Pitot/Static System
S/Ns 3001-3066

Pilot's Pitot-Static Head
Copilot's Pitot-Static Head
Static Manifold
Pitot Pressure (P1 & P2)
Pilot's Static (S1)
Copilot's Static (S2)
Alt Static (S3)

AC Main Bus 1
AC Main Bus 2
AC ESS Bus

M/SI
ALT
IVSI

SPS 1
SPS 2

Change-over Manifold

Static Port S1
Static Port S2
Static Port S3

Cabin Pressure Indicator
Air Data Computer

Post SB 601-0334
Pitot/Static System
S/N 5001 and Subsequent

- PILOT'S PITOT-STATIC HEAD
- COPILOT'S PITOT-STATIC HEAD
- STATIC MANIFOLD
- ESS BUS (115V AC)
- AC MAIN 1 (115V AC)
- AC MAIN 2 (115V AC)

- SPS 1 ALTITUDE TRANSDUCER
- SPS 2 ALTITUDE TRANSDUCER

- ALTI/STAT SOURCE SW PILOT'S
- ALTI/STAT SOURCE SW COPILOT'S

- STANDBY INSTR PITOT AND STATIC SELECTORS
- INSTR PITOT AND STATIC SELECTORS

- CABIN PRESSURE INDICATOR
- STANDBY ALT

- STATIC PORT S3
- STATIC PORT S3

- NO.1 DADC
- NO.2 DADC

- PILOT'S STALL PROTECT VALVE
- COPILOT'S STALL PROTECT VALVE

- PITOT PRESSURE (P1 & P2)
- PILOT'S STATIC (S1)
- COPILOT'S STATIC (S2)
- ALT STATIC (S3)

- S/Ns 5001 AND SUBSEQUENT; PRIOR A/C WITH SB 601-0376

Developed for Training Purposes  Challenger 601
July 1995
Instrument Remote Controller

TURN KNOB
Provides bank commands to the autopilot proportional to knob displacement. When rotated out of detent, the lateral mode ... to the detent position, a lateral mode can be selected. The autopilot can not be engaged if the TURN knob is out of detent.

SOFT RIDE SWITCH/LIGHT
When pressed, lowers autopilot system gains for operation in turbulence and green ON light illuminates.

Flight Director Mode Selector

When pressed, selects which flight director is controlling the autopilot. The split legend, 1 and 2, sequences each time the switch/light is pressed.

PITCH WHEEL
Moving the PITCH wheel changes the reference pitch attitude in proportion to the movement of the wheel. When the autopilot is coupled to the glideslope, moving the PITCH wheel has no effect.

AP ENGAGE SWITCH/LIGHT
When pressed, the autopilot is engaged and green AP ENGAGE light comes on.

YD ENGAGE SWITCH/LIGHT
When pressed, the yaw damper is engaged and green YD ENGAGE light comes on. The yaw damper engages automatically when the autopilot is engaged.

Ap-601-1a
Auto-pilot Controller Panel

COURSE 1 KNOB
Sets course pointer and course digital read-out on pilot's HSI to the desired course.

COURSE 2 KNOB
Sets course pointer and course digital read-out on copilot's HSI to the desired course.

HEADING KNOB
Sets heading bugs on pilot's and copilot's HSI to the desired heading.

SELECTOR SWITCH

SET KNOB

HDG NAV APR BC VOR APR SBY MACHIAS VS

NAVIGATION MODE

LOCALIZER APPROACH MODE

BACK COURSE MODE

VOR APPROACH MODE

STANDBY MODE

MACH HOLD MODE

INDICATED AIRSPEED HOLD MODE

ALTITUDE HOLD MODE

VERTICAL NAVIGATION MODE

VERTICAL SPEED HOLD MODE

ALTITUDES

ON ARM

ON ARM

ON ARM

ON ARM

ON ARM

ON ARM

ON ARM

Developed for Training Purposes
TAS/SAT/TAT Indicator

- **TAS (KTS)**
- **SAT (°C)**
- **TAT**

**Display:**
- TAS in knots from 150 to 559
- SAT in °C from -99 to +50

**Front Panel Dimming Control:**
- Momentary pushbutton to display TAT dashed display if air data computer is invalid.

**CAE SimuFlite**

Developed for Training Purposes

Challenger 601
July 1995
Status Panel

ROLL 1 SWITCH/LIGHT
Amber OFF light illuminates to indicate a malfunction and disengagement of ROLL 1 channel.

Pressing ROLL 1 switch/light when the autopilot is disengaged reverts the system to single channel ROLL 1 operation.

ROLL 2 SWITCH/LIGHT
Amber OFF light illuminates to indicate a malfunction and disengagement of ROLL 2 channel.

Pressing ROLL 2 switch/light when the autopilot is disengaged reverts the system to single channel ROLL 2 operation.

PITCH 1 SWITCH/LIGHT
Amber OFF light illuminates to indicate a malfunction and disengagement of PITCH 1 channel.

Pressing PITCH 1 switch/light when the autopilot is disengaged reverts the system to single channel PITCH 1 operation.

YAW 1 SWITCH/LIGHT
Amber OFF light illuminates to indicate a malfunction and disengagement of YAW 2 channel.

Pressing YAW 1 switch/light when the autopilot is disengaged reverts the system to single channel YAW 1 operation.

YAW 2 SWITCH/LIGHT
Amber OFF light illuminates to indicate a malfunction and disengagement of YAW 2 channel.

Pressing YAW 2 switch/light when the autopilot is disengaged reverts the system to single channel YAW 2 operation.

TEST 1 SWITCH
ROLL 1 OFF, PITCH 1 OFF and YAW 1 OFF lights illuminate when TEST 1 switch is pressed, indicating that the monitor brakes have been applied and that torque limiting is present in channel 1.

TRIM UP AND DOWN ANNUNCIATOR LIGHTS
Amber light comes on if a nose-up or nose-down of trim condition exists.

Amber ON light comes on if nose-up or nose-down of trim condition exists.

TEST 2 SWITCH
ROLL 2 OFF, PITCH 2 OFF and YAW 2 OFF lights illuminate when TEST 2 switch is pressed, indicating that the monitor brakes have been applied and that torque limiting is present in channel 2.

TEST RESTORE SWITCH/LIGHT
Tests the internal electronics and annunciator light.

Resets any prior disabled channel.

Instrument Comparator

PITCH LIGHT
Illuminates when a difference exists between the two pitch channel signals.

ROLL LIGHT
Illuminates when a difference exists between the two roll channel signals.

HDG LIGHT
Illuminates when a difference exists between the two heading signals ± 2 degrees.

MNTR LIGHT
Illuminates when the internal power supply voltage drops below a predetermined level.

WARN DISABLE SWITCH/LIGHT
Amber light illuminates when one or more drive signals from the above six functions produce a master warning drive signal. Pressing the button disables all monitoring functions except the voltage monitor.

GS LIGHT
Illuminates when a difference exists between the two glide slope channel signals.

MACH LIGHT
Illuminates when a difference exists between the two Mach channel signals.

MACH TRIM INOP SWITCH/LIGHT
Amber MACH TRIM INOP light illuminates if MACH trim fails. When pressed, MACH trim is re-engaged. If light remains on, MACH TRIM TEST/ON/OFF switch must be set to OFF.

Y/D INOP SWITCH/LIGHT
Amber Y/D INOP light illuminates if yaw damper channel fails. When pressed, light is reset.

Y/D FAIL LIGHT
Red Y/D FAIL light flashes if there is a channel failure which autopilot and stability augmentation monitors cannot identify. Light can not be reset.

Y/D DISENGAGED PUSHDOWN BUTTON
When pressed, disengages yaw damper (both channels if engaged).

MACH TRIM TEST/ON/OFF SWITCH
Three-position, spring-loaded switch.

ON-Mach trim is engaged.

TEST-When held at TEST, MUP STAB pointer on control surface trim indicator moves left. When released, MACH light illuminates on 10-channel system annunciator. MASTER CAUTION/RESET switch lights flash.

TRIM LIGHT
Illuminates when a difference exists between the two trim channel signals.

PITCH LIGHT
Illuminates when a difference exists between the two pitch channel signals.

ROLL LIGHT
Illuminates when a difference exists between the two roll channel signals.

HDG LIGHT
Illuminates when a difference exists between the two heading channel signals ± 2 degrees.

MNTR LIGHT
Illuminates when the internal power supply voltage drops below a predetermined level.

WARN DISABLE SWITCH/LIGHT
Amber light illuminates when one or more drive signals from the above six functions produce a master warning drive signal. Pressing the button disables all monitoring functions except the voltage monitor.

GS LIGHT
Illuminates when a difference exists between the two glide slope channel signals.
CL-601-3A/3R
ED-800 EADI Displays and Annunciators

ED-800 EADI With Optional TCAS Symbology
Composite Display Symbology

NOTE: Composite display not available with Honeywell TCAS installed for presentation on EADI. Selecting the failed EADI or EHSI dimming knob to OFF displays the EADI on the remaining operating display. The EHSI display may be selected on the MFD.

CAE SimuFlite

Developed for Training Purposes
Challenger 601
July 1995
EADI Failure Flags and Annunciators

- IAS Flag (Red)
- ASEL Flag (Red)
- Cross-Side SG Data Flag (Red)
- Vertical Speed Flag (Red)
- Glide Slope Flag (Red)
- Radio Altitude Flag (Red)
- LOC XDTA Localizer Flag (Red)

Flight Director Failure Flag

- Flight Director Flag (Red)

Symbol Generator Internal Failure Flag

- SG Flag (Red)

Attitude Failure Flag

- Attitude Flag (Red)
EADI Test Pattern (First 4 Seconds, Comparator Monitor ñ Amber)

EADI Test Pattern (After 4 Seconds, Failure Flags ñ Red)

EADI Reversionary Mode Source Annunciators

EADI Reversionary Mode Source Annunciators, TCAS Installations
EFIS Control Panel

### CAT 2 ILS Excessive Deviation Limits

<table>
<thead>
<tr>
<th>Deviation</th>
<th>Monitor Threshold</th>
<th>Operational Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOC</td>
<td>± 35 μA (~ 1/3 dot)</td>
<td>Approach track to 300 ft</td>
</tr>
<tr>
<td></td>
<td>± 20 μA (~ 1/5 dot)</td>
<td>300 ft to 100 ft</td>
</tr>
<tr>
<td></td>
<td>disabled</td>
<td>100 ft to touchdown</td>
</tr>
<tr>
<td>GS</td>
<td>± 35 μA (~ 1/3 dot)</td>
<td>Approach track to 300 ft</td>
</tr>
<tr>
<td></td>
<td>± 35 μA (~ 1/3 dot)</td>
<td>300 ft to 200 ft</td>
</tr>
<tr>
<td></td>
<td>± 65 μA (~ 3/4 dot)</td>
<td>200 ft to 100 ft</td>
</tr>
<tr>
<td></td>
<td>disabled</td>
<td>100 ft to touchdown</td>
</tr>
</tbody>
</table>
ED-800 EHSI Displays and Annunciators

NOTES:
1. Distance is provided by the FMS:
   - To the next waypoint with FMS as the navigation source.
   - To the VOR station in the VOR mode if DME is not collocated with the VOR, or if DME is not valid.
   - If annunciator is FMS.
2. Ground speed is provided by:
   - The FMS in the FMS mode.
   - The IRS in all other modes.
3. Time-to-go is provided by:
   - The FMS in the FMS mode with no collocated DME.
   - The DME and IRS with collocated DME.
4. Elapsed time is computed by the EFIS symbol generator.
5. With FMS selected and during course preselect, the CRS display appears during and for 5 seconds after rotation of the CRS knob and then reverts back to the DTK display.

Challenger 601
July 1995
Developed for Training Purposes
ED-800 EHSI Arc Display with TCAS Failure Messages

ED-800 EHSI Arc Display with TCAS

ED-800 EHSI Displays and Annunciators (Arc Mode)

NOTES:
1. Time-to-go and elapsed time is also displayed at this location.
2. With FMS selected and during course preselect, the CRS display appears during and for 5 seconds after rotation of the CRS knob and then reverts back to the DTK display.
ED-800 EHSI Heading Failure Flag

EHSI Heading Comparison Monitor

* Flashing 10 seconds, then steady

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Challenger 601

July 1995
TCAS Traffic Display on MFD

MFD Plan Mode Displays and Annunciators
Standby Magnetic Compass

Standby Attitude Indicator

Digital Clock and Reset Button
Cockpit Voice Recorder

- **METER**: Used to monitor tone burst during test.
- **TEST SWITCH**: Initiates operational test of voice recorder.
- **ERASE SWITCH**: When set for at least two seconds, erases the entire recorded information, provided the aircraft has landed and the parking brake is on.
- **HEADSET MONITOR JACK**: Provides for connection of a headset for continuous monitoring of all four recorded channels.

HF COMM Control Head

- **FREQ/LD PUSHBUTTON**: Initiates operational test of voice recorder.
- **SQL CONTROL**: Eliminates background noise when the signal is not received.
- **SQL DSBL PUSHBUTTON**: Disables the squelch function.
- **CHAN SELECTOR**: Selects one of ten preset frequencies for display on the FREQ/CHAN display. The preset frequency channel number is indicated by the digit of the FREQ/CHAN display.
- **CURSOR CONTROL**: Used to position the cursor to the left or right.
- **VALUE CONTROL**: Adjusts the frequency displayed by the cursor.

SELCAL Control Head

- **HF1 PRESS TO RESET SWITCH/LIGHT**: When set to the TEST position, simulates an incoming call. When pressed, resets the SELCAL system, and the PRESS TO RESET switch/light goes out.
- **HF2 PRESS TO RESET SWITCH/LIGHT**: When set to the TEST position, simulates an incoming call. When pressed, resets the SELCAL system, and the PRESS TO RESET switch/light goes out.
- **TEST SWITCH**: When set to the TEST position, simulates an incoming call.

Developed for Training Purposes

Challenger 601

July 1995
Pilotís and Copilotís Side Console

NAV 1/2 MONITOR SWITCH
Selects (up position) VHF/NAV 1/2 audio for presentation on the speaker and/or headphones.

MKR 1/2 MONITOR SWITCH
Selects (up position) marker beacon audio from the VHF/NAV 1/2 for presentation on the speaker and/or headphones.

ADF 1/2 MONITOR SWITCH
Selects (up position) ADF 1/2 audio for presentation on the speaker and/or headphones.

DME 1/2 MONITOR SWITCH
Selects (up position) DME 1/2 audio for presentation on the speaker and/or headphones.

HF 1/2 MONITOR SWITCH
Selects (up position) HF 1/2 audio for presentation on the speaker and/or headphones.

SPKR VOL CONTROL
Varies volume of audio to speaker and headphones except aural warning. Turn clockwise to increase volume.

SPKR/PHONE SWITCH
Switches audio to speaker, headphones, or both.

DME 1/2 MONITOR SWITCH
Selects (up position) DME 1/2 audio for presentation on the speaker and/or headphones.

HOT MIC
Turns microphone on continuously by bypassing press to transmit switch.

OXY BOOM
Connects boom mic or oxygen mask mic to selected transmitter.

DISPLAY MODE SELECT PUSHBUTTON
Selects full or part-time traffic display.

RANGE SELECT PUSHBUTTON
Selects range mode of traffic display.

OPERATING MODE SELECT SWITCH
Selects altitude volume.

Honeywell RMU (Release III)

COM 1
SQ
NAV 1
123.55
108.00
121.70
108.00
TEMP-1
HC
ADF 1
1200
100.0
ADF

CURSOR
TRANSFER (FLIP-FLOP) KEY
LINE SELECT KEY
FUNCTION KEYS
SPKR/PHONE SWITCH
Switches audio to speaker, headphones, or both.

HOT MIC
Connects microphone and/or headset and/or speaker and push to transmit button to appropriate radio.

OXY BOOM
Connects boom mic or oxygen mask mic to selected transmitter.

NOTES:
1. If power fails on either channel of the audio electronics unit, the controls will not function.
2. Emergency Operation: Pilot can use VHF 1 and hear NAV 1 without volume control. Copilot can use VHF 2 and hear NAV 2 without volume control.
Flight Guidance Advisory Display

- **RESET PUSHPUTTON**
  - When pressed, resets failure, warning, and caution messages.

- **DISPLAY**
  - Provides warning, caution, status, failure, and invalid operation messages, and air data and flight director mode status. Low priority messages are inhibited during take-offs and landings (below).

- **BRT CONTROL**
  - When turned on, adjusts the brightness of the advisory display.

- **L AFCS OR R AFCS PUSHPUTTON**
  - When pressed, selects either the pilot's FGC (left) or the copilot's FGC (right).

Pilotís and Copilotís Control Wheels

- **PITCH TRIM SELECTORS**
  - Push to transmit switch. Keys the system selected by the mic switch.

- **TOUCH CONTROL STEERING SWITCH**
  - When pressed, disconnects autopilot servo clutches to allow manual flight path commands to be inserted without disengaging autopilot and coupled flight director mode.

- **PITCH TRIM DISCONNECT SWITCH**
  - When pressed, disengages pitch trim system.

- **AUTOPILOT/STICK PUSHER DISCONNECT SWITCH**
  - When pressed, disengages autopilot and disables stick pusher system.

- **DISC**
  - AP/SP
  - NOSE
  - DN
  - NOSE
  - UP

- **T/CSTEER MIC**
  - AUTOPILOT/STICK PUSHER DISCONNECT SWITCH

- **FRONT VIEW**

- **REAR VIEW**

- **PITCH TRIM SELECTORS**
  - Push to transmit switch. Keys the system selected by the mic switch.
RMU COM Messages

MIC STK  When the microphone is stuck for approximately two minutes, a beep will sound on the audio and the MIC STK message will appear until the MIC button is released. Ten seconds after the MIC STK annunciation appears, the selected transmitter will automatically turn off.

AUX ON  Indicates the auxiliary COM control head is turned on or clearance delivery control is in emergency mode. The respective COM is being channeled by the AUX control head or the clearance delivery control. The RMU is locked out from control of that COM.

TX  Indicates the transmitter is ON.

SQ  Indicates the squelch has been opened with SQ button.

NB  On later software, indicates that narrow band width has been selected.

WB  On later software, indicates that wide band width has been selected.
Pilot's EFIS Remote Controller

**HDG PUSH SYNC PUSHBUTTON**
- When rotated, moves the heading bug on the pilot’s EHSI. When pressed, causes the heading bug to synchronize to the aircraft heading.

**IAS/MACH PUSH CHG CONTROL SWITCH**
- When rotated, adjusts the IAS/Mach reference on the pilot’s EHSI. When pressed, the push-to-change function is inhibited with the aircraft on the ground.

Copilot's EFIS Remote Controller

**ALT SEL CONTROL**
- When rotated, adjusts the ASEL display on the copilot's EADIs.

Flight Guidance Controller

**HDG PUSH SYNC PUSHBUTTON**
- When pressed, causes the heading bug to synchronize to the aircraft heading.

**CPL PUSHBUTTON**
- When pressed, selects either the pilot's or copilot's EHSI data for lateral and vertical navigation. If the autopilot is engaged on the pilot's side, the copilot's data is selected. If the autopilot is engaged on the copilot's side, the pilot's data is selected.

**AP PUSHBUTTON**
- When pressed, engages the autopilot and yaw damper function simultaneously. When pressed a second time, the autopilot is disconnected but the yaw damper function remains on.

**AP, YD, M TRIM AND CPL POINTERS**
- Left and right pointers indicate the selected AFCS. When the selected function is operating, the remaining good side is selected. If the autopilot is disengaged, the remaining good side is selected.

**M TRIM PUSHBUTTON**
- When pressed, selects the mach trim function which stays active even when the autopilot is engaged. By pressing the push-to-change function, the left pointer comes on. When an FMS source is selected, rotating the control causes the preselect course pointer to move.

**CPL PUSHBUTTON**
- When pressed, selects either the pilot's or copilot's EHSI and DADC data for lateral and vertical navigation. When the FMS source is selected, rotating the control causes the preselect course pointer to move.

**CPL POINTERS**
- Left and right pointers indicate the selected AFCS. When the selected function is operating, the remaining good side is selected.

**NOSE DN – NOSE UP WHEEL**
- Moving the NOSE UP wheel changes the pitch attitude proportional to the rotation of the pitch wheel. When flight director VNAV and APP glideslope coupled modes are used, the NOSE UP wheel operation is cancelled.

**NOSE ON – NOSE UP WHEEL**
- Moving the NOSE ON – NOSE UP wheel switches the autopilot function to the position selected by the pilot. When flight director VNAV and APP glideslope coupled modes are used, the NOSE UP wheel operation is cancelled.

**TURNOVER KNOB**
- Provides banks commands to the autopilot (FGC1 and FGC2) proportional to knob displacement. The activate function is taken over by the flight director. When the flight director is cancelled, the autopilot function is taken over by the flight director. When the autopilot is engaged, the flight director is cancelled automatically.
Flight Guidance Controller

**NAV PUSHBUTTON**
When pressed, arms the lateral guidance for capture of the selected navigation course displayed on the coupled EHSI.

**BANK PUSHBUTTON**
When pressed, selects the bank angle limit used during the HDG select mode. At power on, the high bank limit (27 degrees). Pressing the BANK pushbutton a second time selects the high bank limit. The selected bank limit is displayed on the advisory display.

**ALT PUSHBUTTON**
When pressed, selects vertical guidance to hold altitude.

**HDG PUSHBUTTON**
When pressed, activates the lateral guidance to compute bank commands based on the selected heading displayed on the coupled EHSI.

**APP PUSHBUTTON**
When pressed, arms the lateral guidance for localizer capture. Immediately following localizer capture, the vertical guidance is armed for glideslope capture.

**STBY PUSHBUTTON**
When pressed, clears all flight director modes.

**NAV PUSHBUTTON**
When pressed, arms the lateral guidance for capture of the selected navigation course displayed on the coupled EHSI.

**CAT 2 PUSHBUTTON**
When pressed, activates the category 2 approach logic for annunciation of CAT 2 STATUS, provided that the approach (APP) mode is armed and radio altitude is greater than 800 feet.

**B/C PUSHBUTTON**
When pressed, selects the approach mode guidance for capture and tracking of back course ILS data.

**FLC PUSHBUTTON**
When pressed, selects the flight level change mode and overrides all active vertical modes, except VNAV.

**VNAV PUSHBUTTON**
When pressed, selects the vertical navigation mode, tracking the vertical flight profile from the selected FMS.

**AP**
When pressed, selects vertical guidance to hold altitude.

**YD**
When pressed, selects vertical guidance to hold altitude.

**MTRIM**
When pressed, selects vertical guidance to hold altitude.

**CPL**
When pressed, selects vertical guidance to hold altitude.

**CAE SimuFlite**
Developed for Training Purposes

Challenger 601
July 1995
**Pilot’s Annunciator Switch Panel**

- **COMP MON SWITCH/LIGHT**: Comes on (amber) to indicate that a difference exists between one of the on-side and cross-side sources. The annunciator is representative on the EADI. When pressed, resets the comparison circuits.
- **COOL AIR FAIL SWITCH/LIGHT**: Indicates a cooling fan failure in IRS or EFIS systems.
- **PARKING BRAKE ANNUNCIATOR**: Indicates parking brake is set and anti-skid control relays are without power.
- **SG REV SWITCH/LIGHT**: When pressed, selects the cross-side symbol generator as a backup when the on-side symbol generator fails.
- **IAS REV SWITCH/LIGHT**: When pressed, selects the cross-side DADC as a backup IAS source when the on-side source fails.
- **PITOT HEAT ANNUNCIATOR**: Announces failure of respective pitot static probe heater.
- **NV STEER FAIL ANNUNCIATOR**: Indicates the ECM sensed a failure and has automatically disabled the SBW system.
- **AP DISC/YD OFF SWITCH/LIGHT**: AP DISC Annul a steady AP DISC light indicates that the autopilot has been intentionally disconnected. A flashing AP DISC light indicates an abnormal autopilot disconnect (FGC failure). Pressing the switch/light resets the flashing AP DISC light.
- **YD OFF**: Indicates that the FGC yaw damper function is disconnected. Pressing the switch/light does not reset the YD OFF light.
- **FLAP FAIL ANNUNCIATOR**: Indicates that the flap control unit has sent a signal to the latch preventing the extend or retract relays from operating.
- **LAT WPT ANNUNCIATOR**: Comes on to indicate that the aircraft is within 1000 feet of the vertical waypoint (VNAV) and goes out when the aircraft reaches the waypoint.
- **VERT WPT ANNUNCIATOR**: Comes on to indicate that the aircraft is within 30 seconds of the next lateral waypoint and goes out when the aircraft reaches the waypoint.
- **AP DISC/YD OFF SWITCH/LIGHT**: AP DISC Annul a steady AP DISC light indicates that the autopilot has been intentionally disconnected. A flashing AP DISC light indicates an abnormal autopilot disconnect (FGC failure). Pressing the switch/light resets the flashing AP DISC light.
- **OFFSET ANNUNCIATOR**: Comes on when a lateral offset path is entered on the PROGRESS page of the CDU and goes out when the offset function is removed.
- **HIGH LOW MARKER/MARK BEACON NAV TUNE**: Selects the marker beacon receiver sensitivity.
- **MACH TRIM OFF ANNUNCIATOR**: Comes on to indicate that the MACH TRIM function is disengaged.

**Copilot’s Annunciator Switch Panel**

- **COMP MON SWITCH/LIGHT**: Comes on (amber) to indicate that a difference exists between one of the on-side and cross-side sources. The annunciator is representative on the EADI. When pressed, resets the comparison circuits.
- **COOL AIR FAIL SWITCH/LIGHT**: Indicates a cooling fan failure in IRS or EFIS systems.
- **PARKING BRAKE ANNUNCIATOR**: Indicates parking brake is set and anti-skid control relays are without power.
- **SG REV SWITCH/LIGHT**: When pressed, selects the cross-side symbol generator as a backup when the on-side symbol generator fails.
- **MACH TRIM OFF ANNUNCIATOR**: Comes on to indicate that the MACH TRIM function is disengaged.
- **DADC REV SWITCH/LIGHT**: When pressed, selects the cross-side DADC as a backup DADC source when the on-side source fails.
- **FLAP REV SWITCH/LIGHT**: When pressed, selects the cross-side flight guidance computer (FGC) as a backup flight director when the on-side FGC fails.
- **HIGH LOW MARKER/MARK BEACON NAV TUNE**: Selects the marker beacon receiver sensitivity.
Multi-Function Display Controller

- SRC PUSHBUTTON
  Selects between the FMS 1 and FMS 2 navigation source for display on the MFD.

- MAP/PLAN PUSHBUTTON
  Selects between the MAP and PLAN displays for the MFD.

- INDECX/RNG
  Selects the displayed range. When weather radar returns are displayed, the range is controlled by the weather radar controller.

- VOR PUSHBUTTON
  Selects VOR/DME stations for display on the MFD.

- RCL PUSHBUTTON
  Recalls the designator to its home position.

- SKP PUSHBUTTON
  When pressed, causes the designator to make the next waypoint its home position.

- ENT PUSHBUTTON
  Enters the designator position into the FMS flight plan as the TO waypoint.

- JOYSTICK
  Position/s the designator on the MFD/or performs checklist page/line control.

- MAP/PLAN PUSHBUTTON
  Selects between the MAP and PLAN displays for the MFD.

- SRC PUSHBUTTON
  Selects between the FMS 1 and FMS 2 navigation source for display on the MFD.

- VOR PUSHBUTTON
  Selects VOR/DME stations for display on the MFD.

- RCL PUSHBUTTON
  Recalls the designator to its home position.

- SKP PUSHBUTTON
  When pressed, causes the designator to make the next waypoint its home position.

- ENT PUSHBUTTON
  Enters the designator position into the FMS flight plan as the TO waypoint.

- JOYSTICK
  Position/s the designator on the MFD/or performs checklist page/line control.

- MAP/PLAN PUSHBUTTON
  Selects between the MAP and PLAN displays for the MFD.

- SRC PUSHBUTTON
  Selects between the FMS 1 and FMS 2 navigation source for display on the MFD.

- VOR PUSHBUTTON
  Selects VOR/DME stations for display on the MFD.

- RCL PUSHBUTTON
  Recalls the designator to its home position.

- SKP PUSHBUTTON
  When pressed, causes the designator to make the next waypoint its home position.

- ENT PUSHBUTTON
  Enters the designator position into the FMS flight plan as the TO waypoint.

Weather Radar Controller

- RANGE PUSHBUTTONS
  The two range pushbuttons allow range selection from 5 to 300 NM full scale in the ON mode, or from 5 to 1000 NM full scale in the FP mode. The up arrow pushbutton selects increasing ranges, and the down arrow pushbutton selects decreasing ranges.

- TURB PUSHBUTTON
  Selects turbulence detection mode. Only usable in WX or RCT mode.

- GCR PUSHBUTTON
  Selects ground clutter reduction mode. Only usable in WX mode with a range of 55 miles or less.

- TGT PUSHBUTTON
  Enabled/disables target alert mode.

- SECT PUSHBUTTON
  Selects either full azimuth scan (120 degrees) or sector azimuth scan (60 degrees).

- MODE SELECTOR
  Selects weather radar operating mode.

- SLAVE ANNUNCIATOR
  Used in dual controller installations. Indicates the controller is off and slaved to other controller.

- LIGHTING SENSOR CONTROL
  Controls mode of operation of lightning sensor.

- TILT CONTROL
  Adjusts antenna tilt angle.
EFIS Display Controller

**BRG AND BRG SELECTORS**

When set to ADF 1, the associated bearing pointer on the EHSI displays the bearing to the station turned on the ADF system No.1. When set to ADF 2, the associated bearing pointer on the EHSI displays the bearing to the station turned on the ADF system No.2.

**DH/TST CONTROL/SWITCH**

Rotation of the DH/TST control/switch allows the decision height display on the EADI to be adjusted. Rotating the control fully counterclockwise removes the decision height display from the EADI.

**WX DIM INNER CONTROL**

Adjusts the brightness of the weather radar returns on the EHSI.

**WX PUSHBUTTON**

Selects weather radar returns for display on the EHSI. If the full compass is displayed prior to WX selection, pressing the WX pushbutton automatically selects the partial compass format to display with the weather radar returns.

**NOTE:**

- If an ILS/LOC frequency has been selected on the associated NAV while in FMS mode, pressing the V/L pushbutton once leaves the FMS in FMS mode and arms a phantom (magenta) selectable course arrow that automatically intercepts then changes to green after intercept. Pressing the V/L pushbutton a second time bypasses the phantom course and goes straight to VOR/LOC navigation.

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### Honeywell Laseref (ISDU) Control Head

- **DIMMER KNOB**: Controls the brightness of the display.
- **DSPL SEL SWITCH**: Selects the data to be shown on the digit display.
- **TEST**: Lights all display elements and the keyboard ENT and CLR cue lights. The switch is spring-loaded and must be held in this position.
- **WIND**: Selects the wind direction in degrees on the left display and the wind speed in knots on the right.
- **PPOS**: Selects the latitude on the left display and the longitude on the right.
- **HDG/STS**: Selects true or magnetic heading on the left display and time to complete alignment on the right.
- **ENT AND CLR KEYS**: Contain green cue lights which, when lit, indicate that operator action is required. CLR is used to remove data erroneously entered. ENT is used to send data to the ISDU.
- **DIGIT DISPLAY**: Shows data from the selected system.
- **KEYBOARD**: Enters initial data.

### Mode Selector Unit (MSU)

- **ALIGN ANNUNCIATOR**: Light illuminates when the IRS is in the ALIGN mode. After the IRS is aligned the align annunciator goes out. If flight of the flight is not continuous an excessive aircraft movement during alignment.
- **FAULT ANNUNCIATOR**: Illuminates to indicate that there is a fault in the IRS.
- **NAV ROY ANNUNCIATOR**: Illuminates to indicate that the alignment is complete.
- **TEST PUSHPUSHBUTTON**: Initiates a test sequence in which the IRS outputs three sets of specified test value sequentially. Used for maintenance purposes.
- **MODE SELECT SWITCH**: Selects the four IRS basic modes and the four submodes. Nav position is detented.
- **OFF – Turns off the IRS.
- **ALIGN – Turns the IRS on and selects the align mode. To complete the align mode, the initial position latitude and longitude must be entered into the IRS either from the FMS or the Lasertrak (LASERREF).
- **NAV – Selects the navigation mode if the align mode is successfully completed.
- **ATT – Selects the necessary ATT (attitude) mode for the IRS normally used when the NAV mode fails.

### Honeywell Lasertrak (NDU) Control Head

- **ON-OFF SWITCH**: Turns the IRS on and selects the align mode.
- **SYSTEM SELECT KEYBOARD**: Selects the IRU from which the displayed data originates. If the switch is set to OFF, the ISDU control card or receiver data is not valid.
- **DATA SELECT KEYBOARD**: Selects the system DSPL, SEL and TEST.
- **DATA ENTRY KEYBOARD**: Adds initial data.
- **FAULT ANNUNCIATOR**: Illuminates to indicate that the IRS is receiving power from the IRS back-up battery.
- **BATT FAIL ANNUNCIATOR**: Illuminates to indicate that the IRS back-up battery is supplying less than the minimum voltage required for IRS operation.
- **NO AIR ANNUNCIATOR**: Illuminates to indicate a cooling failure.

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July 1995
**Honeywell CD-800/810 Control Display Unit (CDU)**

**NOTE:** The CD-800 and CD-810 CDUs are identical in function, but differ slightly in size and the CRT display. The CD-900 is monochrome. The CD-810 is a color CRT display and is slightly larger in height and depth as compared with the CD-800.
### Collins VHF COMM Control Head

**Active Annunciator**
Flashes while the true active frequency differs from that shown on the display.

**RMT Annunciator**
Indicates when the VHF communication system is remotely tuned.

**Active Frequency Display**
Displays the active frequency, diagnostic messages, and memory channel numbers.

**Mem Annunciator**
Indicates when a stored frequency is displayed in the lower display.

**Volume Control**
Controls the reviver audio level.

**Mode Selector**
- OFF position: Removes power from the transponder.
- STBY position: Enables reception and disables transmission.
- ON position: Enables reception and transmission.
- ALT position: Enables reception and transmission and transmits barometric altitude in response to a mode c request.

**Dimming Sensor**
Automatically controls the brightness of the displays.

**Self-Test Pushbutton**
Initiates the transceiver self-test diagnostic routine.

**Store Pushbutton**
Enables the selected preset code to be selected and stored in the control unit memory.

**Active Pushbutton**
Enables the frequency select controls to directly return the transceiver active frequency. Enables the preset frequency display while direct tuning is in progress.

**Pre Pushbutton**
Enables the selected preset code to be stored in the non-volatile memory and recalls stored code for display.

### Collins ATC Transponder Control Head

**Active Annunciator**
Comes on while the codes are changed and flashes when the reply code does not match the displayed code.

**Ident Pushbutton**
Initiates transmission of a special ident pulse to the ground radar.

**Code Display**
Displays the selected code or diagnostic readout in case of failure.

**Mode Selector**
- OFF position: Removes power from the transponder.
- STBY position: Enables reception and disables transmission.
- ON position: Enables reception and transmission.
- ALT position: Enables reception and transmission and transmits barometric altitude in response to a mode c request.

**Dimming Sensor**
Automatically controls the brightness of the displays.

**Ident Pushbutton**
Initiates transmission of a special ident pulse to the ground radar.

**Test Pushbutton**
Initiates the transceiver self-test routine.

**Pre Pushbutton**
Enables the selected preset code to be stored in the non-volatile memory and recalls stored code for display.
### Collins VHF NAV Control Head

**PRESET FREQUENCY DISPLAY**
Displays preset (inactive) frequency and diagnostic messages. Shows DME frequency when HLD is selected.

**MEMORY ANNUNCIATOR**
Comes on when a preset frequency is shown in the preset frequency display.

**RMT ANNUNCIATOR**
Comes on while the DME is remotely tuned by the FMS.

**POWER AND MODE SELECTOR**
- OFF – Removes power from the DME and VOR systems.
- ON – Applies power to the DME and VOR systems.
- HLD – Holds the DME on the selected frequency while the VHF/NAV frequency is changed.

**LIGHT SENSOR**
Automatic display dimming sensor.

**TEST PUSHBUTTON**
Initiates the self-test diagnostic routine on the DME system.

**STORE PUSHBUTTON**
Allows preset frequencies to be selected and entered into memory.

**ACT PUSHBUTTON**
Enables the frequency selector to directly tune the DME and VHF/NAV.

**FREQUENCY SELECTORS**
Selects the DME and VOR frequencies simultaneously.

**XFR/MEM SWITCH**
- Allows transfer of a preset frequency into the active (XFR position).
- Loads stacked memory frequency into preset display (MEM position).

**ACT ANNUNCIATOR**
Comes on while the active frequency is changed. Stays on flashing if the tuning is incorrect.

**COMPARATOR ANNUNCIATOR**
Flashes when receiver tunes to an ADF frequency not the same as the active frequency displayed.

**ACTIVE FREQUENCY DISPLAY**
Indicates active frequencies and diagnostic messages.

**COLLINS VHF NAV Control Head**
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### Collins ADF Control Head

**PRESET FREQUENCY DISPLAY**
Indicates preset frequencies and diagnostic messages.

**MEMORY ANNUNCIATOR**
Indicates a preset frequency is displayed on the preset frequency display.

**VOLUME CONTROL**
Adjust audio level.

**POWER AND MODE SELECTOR**
- OFF – Turns on ADF receiver and selects operating mode.
- ANT – Selects preset active frequencies.
- TONE – Allows frequency selector to directly tune ADF receiver.

**ACT ANNUNCIATOR**
Indicates active frequencies and diagnostic messages.

**COMPARATOR ANNUNCIATOR**
Flashes when receiver tunes to an ADF frequency not the same as the active frequency displayed.

**ACTIVE FREQUENCY DISPLAY**
Indicates active frequencies and diagnostic messages.

**COLLINS ADF Control Head**
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**Challenger 601**
July 1995

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Pitot/Static System

An electrically heated pitot/static head on the left and right forward fuselage supplies pitot and static pressure to the pilot’s and copilot’s air data system. Each pitot/static head has two static ports. One supplies the pilot’s (S1); the other supplies the copilot’s (S2) pitot/static systems.

An electrically heated static port (S3), one on the left and one on the right fuselage, normally supply the cabin pressure indicator. If the pilot’s or copilot’s normal static source fails, placing the appropriate STATIC PRESSURE SELECTOR VALVE in the ALTERNATE SOURCE position isolates the normal static source and connects the alternate static source to the affected system.

If a fault occurs in the static system (i.e., erratic flight instruments), placing the associated STALL PROTECT SELECTOR VALVE in the CLOSED position isolates the stall protection system (SPS) altitude transducer from its static source.

A total air temperature (TAT) probe on the right forward fuselage supplies temperature data to the air data system.

**On S/Ns 3001 to 3066**, the pilot’s pitot/static system supplies the air data computer (ADC) and the pilot’s SPS altitude transducer while the copilot’s pitot/static system supplies the copilot’s Mach/airspeed indicator, altimeter, vertical speed indicator (VSI), and SPS altitude transducer.

**On S/N 5001 and subsequent**, the pilot’s pitot/static system supplies the No. 1 digital air data computer (DADC) and the pilot’s SPS altitude transducer while the copilot’s pitot/static system supplies the No. 2 DADC, copilot’s SPS altitude transducer, standby airspeed indicator, and altimeter.

Placing the STANDBY INSTR SELECTOR VALVES in the CLOSED position isolates the standby airspeed indicator and altimeter from their pitot/static pressure sources.
Air Data Computers

Normally, S/Ns 3001 to 3066 have a single air data computer (ADC) that receives pitot/static inputs from the pilot’s pitot/static system, temperature data from the TAT probe, and barometric setting from the pilot’s altimeter. With these inputs, the ADC supplies the:

- pilot’s altimeter, vertical speed indicator (VSI), and Mach/airspeed indicator
- TAS/SAT indicator
- No. 1 ATC transponder
- aural warning system
- stability augmentation, autopilot, and flight director computers.

Various supplemental Type Certificates (STCs) add a second air data computer to the copilot’s pitot/static system. This STC also replaces the copilot’s Mach/airspeed indicator, VSI, and driven with ADC-driven instruments.

S/N 5001 and subsequent have two digital air data computers (DADCs). The DADCs, supplied by the pitot/static system and TAT probe, compute air data functions and supply analog and digital outputs to the associated:

- pilot and copilot altimeter, vertical speed indicator, and Mach/airspeed indicator
- advisory display
- ATC transponders
- inertial reference units (IRUs)
- electronic flight instrument system (EFIS)
- flight guidance system computers
- flight management system.
Communications equipment includes:

- audio integrating system
- VHF communications
- HF communications
- SELCAL
- cockpit voice recorder (CVR).

**Audio Integrating System**

The audio integrating system ties the communication and navigation receiver audio inputs and outputs to the headsets, cockpit speakers, and microphones. The system consists of two audio amplifiers and a headphone, microphone, and oxygen mask microphone jack on the pilot’s and copilot’s consoles. Additional microphone and headphone jacks on the radio rack, nosewheel bay, and near the rear equipment bay connect with the pilot’s and copilot’s systems.

Switches on the audio panels select the audio input source and microphone output, adjust headset and speaker volume, and select other operating modes. Audio input sources include the:

- VHF and HF communications transceivers
- VHF navigation receivers
- ADF receivers
- ILS, DME, and marker beacon receivers.

**VHF Communications**

On S/Ns 3001 to 3066, the standard VHF communications package consists of two Collins VHF-20A transceivers each controlled by a Gables control head.
On S/N 5001 and subsequent, the VHF communications system consists of two Collins VHF-22B transceivers each controlled by a Collins CTL-22 control head.

An available supplemental type certificate (STC) replaces the standard Collins transceivers and control heads with the Honeywell Primus II SRZ-850 integrated radio system. This installation consists of two RCZ-85X integrated communications units with each having a transceiver module controlled by a RM-850 radio management unit (RMU). The RM-850 RMU also controls the VHF navigation, ADF, and transponder systems. An optional clearance delivery unit (CDU) allows use of a VHF transceiver without powering up the entire system.

HF Communications

A typical HF communications equipment installation consists of two Collins HF transceivers connected to separate control heads. These transceivers provide long range communications capabilities in the 2.000 to 29.999 MHz frequency range. Operating modes include upper and lower sideband (USB and LSB), amplitude modulation (AM), frequency modulation (FM), and continuous wave (CW) with simplex or full duplex operation.

Cockpit Voice Recorder

A cockpit voice recorder (CVR) records all cockpit conversations through a remote microphone and the pilot’s, copilot’s, and third crewmember’s microphones. The CVR recorder unit in the aft equipment bay is in a crash resistant case that protects it from extreme forces. With the aircraft on the ground and the parking brake set, two relays close to enable the CVR’s ERASE switch. Pressing the ERASE button for at least two seconds erases the entire CVR tape.

The system’s noise suppressing microphone and an interface with the audio control amplifiers ensure that the recorder captures all conversations for post-accident analysis.
Navigation

Navigation equipment includes:
- VHF navigation
- long range navigation
- automatic direction finding (ADF)
- distance measuring equipment (DME)
- attitude and optional heading reference systems (AHRS)
- traffic alert and collision avoidance system (TCAS)
- flight data recorder (FDR).

**VHF Navigation**

On S/Ns 3001 to 3066, VHF navigation equipment includes two Collins VHF navigation receivers controlled by separate Gables control heads. The units interface with the attitude director indicators (ADIs), horizontal situation indicator (HSI), flight director computer, VNAV computer/controller, radio magnetic indicators (RMIs), and the audio control units.

On S/N 5001 and subsequent, VHF navigation equipment includes two Collins VIR-32 navigation receivers controlled by separate Collins navigation control units. The units interface with the electronic flight control system (EFIS) symbol generators, FMS computers, and the audio control units.

Both types of receivers cover the 108.00 through 117.95 MHz range and the 40 localizer/glideslope channels. Tuning a VOR station automatically selects the appropriate DME channel.

**Long Range Navigation**

On S/Ns 3001 to 3066, long range navigation is optional. Various combinations of equipment may be found on the aircraft. Among the possibilities are very low frequency (VLF) Omega, Loran and Inertial Navigation. Refer to the individual Aircraft Flight Manual for installed equipment and operating procedures.
On S/Ns 5001 and subsequent, aircraft are equipped with two or a third optional Laseref inertial reference system integral with a Honeywell SPZ-8000 digital automatic flight control system with dual FMS configuration. This system blends a number of navigational signals to form a blended FMS position with a high degree of accuracy for long range navigation. Optional additional equipment, such as GPS may be installed, further augmenting the accuracy and versatility of the system.

Automatic Direction Finding

Automatic direction finding equipment, operating in the 190 to 1749.5 kHz frequency range, provide aircraft relative bearing to a transmitting station through the HSIs, radio RMI, or, if installed, electronic flight instrument system. The receivers also provide audio outputs to the audio control panels for navaid identification purposes and reception of AM broadcast stations.

On S/Ns 3001 to 3066, the installation consists of a single Collins ADF-60A receiver, Gable control head, two RMI, and an ADF antenna.

On S/N 5001 and subsequent, the installation consists of two Collins ADF-462 receivers, two CTL-62 control units, and a single antenna. The units interface with the EFIS symbol generators, FMS navigation control units, and audio control units.

Distance Measuring Equipment

Distance measuring equipment (DME) computes and provides slant range distance between the aircraft and a DME ground station. It also computes and provides aircraft ground speed and time to station information. Selecting a VOR frequency through the appropriate VHF NAV receiver control head automatically selects the associated DME channel.

On S/Ns 3001 to 3066, the installation consists of two Collins DME-40 receiver/transmitters and two DME antennas on the lower fuselage. The units interface with the flight director computers, HSIs, and the vertical navigation computer/controller.
On S/N 5001 and subsequent, the installation consists of two Collins DME-42 receiver/transmitters and two DME antennas on the lower fuselage. The units interface with the VHF NAV control units, EFIS symbol generators, FMS navigation control units, and audio control panels.

**ATC Transponders**

On S/Ns 3001 to 3066, the transponder system consists of two Collins TDR-90 transponders, a transponder control unit, and two antennas. The No. 1 transponder receives altitude data from the air data computer (ADC) and the No. 2 transponder receives altitude data from the copilot’s altimeter. On installations with two ADCs, No. 2 altitude data is from the No. 2 ADC.

On aircraft with TCAS installed, the original transponders are replaced with Mode S compatible units.

On S/N 5001 to 5117, the installation consists of two Collins TDR-90 transponders, a control unit, and two antennas. The units receive altitude data from the DADCs. The transponders also interface with the FMS navigation control unit.

On S/N 5118 and subsequent, the aircraft has Mode S compatible Collins TDR-90 transponders interfaced with TCAS instead of the TDR-90 units.

**TCAS**

Optional traffic alert and collision avoidance systems (TCAS) manufactured by Honeywell, Collins, or Bendix provide increased flight safety by alerting the crew to potential conflicts with other traffic. Typically, the Bendix and Collins installations replace the conventional analog vertical speed indicator (VSI) with a liquid crystal display unit. The Honeywell system usually removes the VSIs and moves the VSI and TCAS display to the EFIS displays.
Interfaced with Mode S compatible transponders, TCAS II periodically interrogates and tracks other aircraft transponder-equipped in the aircraft’s immediate vicinity. Provided with transponder signals from other aircraft, the TCAS computer predicts expected flight paths in relation to its aircraft.

Through a compatible vertical speed indicator or the EFIS displays, the system provides four different symbols to represent traffic that:

- does not pose a threat to the aircraft
- is in the immediate area and has a threat potential
- poses a threat to aircraft (aircraft’s warning area)
- poses an immediate threat (aircraft’s caution area).

If the traffic has an operating Mode C or Mode S transponder, TCAS II also displays next to the traffic’s symbol the relative altitude in relation to the aircraft and whether it is climbing or descending.

If traffic poses a threat to the aircraft, TCAS II provides aural and visual resolution advisories (evasive maneuvers) to create adequate separation between the aircraft and traffic. These advisories include the recommended climb or descent rate that will provide the adequate separation. They also include climb and descent rates that the crew should avoid.

**Flight Data Recorder**

An optional digital flight data recorder (FDR), interfaced to various aircraft and engine systems through a data acquisition unit, records approximately 25 hours of aircraft operating data with a time signal for latter analysis. An accelerometer separate from the normal navigation systems provides aircraft acceleration data in the pitch, roll, and yaw axes.
The recorder unit, housed in a crash resistant container in the aft equipment bay, records data digitally with parking brake release or main entrance door closing. The recorder stops after application of the parking brake, the opening of a door, or because of a high G impact.

**Attitude and Heading Systems**

**On S/N 3001 to 3066**, a system of vertical gyros, rate gyros, directional gyros, and accelerometers provide aircraft pitch, roll, yaw, heading, and acceleration data to the flight director, autopilot system, and the horizontal situation indicator (HSI).

Supplemental type certificates (STCs) exist to replace most of the components of the flight director system with an electronic flight instrument system (EFIS).

**On S/N 5001 and subsequent**, an inertial reference system (IRS) based on ring laser gyros (IRS) provides very accurate aircraft attitude, heading, velocity, and position data to the flight guidance, flight management, and electronic display systems.

The installation consists of two or three (optional) inertial reference units (IRUs), mode select unit (MSU), Laseref inertial system display unit (ISDU) or Lasertrak navigation display unit (NDU), and dedicated battery packs. The IRS interfaces with its various components and other navigation systems through ARINC 429 buses and an avionics standard communications bus (ASCB).

The selector unit (MSU) selects the operating modes for the IRUs and AHRS, initiates the IRU test mode, and provides annunciatiions of individual system status.

Through the FMS CDU, Lasertrak (NDU), or Laseref (ISDU), the flight crew selects the desired IRU and system operating modes. The flight crew also enters the aircraft's current longitude and latitude for IRU initialization and selects the desired IRU for display. The crew can also display the aircraft's track, ground speed, position and current wind direction, and speed. The unit has a keyboard, mode select switches, and display screen.
Electronic Flight Instrument System

On S/N 5001 and subsequent, an electronic flight control system (EFIS) consisting of an electronic attitude director indicator (EADI), electronic horizontal situation indicator (EHSI), multifunction display (MFD) driven by three symbol generators, and an advisory display replaces the conventional flight director instruments.

A reversionary feature in this system reduces the possibility of a fault hindering normal system operation by moving an operating display to a failed unit’s display.

Automatic Flight Control System

Automatic flight control systems combine the functions of an autopilot, flight director, yaw damper, and trim systems in an integrated system.

On S/Ns 3001 to 3066, the factory installation consists of a Honeywell SPZ-600 automatic flight control system that consists of:

- dual channel SP-600 three-axis autopilot
- two FZ-500 flight director computers
- pilot and copilot attitude director indicators (ADIs) and horizontal situation indicators (HSIs)
- SZ-600 stability augmentation system (yaw damper and Mach trim)
- AZ-242 air data system (ADC)
- directional gyros, vertical gyros, and accelerometers.
Avionics

STCs are available to replace the conventional ADIs and HSIs with Bendix, Collins, or Honeywell electronic flight instrument systems. Some STCs also replace the standard weather radar indicator with a multi-function display (MFD).

On S/N 5001 and subsequent, the aircraft has a Honeywell SPZ-8000 digital automatic flight control system (DAFCS). The SPZ-8000 installation includes:

- FMZ-800/900 flight management system (FMS)
- dual DFZ-800 flight guidance system (flight director)
- dual EDZ-815 electronic flight instrument system (EFIS)
- dual ADZ-810 air data system (ADS)
- MDZ-815 multifunction display (MFD)
- AA-300 radio altimeter
- Primus 650 or Primus 870 weather radar
- two or three unit Laseref inertial reference system (IRS).

The various SPZ-8000 components exchange data through an avionics standard communications bus (ASCB). An ARINC 429 standard communications bus connects the SPZ-8000 components with other avionics equipment.