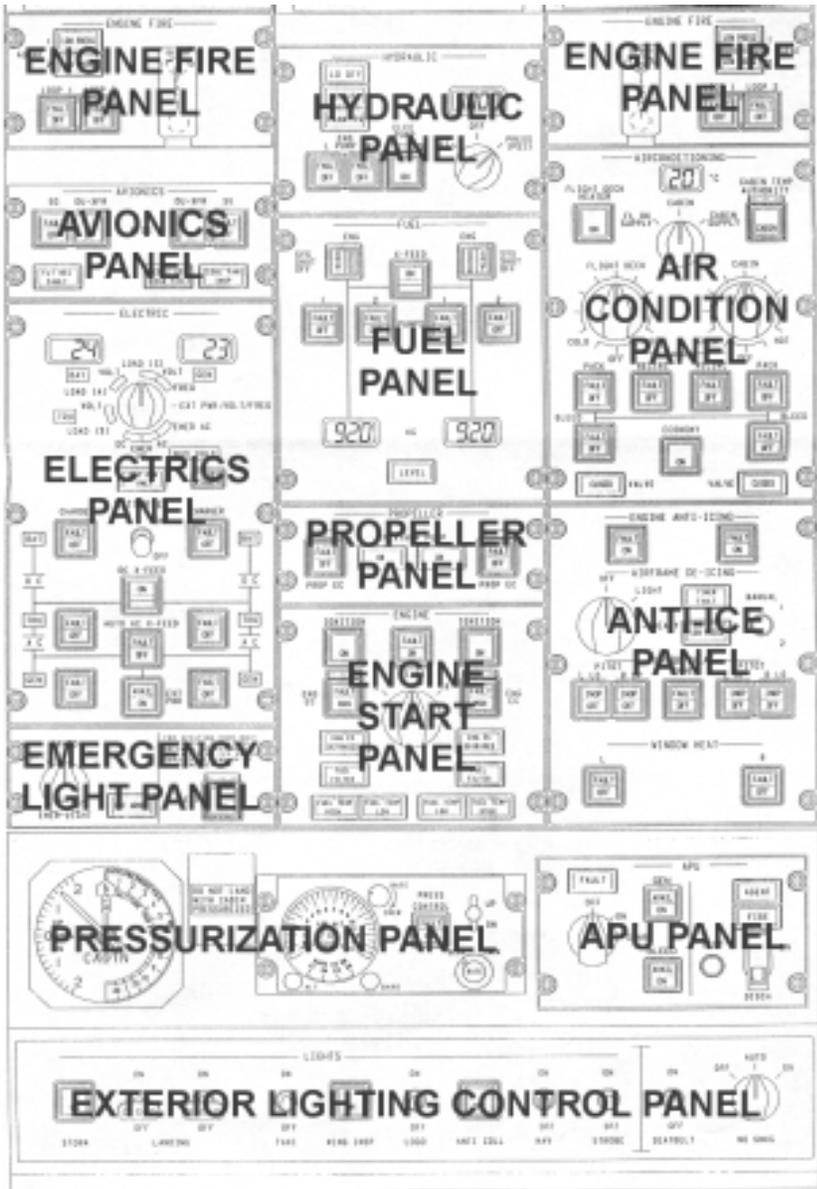
If you go past the checklist you want, just pull up the menu and then select the checklist you want, close checklist menu and hit the space bar and you will continue from that checklist.

When you are using the verbal checklist, in other words space bar only, the checklist menu will not be displayed.

It is suggested that you use the abbreviated paper checklist as well when using the verbal checklist so you can follow along (located in Appendix B).

F-50	Flight Deck Manual	15-0 (73)
	PANEL OVERVIEW	00.08.30

F-50	Flight Deck Manual	15-2 (75)
	PANEL OVERVIEWS	00.08.30



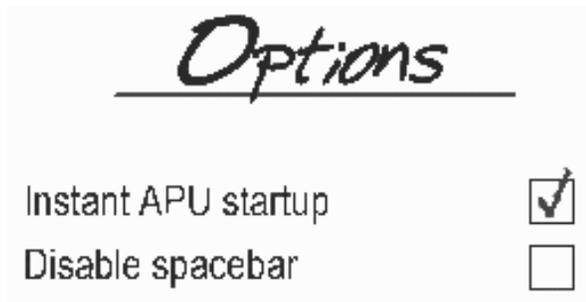
F-50	Flight Deck Manual	16-0 (76)
	OPTIONS PANEL	00.08.30

OPTIONS PANEL

The Options Panel (shift-6) gives you the following options:

- **INSTANT APU STARTUP** – Select this option to have the APU startup immediately (no need to wait for 2 minutes)
- **DISABLE SPACEBAR** – Select this option to disable the spacebar for checklist reading. This option is useful when, for example you are flying with Squawkbox and you need to type in messages for ATC

The options you select are stored on disk between flights, and restored the next time you load the panel.



F-50	Flight Deck Manual	15-1 (74)
	PANEL OVERVIEWS	00.08.30

