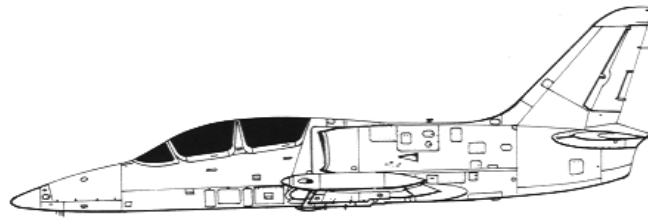


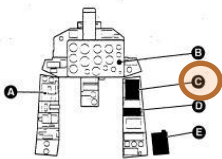
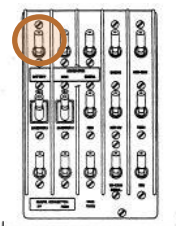
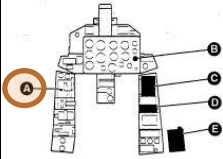
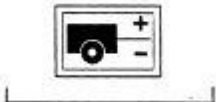
DCS L-39 ALBATROS

STARTUP CHECKLISTS

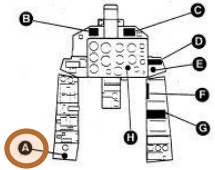

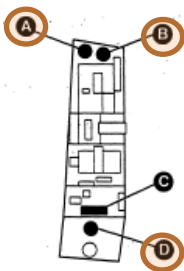
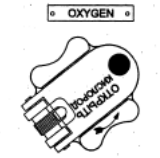

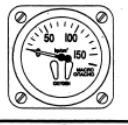
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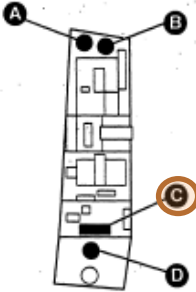
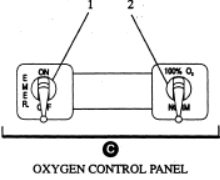
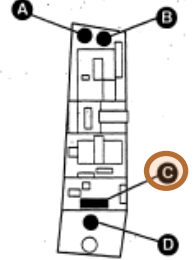
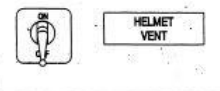
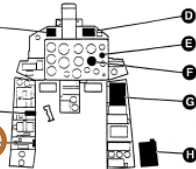
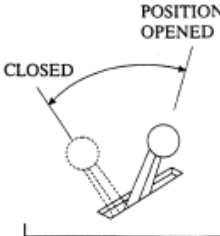
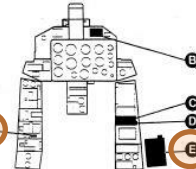
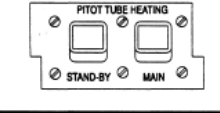
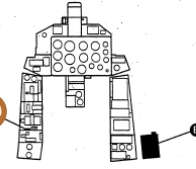
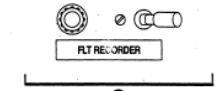


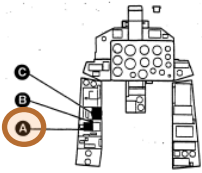
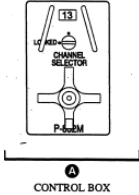
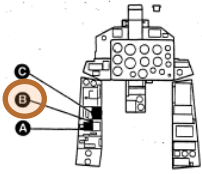
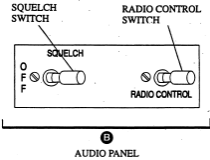
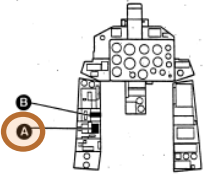
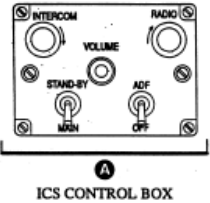
INTERIOR INSPECTIONS

| | | | | |
|-----------|---|--|---|---|
| 1. | BATTERY SWITCH | ON | | |
| | Keyboard command: | |  |  <p style="text-align: center; font-size: small;">MAIN C/B SWITCH PANEL</p> |
| | The battery switch provides battery or external power supply to the aircraft. | | | |
| | An emergency DC power source is provided by a 24 V, 28 Ah battery located in the nose compartment LH side. It is controlled by the "BATTERY" switch located in the main CB/switch panel in the forward cockpit (and by the "NETW." switch in the aft cockpit). When power is supplied by the battery only, the IFF and RSBN systems are disconnected automatically. | | | |
| 2. | EXTERNAL POWER INDICATOR | ILLUMINATES (WHEN EXTERNAL POWER SOURCE ATTACHED) | | |
| | Keyboard command: N/A | |  |  <p style="text-align: center; font-size: small;">EXTERNAL POWER INDICATOR LIGHT</p> |
| | An external power receptacle for connecting an external power source is located on the fuselage left side. | | | |

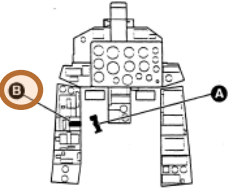
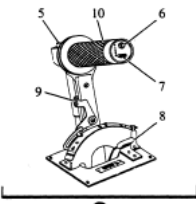
LEFT CONSOLE

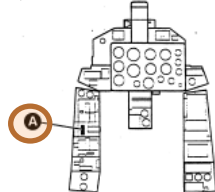
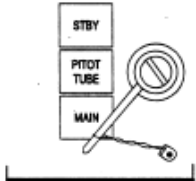
| | | | | |
|-----------|---|--------------------|---|---|
| 1. | FLIGHT SUIT VENTILATION | AS REQUIRED | | |
| | Keyboard command: | |  |  <p style="text-align: center; font-size: small;">FLIGHT SUIT VENTILATION CONTROLLER</p> |
| | The flight suit ventilation controller controls air flow passing to ventilation flight suit of both fwd and aft pilots. The controller, placarded "SUIT VENTILATION", is located on the left console in each cockpit. Rotating the controller CW increases the air flow. | | | |
| | | | | |
| 2. | OXYGEN SUPPLY | OPEN (CCW) | | |
| | Keyboard command: | |  |  <p style="text-align: center; font-size: small;">OXYGEN SUPPLY VALVE</p> |
| | Each pilot receives his oxygen supply through a separate pressure line, delivered from two cylinders and one spherical bottle. However, when the pressure decreases, the lines can be interconnected so that the oxygen may be used to supply the other one. A pressure reducer in each circuit provides reduced oxygen pressure to the diluter demand regulator. | | | |
| | Both forward and aft pilots are equipped with an oxygen mask; the oxygen system installation in the forward cockpit has a provisions to use an altitude compensating flight suit with hermetized pressure helmet. | | | |
| | The pilot breathes ambient air up to flight altitude 2,000 m, from that altitude up to 8,000 m a mixture of air and oxygen. The ratio between air and oxygen depends on the cabin altitude. From flight altitude 8,000 m the pure oxygen is supplied to the mask. The mixture or oxygen is delivered to the mask either in dependence on pilot's breathing or pressurized pure oxygen can be continuously supplied if needed. | | | |
| | The oxygen shut-off valve, labeled "OXYGEN", is installed in the aft part of left console in each cockpit. The valve has two positions: CLOSED and OPEN. The valve, when turned CCW, opens the oxygen supply system. | | | |
| | | | |  <p style="text-align: center; font-size: small;">HELMET OXYGEN PRESSURE INDICATOR</p> |
| | | | |  <p style="text-align: center; font-size: small;">OXYGEN PRESSURE AND FLOW INDICATOR</p> |

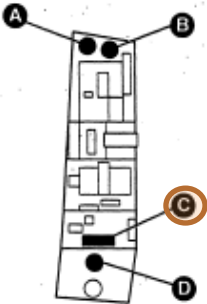
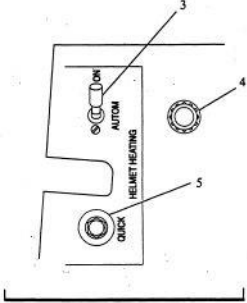
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| <p>3. OXYGEN CONTROLS - DILUTER DEMAND SWITCH - EMERGENCY SWITCH</p> | <p>NORM OFF</p> |  |  <p>OXYGEN CONTROL PANEL</p> |
| <p>Keyboard command: Diluter Demand Switch (2) The diluter demand switch is located on an oxygen control panel and has two positions: "100% O₂" and "NORM". In the "NORM" position oxygen is supplied by the regulator depending on cabin altitude and pilot's needs. In the "100% O₂" position pure oxygen is delivered continuously.</p> <p>Emergency Oxygen Switch (1) The red background switch "EMER" has two positions: "OFF" and "ON". For normal operation the switch is set to "OFF". When the pressure regulation in the diluter demand regulator fails, the switch shall be moved to "ON" position and the oxygen is delivered with positive pressure to the oxygen mask, with no regulation.</p> | | | |
| <p>4. HELMET VENTILATION</p> | <p>AS REQUIRED</p> |  |  <p>HELMET VENTILATION SWITCH</p> |
| <p>Keyboard command: The helmet ventilation system exhausts carbon dioxide from the helmet space and blows on the pilot.</p> <p>When flight is executed with oxygen mask, helmet ventilation switch to OFF. When with pressurized helmet, ON position.</p> | | | |
| <p>5. FUEL SHUT-OFF LEVER</p> | <p>FORWARD AND GUARDED</p> |  |  <p>FUEL SHUT-OFF LEVER</p> |
| <p>Keyboard command: A fuel shut-off valve is installed in the fuel line, leading to the HP pump, at the outlet of the fuel tank No. 5. The valve is mechanically controlled and operated from either cockpit by a lever "FUEL SHUT-OFF VALVE". The valve is in open position when the lever is fully pushed forward. In this position the lever should be safety wired and guarded by a red cover.</p> | | | |
| <p>6. PITOT HEAT BUTTONS</p> | <p>OFF</p> |  |  <p>PITOT TUBE HEATING BUTTONS</p> |
| <p>Keyboard command: Each Pitot tube is equipped with a heating element to prevent ice accumulation. The elements are powered by 27 V DC and protected by two C/Bs labeled "PITOT TUBE MAIN" and "PITOT TUBE STAND-BY", located on the aft CB/switch panel (E) in the forward cockpit.</p> | | | |
| <p>7. FDR SWITCH</p> | <p>OFF GREEN LIGHT ILLUMINATES</p> |  |  <p>FDR SWITCH</p> |
| <p>Keyboard command: The FDR, located on the LH side of the fuselage aft section, records various A/C flight parameters. The recording is done on a solid state EPROM PCB which has a capacity of 1 MB, equivalent to approximately 8 data hours.</p> | | | |

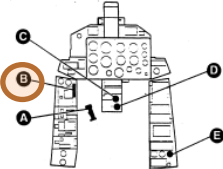
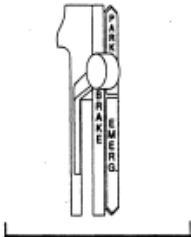
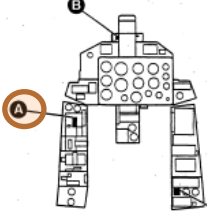

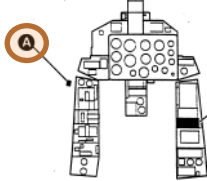

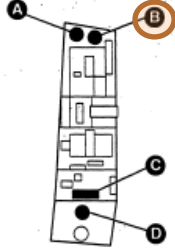
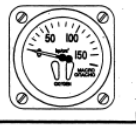
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| <p>8. RADIO SET CONTROL BOX</p> | <p>SET</p> | | |
| <p>Keyboard command:</p> | | | |
| <p>R-832M VHF/UHF RADIO: Two band VHF/UHF radio provides line-of-sight communications. The radio does not have a provision to select individual frequency, but one of 20 preset channels can be selected. Frequency range is from 118 to 140 MHz at VHF band and from 220 to 389.95 MHz at UHF band. The UHF/VHF radio control boxes are located on the left console in each cockpit. They operate in tandem connection being switched by "RADIO CONTROL" switch in each cockpit's audio panel. The operating control box is determined by illuminating channel window. Transmissions are made by pressing one of the PTT buttons located on the throttle grips in each cockpit. The radio is powered by 28 V DC and 115 V AC at 400 Hz from the inverter I or inverter II, and is activated by "RDO" switch in the main CB/panel in the forward cockpit.</p> <p>UHF/VHF RADIO CONTROL BOX: Preset Channel Selector: The preset channel selector permits the selection of one of 20 preset frequencies. The selected channel number can be read in the channel window. Memory Screw: Rotating the screw, the mechanical memory card can be removed from the control box, and the new memory card with different selection can be inserted.</p> | |  |  |
| <p>9. AUDIO PANEL</p> | <p>SET</p> | | |
| <p>Keyboard command:</p> | | | |
| <p>Radio Control Switch: The switch is labeled "RADIO CONTROL" and permits to change the radio controls. Each movement of the switch, no matter in which cockpit, changes the existing box in command to the other one, i.e. the control over the radio can either be "taken" or "handed over". The channel window will illuminate to indicate control of the radio box in respective cockpits.</p> <p>Squelch Switch: The switch in on position enables squelch circuit which helps to eliminate background noises during normal reception. In OFF position the squelch circuit is disabled to permit unhampered use of a weak signal.</p> | |  |  |
| <p>10. ICS CONTROL BOX</p> | <p>SET</p> | | |
| <p>Keyboard command:</p> | | | |
| <p>The intercom control box is located in both cockpits on the left console. Intercom controls are:</p> <p>ICS Volume Knob: The "INTERCOM" volume knob controls the volume of the intercom audio signal to the headset in the respective cockpit. The volume increases by rotating the knob in the arrow direction.</p> <p>Radio Volume Knob: The knob is labeled "RADIO" and controls</p> | |  |  |

| | | | |
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| <p>the volume of radio audio signal to the headset in the respective cockpit. The volume increases by rotating the knob in the arrow direction.</p> <p>Radio Control Switch: The "STAND-BY/MAIN" radio control switch, when switched to the "STAND-BY" position, connects parallel the headset to ICS amplifier in the next cockpit. The switch function is to stand-by the ICS in case of the next cockpit intercom amplifier malfunction. When in "STAND-BY" position, all controls are deactivated.</p> <p>ADF Audio Switch: The "ADF/OFF" audio switch, when switched to the "ADF" position, enables to listen to the ADF beacon signal in the pilot's headset.</p> | | | |
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| <p>11. THROTTLE</p> <p>Keyboard command:</p> <ul style="list-style-type: none"> 5. Intercom Button 6. PTT Button 7. Speed Brakes Switch 8. Throttle Friction Pawl 9. Finger-lift STOP 10. Target Framing Grip | <p>FULL AND FREE MOVEMENT</p> |  |  <p>FWD THROTTLE GRIP</p> |
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| <p>12. PITOT TUBE SELECTOR</p> <p>Keyboard command:</p> <p>The Pitot tube selector lever, located on the left console in the forward cockpit, is labelled "PITOT TUBE". It is a manually operated selector valve with positions marked "MAIN" and "STBY". With the lever at the "MAIN" position, the system is fed by pressure from the RH Pitot tube. "STBY" is the position to be selected for the backup (left) system (except the static pressure to the cabin pressure regulator which is still supplied from the RH Pitot tube).</p> | <p>MAIN</p> |  |  <p>PITOT CONTROLS</p> |
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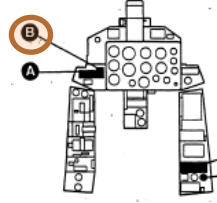
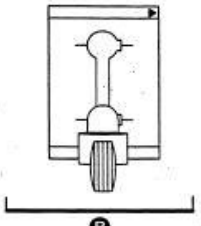
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| <p>13. HELMET VISOR HEAT. PANEL</p> <p>Keyboard command:</p> <p>When the helmet visor becomes fogged during flight, it can be electrically heated. The helmet visor heating control panel is located on the forward cockpit left console. The visor heating system is protected by "SEAT/HELMET" C/B located on the aft CB/switch panel.</p> <p>Helmet Visor Heating Switch: When in "ON", the visor is automatically defogged only if required. The next position will switch off the automatic heating.</p> <p>Helmet Visor Quick Heating Button: In case of sudden visor fogging, the "QUICK" push-button should be depressed and held, thus applying maximum intensive helmet visor heating.</p> <p>Temperature Knob: Turning the knob, the current utilized by the visor heating system is increased or decreased.</p> | <p>AS REQUIRED</p> |  |  <p>HELMET VISOR HEATING CONTROL PANEL</p> |
|---|---------------------------|--|---|

| | | | |
|-------------------|---|-------------------------------------|---|
| | <p>3. Helmet Visor Heating Switch 4. Temperature Controller 5. Quick Heating Button</p> | | |
| <p>14.</p> | <p>EMERGENCY PARKING BRAKE LEVER</p> | <p>FORWARD (APPLY)</p> |   <p>EMERGENCY/ PARKING BRAKE CONTROL HANDLE</p> |
| | <p>Keyboard command:</p> | | |
| | <p>PARKING BRAKES: By moving the "PARKING/EMERG. BRAKE" lever, in the forward cockpit, to the forward position, the parking brakes are set utilizing the emergency hydraulic circuit. The wheel brakes operate only when a minimum pressure of 50 kg/cm² is applied to the main circuit. If the main pressure falls below this value, the wheel brakes can't be used normally and emergency braking is required.</p> <p>EMERGENCY OPERATION: If no pressure is available in the main circuit, the brakes can still be operated, using the pressure stored in the emergency accumulator. In this case, however, the brakes are not applied by means of the brake lever but by operation of the emergency brakes lever. The lever is placarded "EMERGENCY BRAKE" and located on the left console in either cockpit. When applying emergency brakes (moving the lever backwards) the pressure 2 to 33 kp/cm² is derived from the emergency circuit. In this case, no differential braking is possible, since the hydraulic pressure acts simultaneously and equally on both brakes and the antiskid system will be by-passed.</p> | | |
| <p>15.</p> | <p>INSTRUMENT LIGHTS CONTROL</p> | <p>WHITE</p> |   <p>INSTRUMENTS LIGHTS CONTROL PANEL</p> |
| | <p>Keyboard command:</p> | | |
| | <p>Each instrument on the instrument panel, in both cockpits, is equipped with red or white bulbs for indirect illumination. The instrument lights are controlled per cockpit, by the switch and knob located on instrument lighting control panel labeled "INSTRUM LIGHTS". The instrument lighting switch has three positions: Center: OFF position Forward: Main. Primary red lights set. Backward: Auxiliary. Secondary white lights set.</p> | | |
| <p>16.</p> | <p>LANDING / TAXI LIGHT SWITCH</p> | <p>OFF</p> |   <p>TAXI AND LANDING LIGHTS CONTROL SWITCH</p> |
| | <p>Keyboard command:</p> | | |
| | <p>A combined double filament landing/taxi light is mounted to the tip of each wing tip tank. The difference between these lights is that the landing light filament beam covers a larger all-round pattern.</p> | | |
| <p>17.</p> | <p>OXYGEN PRESSURE INDICATOR</p> | <p>150 kg/cm²</p> |   <p>OXYGEN PRESSURE AND FLOW INDICATOR</p> |
| | <p>Keyboard command:</p> | | |
| | <p>The oxygen pressure indicator consists of two independent instruments in one body: oxygen pressure indicator and flow indicator. The oxygen pressure indicator is located on the forward left console in each cockpit to indicate pressure of the HP oxygen subsystem. The scale is graduated from 0 to 165 kp/cm². Normal system pressure is between 30 and 150 kp/cm², depending on oxygen consumption. The flow indicator constitutes the lower part of the instrument.</p> | | |

NOTE

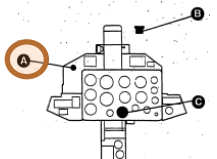

When temperature is below zero degrees of Celsius, the pressure can drop down to 130 kg/cm²

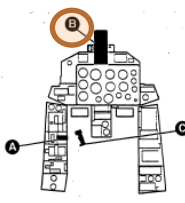
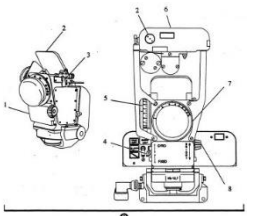
INSTRUMENT PANEL

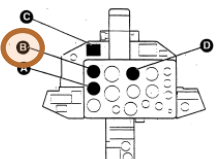

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| 1. | L/G CONTROL LEVER | DOWN |  |  <p>L/G CONTROL LEVER (TYPICAL)</p> |
| | Keyboard command: The landing gear operation is executed by landing gear control lever, located on the LH side of instrument panels in both cockpits. In its lower position the landing gear is extended (down), in the upper position of the lever the landing gear is retracted (up). The aft cockpit landing gear control lever has an additional middle neutral position, allowing to control landing gear position by fwd cockpit controller. | | | |

NOTE

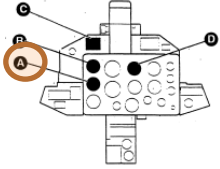
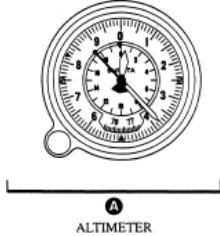
The L/G lever in the aft cockpit shall be in neutral (center) position.

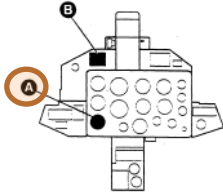
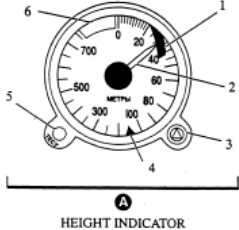
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| 2. | ACCELEROMETER | RESET CHECK "+1 G" |  |  <p>ACCELEROMETER</p> |
| | Keyboard command: Two independent accelerometers are installed on the instrument panels, one in each cockpit. In addition to the instantaneous "g" pointer, there are two recording pointers, one for positive and one for negative "g" loads, which follows the instantaneous pointer to its maximum attained travel. The recording indicating pointer, thus providing a record of maximum "g" loads encountered. To reset the recording pointers to the normal "1 G" position, the button on the lower right side of the instrument shall be pressed. The scale of the instrument is graduated from - 5 to + 10 with the 0 "g" indication at the twelve o'clock position. | | | |
| Limitations: - "+8" max for the a/c weight up to 4,200 kg - "-4g" max for the a/c weight up to 4,200 kg | | | | |

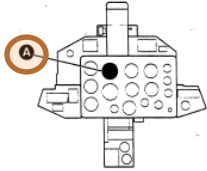
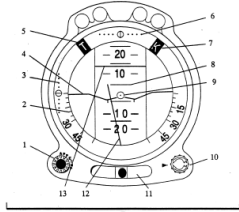
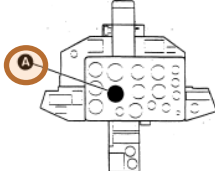
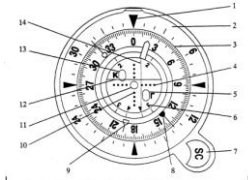
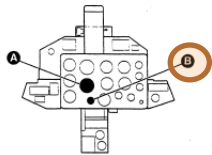

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|--|--|--------------|---|---|
| 3. | GUN SIGHT - GYRO UNIT ARRESTMENT LEVER | FIXED |  |  <p>GYROSCOPIC SIGHT CONSOLE</p> |
| | Keyboard command: When the two position gyro unit arrestment lever is set to "GYRO" position, the gyro unit free movement is established and the aiming reticle can displace on the optical combiner according to flight conditions. In "FIXED" position the gyro unit is arrested and the aiming reticle is fixed. | | | |
| 1. Gyroscopic Sight 2. Optical Combiner 3. Mechanical Sight Control Lever 4. Arrestment Lever 5. Target Range Scale 6. Gun Camera 7. Target Dimension Selector 8. Brightness Knob | | | | |

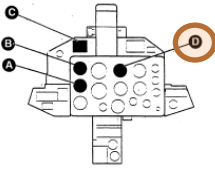
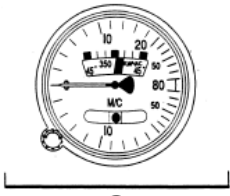
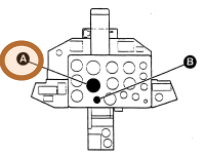

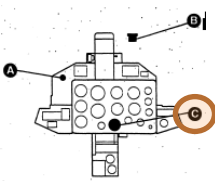
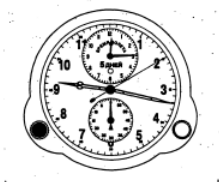
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| 4. | AIRSPPEED / MACH INDICATOR | CHECK |  |  <p>MACH-IAS-TAS INDICATOR</p> |
| | Keyboard command: The Mach-IAS-TAS indicator, located on the instrument panel in each cockpit, provides indications for the indicated airspeed, true airspeed and Mach number. Two pointers (the wider for IAS and the thinner for TAS), indicate the airspeed on the fixed dial. The IAS pointer indicates airspeed from 100 to 1,200 km/h while the TAS pointer indicates airspeed from 300 to 1,200 km/h. The corresponding Mach number is indicated by means of a yellow pointer in a window from 0.5 to 0.9 M. The Mach meter also incorporates the air speed sensor for automatic deployment of | | | |

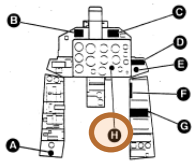

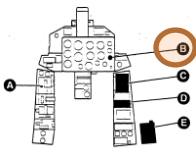

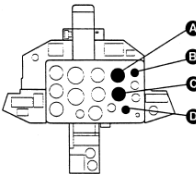



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| <p>the speed brakes at 0.78 ± 0.02 Mach and illuminating of the "M_{MAX}" warning light.</p> <p>Limitations:</p> <ul style="list-style-type: none"> - 910 km/h IAS max for configuration without external stores - 0.8 M (the speedbrakes extend automatically at 0.78 ± 0.02 M) | | |
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| <p>5. ALTIMETER</p> | <p>SET</p> |  |  <p style="text-align: center;">A ALTIMETER</p> |
| <p>Keyboard command:</p> <p>The altimeter located on the instrument panel in each cockpit, indicates aircraft altitude in meters. The two pointer altimeter has two concentrically mounted pointers coded in length and shape. The short thick inner pointer indicates the altitude from 0 to 20,000 meters in 1,000 meters increments and the long outer pointer indicates increments of 100 meters and pans of hundreds. The smallest graduation is 10-meter increments. The knob located in the left lower part of the instrument provides a barometric pressure setting from 670 to 790 mm of mercury column.</p> | | | |

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| <p>6. RADAR ALTIMETER</p> | <p>CHECK INDICATION SET DANGEROUS HEIGHT</p> |  |  <p style="text-align: center;">A HEIGHT INDICATOR</p> |
| <p>Keyboard command:</p> <p>The radio altimeter provides a read-out of absolute height from 0 to 750 meters over terrain and water. It consists of a transmitter-receiver, two antennas (one transmitting and one receiving) and two height indicators, one in each cockpit.</p> <p>The radio altimeter circuit is switched on by the "MRP RV" switch located on the forward cockpit main C/B switch panel and it is powered by 28 V DC and 115 V AC 400Hz from the inverter I (or inverter II).</p> <p>HEIGHT INDICATOR:</p> <p>The height indicator display is unevenly graduated; height from 0 to 20 meters are graduated in 2 meter increments, from 20 to 100 meters in 10 meter increments and from 100 to 750 meters in 50 meter increments, hence providing a more detailed read-out when the aircraft is at low heights.</p> <p>A pointer moves along the scale from 0 (on the ground) to over 750 m where it is hidden behind a black scale sector to be exposed as the A/C descends below 750 m. The red flag appears when receiver does not have any signal or whenever the radio altimeter does not operate.</p> <p>DANGEROUS HEIGHT WARNING:</p> <p>A decision height (DH) knob is located on the bottom RH corner of each height indicator. By rotating the knob, a DH pointer moves at the direction of the rotation, along the scale. When the height pointer indicates a height which is equal to or below the height at which the DH pointer is set to, the "DANGEROUS ALTITUDE" light will illuminate in the respective cockpit on the warning panel accompanied by a time limited (7 sec approximately) audio warning to the pilot's headset and a yellow dangerous height warning light on each height indicator.</p> | | | |

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| <p>7. ADI</p> | <p>CHECK ILLUMINATING RED</p> |  |  <p>ATTITUDE DIRECTOR INDICATOR, ADI</p> | | | | | | | | | | | | |
| <p>Keyboard command:</p> <p>The ADI, one in each cockpit is a servoed repeater indicator, which consists of an artificial horizon displayed in relation to an A/C symbol, with RSNB localizer and glide slope indications, SDU remote command landing system pointers and a slip indicator. The ADI receives and displays inputs from an AGD artificial horizon gyro unit. RSNB short-range radio navigation and landing system and from the SDU remote command landing system. The ADI indicator is powered by 27 V DC and 36 V AC 400 Hz. The indicator is activated by the "AGD-GMK" switch located on the forward cockpit main C/B switch panel.</p> <table border="0"> <tr> <td>1. Arresting Button</td> <td>8. Bank Angle Scale</td> </tr> <tr> <td>2. Pitch Angle Scale</td> <td>9. Miniature Aircraft Symbol</td> </tr> <tr> <td>3. Glideslope Deviation Scale</td> <td>10. Bank Trim Knob</td> </tr> <tr> <td>4. Pitch Angle Indicator</td> <td>11. Slip Indicator</td> </tr> <tr> <td>5. SDU-Warning Flag-T</td> <td>12. SDU Pitch Pointer</td> </tr> <tr> <td>6. Localizer Deviation Scale</td> <td>13. SDU Bank Pointer</td> </tr> <tr> <td>7. SDU Warning Flag - K</td> <td></td> </tr> </table> | | | | 1. Arresting Button | 8. Bank Angle Scale | 2. Pitch Angle Scale | 9. Miniature Aircraft Symbol | 3. Glideslope Deviation Scale | 10. Bank Trim Knob | 4. Pitch Angle Indicator | 11. Slip Indicator | 5. SDU-Warning Flag-T | 12. SDU Pitch Pointer | 6. Localizer Deviation Scale | 13. SDU Bank Pointer |
| 1. Arresting Button | 8. Bank Angle Scale | | | | | | | | | | | | | | |
| 2. Pitch Angle Scale | 9. Miniature Aircraft Symbol | | | | | | | | | | | | | | |
| 3. Glideslope Deviation Scale | 10. Bank Trim Knob | | | | | | | | | | | | | | |
| 4. Pitch Angle Indicator | 11. Slip Indicator | | | | | | | | | | | | | | |
| 5. SDU-Warning Flag-T | 12. SDU Pitch Pointer | | | | | | | | | | | | | | |
| 6. Localizer Deviation Scale | 13. SDU Bank Pointer | | | | | | | | | | | | | | |
| 7. SDU Warning Flag - K | | | | | | | | | | | | | | | |
| <p>8. RMI</p> | <p>CHECK</p> |  |  <p>RADIO MAGNETIC INDICATOR, RMI</p> | | | | | | | | | | | | |
| <p>Keyboard command:</p> <p>The RMI, one in each cockpit, is a served repeater indicator, which represents a bird view of the aircraft in relation to the navigation facilities. It provides magnetic heading indication, selected course deviation indication, station bearing and relative bearing information, glide-slope and localizer deviation information, and BOX landing pattern information. The RMI receives its inputs from GMK directional gyro, ADF and RSNB. The RMI is powered by 27 V DC and 3 x 36 V AC at 400 Hz. Individual indications arc controlled by "AGD-GMK", "RSNB" and "INVERTOR" CB/switches, located on the aft CB/switch panel in the forward cockpit.</p> <table border="0"> <tr> <td>1. Upper Lubber Line</td> <td>8. Bearing Pointer</td> </tr> <tr> <td>2. Relative Bearing Card</td> <td>9. Course Deviation Indicator</td> </tr> <tr> <td>3. Compass Card</td> <td>10. Glideslope Deviation Scale</td> </tr> <tr> <td>4. Localizer Deviation Scale</td> <td>11. Center Mark</td> </tr> <tr> <td>5. Warning Flag- GS</td> <td>12. Glideslope Deviation Indicator</td> </tr> <tr> <td>6. BOX Reference Markers</td> <td>13. Warning Flag - LOC</td> </tr> <tr> <td>7. Course Knob</td> <td>14. Localizer Deviation Indicator</td> </tr> </table> | | | | 1. Upper Lubber Line | 8. Bearing Pointer | 2. Relative Bearing Card | 9. Course Deviation Indicator | 3. Compass Card | 10. Glideslope Deviation Scale | 4. Localizer Deviation Scale | 11. Center Mark | 5. Warning Flag- GS | 12. Glideslope Deviation Indicator | 6. BOX Reference Markers | 13. Warning Flag - LOC |
| 1. Upper Lubber Line | 8. Bearing Pointer | | | | | | | | | | | | | | |
| 2. Relative Bearing Card | 9. Course Deviation Indicator | | | | | | | | | | | | | | |
| 3. Compass Card | 10. Glideslope Deviation Scale | | | | | | | | | | | | | | |
| 4. Localizer Deviation Scale | 11. Center Mark | | | | | | | | | | | | | | |
| 5. Warning Flag- GS | 12. Glideslope Deviation Indicator | | | | | | | | | | | | | | |
| 6. BOX Reference Markers | 13. Warning Flag - LOC | | | | | | | | | | | | | | |
| 7. Course Knob | 14. Localizer Deviation Indicator | | | | | | | | | | | | | | |
| <p>9. RANGE INDICATOR</p> | <p>CHECK</p> |  |  <p>RSNB RANGE INDICATOR</p> | | | | | | | | | | | | |
| <p>Keyboard command:</p> <p>The RSNB range indicator is located on instrument panel in both cockpits. The three digits display indicates the slant range to/from the tuned RSNB station. Whenever the instrument fades to a value reception below threshold, or loses its power supply, the red flag will be visible to warn the pilot that the information provided by the indicator is meaningless.</p> | | | | | | | | | | | | | | | |

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| <p>10. VERTICAL VELOCITY INDICATOR</p> <p>ZERO</p> <p>Keyboard command:</p> <p>The combined vertical velocity/turn and slip indicator located on the instrument panel in each cockpit, indicates the rate of climb or descent in meters per second. (The turn and slip indicator, even though displaying on the same instrument face, is not part of the pressure instruments). The vertical velocity indicator scale is graduated from 0 to 80 m/sec. From 0 to 20 m/sec it is graduated in increments of 2 and from 20 to 80 m/sec in increments of 10 meters. The indicator has a 9-second delay. The slip indicator is a mechanical instrument which consists of a ball positioned in a tube full of liquid, acting as a pendulum and will slide to one side whenever the aircraft is flying an uncoordinated flight. The turn indicator is a gyro instrument which provides a quantitative display of the rate of turn being performed. The display limits indicate a "rate 2" turn meaning 360° turn per minute. The face of the instrument bears an example of speed and bank angle which will produce the above rate (45° at 350 km/h). The turn indicator gyro unit is powered by 36 V AC 400 Hz together with engine instruments.</p> | |  |  <p style="text-align: center;">D VVI/TURN & SLIP INDICATOR</p> |
| <p>11. ADF INDICATOR</p> <p>CHECK</p> <p>Keyboard command:</p> <p>The ADF indicator, one in each cockpit, provides information about relative bearing to the tuned station. The pointer rotates according to signals from the ADF.</p> | |  |  <p style="text-align: center;">A ADF INDICATOR</p> |
| <p>12. CLOCK</p> <p>SET</p> <p>Keyboard command:</p> <p>12-hour clocks are installed on the instrument panel in both cockpits. They are hand wound and equipped with two control buttons located on the lower side of the instrument. The total elapsed time available is 5 days. The lower left knob is used when turned clockwise to wind the clock and when pulled out, to set the clock. Pressing this button against spring pressure will actuate the 12 hour stop watch with minutes and hours (upper scale). A blue flag in the window, situated within this scale, indicates the stop watch is actuated. Pressing this button second time, will stop the elapsed time, a fact which will be indicated by a blue and white flag in the window. Pressing the button third time will reset the watch to the starting position which will be indicated by a white flag in the window. The button on the lower right, when turned to the left, starts the clock and bring the minutes stop watch (lower 30 minutes scale) into standby mode. Pressing the same button will then actuate the seconds pointer of the clock together with the minutes pointer (30 min) on the lower stop watch. Pressing the button again, will then stop the hands (second pointer of the clock and minutes pointer of the lower scale stop watch). Pressing the button a third time, will reset the both seconds and minutes pointers. Turning this knob to the right, stops the clock and deactivates all its functions.</p> | |  |  <p style="text-align: center;">C CLOCK</p> |

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| <p>13. CABIN PRESSURE / ALTIMETER ELEV.</p> | <p>CHECK FIELD ALT. DIFFERENCE ZERO</p> | | |
| <p>Keyboard command:</p> | | | |
| <p>With the canopies closed, the engine running and ECS in operation, the cabin is automatically pressurized. Up to 2.000 m (6,500 feet) a slight positive differential pressure is maintained. From 2.000 m (6,500 feet) and above, the differential pressure increases gradually to achieve a maximum differential pressure at 7,000 m (23,000 feet). From 7,000 m (23,000 feet) and above, max. differential pressure is maintained. The cabin pressure is maintained by a pressure regulating valve, which controls the outflow of air from the cabin. A cabin pressure safety valve is utilized to prevent cabin differential from exceeding positive or negative. pressure limits, in case of malfunction in the pressure regulating valve.</p> <p>CONTROLS AND INDICATORS: A cabin pressure indicator, located in the forward cockpit instrument panel, indicates the cabin altitude and the differential pressure between the outside pressure and the cabin pressure. Climbing from sea level to 2,000 m (6,500 ft), the cabin altitude will rise almost together with the A/C altitude, while the differential pressure will indicate a low value of approximately 0.03 kp/cm² (0.4 psi). From 2,000 m (6,500 ft) upward, the differential pressure will increase until it will reach approximately 0.22 to 0.25 kp/cm² (0.33 psi) (at 7.000 m/23,000 ft) and thereafter will maintain that differential pressure. A "CABIN PRESSURE" warning light illuminates in both cockpits, should the cabin differential pressure go beyond the 0.28 kp/cm² (3.96 psi) max. positive, or -0.01 kp/cm² (-0.14 psi) max. negative (during dive) allowable differential pressure.</p> | |  |  <p>CABIN PRESSURE INDICATOR</p> |
| <p>14. VOLTAMMETER</p> | <p>EXTERNAL POWER VOLTAGE</p> | | |
| <p>Keyboard command:</p> | | | |
| <p>An instrument that combines the functions of a voltmeter and an ammeter.</p> | |  |  <p>VOLTAMMETER</p> |
| <p>15. ENGINE INSTRUMENTS</p> | <p>CHECK</p> | | |
| <p>Keyboard command:</p> | | | |
| <p>RPM INDICATOR: The rpm indicator provides an indication of engine HPC and LPC revolutions per minute in percent. Two separate, identical systems, one for each compressor are utilized. Each system consists of a tachometer generator which upon rotation produces AC voltage output and two tachometer indicators, one in each cockpit. The system is completely self-contained and requires no source of electrical power. The indicator contains two pointers, one for each compressor. The pointer with letter I indicates the HPC rpm and the pointer with letter II indicates the LPC rpm. Readings range from 0 % to 110 % for both pointers.</p> | |  |  <p>RPM INDICATOR</p>  <p>EGT INDICATOR</p>  <p>TRIPLE ENGINE INDICATOR</p> |

RPM Limitations:

- HPC RPM: 106.8 ± 1% max
- LPC RPM: 104% max

EGT INDICATOR:

The EGT indicator proves an indication of the Exhaust Gas Temperature measured at the point where combusted gases exit the turbine unit. The system consists of temperature transmitter located on the engine turbine ring and two indicators, one in each cockpit. The temperature transmitter output signal can be connected to only one indicator at the moment. The "EGT IND AFT/FWD" switch, located on the aft cockpit left console provides EGT indication to be displayed either in forward or aft indicator. Readings range from 0 to 900°C.

EGT Limitations:

- EGT 645° max on the ground on TAKE UP regime
- EGT 670° max. in flight without de-icing on
- EGT 685° max. during engine start-up
- EGT 690° max. in flight with de-icing on
- EGT 700° max. in flight above 25,000 ft (8,000 m)

TRIPLE ENGINE INDICATOR:

The triple engine indicator contains three independent indicators:

- Oil pressure indicator
- Oil temperature indicator
- Fuel pressure indicator

Oil Pressure Indicator:

The oil pressure indicator system consists of a pressure transmitter and two indicators, one in each cockpit. The oil pressure is measured behind the high pressure oil pump. The oil pressure indication is displayed on the LH side of the triple engine indicator and its readings range from 0 to 6 kp/cm².

Oil Temperature Indicator:

The oil temperature indicator system consists of a temperature probe and two indicators, one in each cockpit. The oil temperature is measured in the oil tank. The oil temperature indication is displayed on the RH side of the triple engine indicator and its readings range from - 50 to 150°C.

NOTE

The oil temperature indicator in the aft cockpit does not display the actual oil temperature. It is permanently disconnected from the system.

Fuel Pressure Indicator:

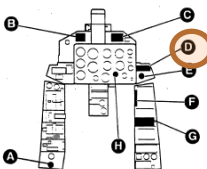
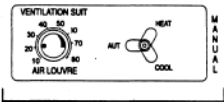
The fuel pressure indicator consists of a pressure transmitter and two indicators, one in each cockpit. The fuel pressure is measured in front of the fuel nozzle. The fuel pressure indication is displayed on the top part of the triple engine indicator and its readings range from 0 to 100 kp/cm².

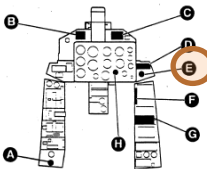
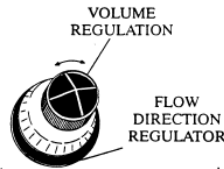
The oil and fuel pressure indicator is power supplied from



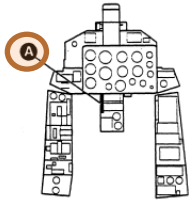
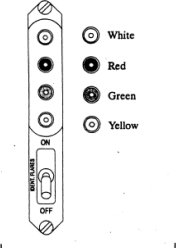
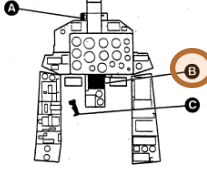
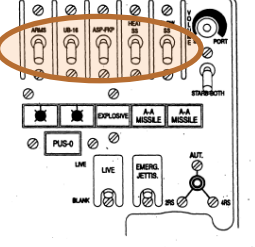
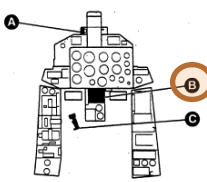
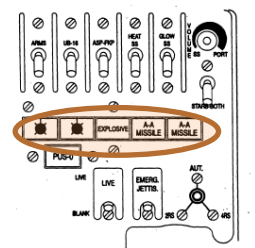
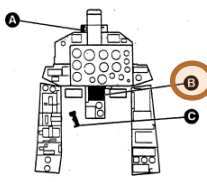
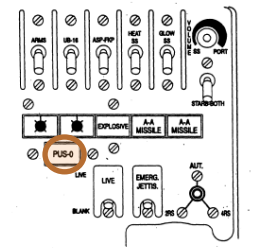
ENGINE VIBRATION INDICATOR

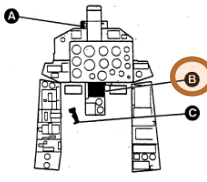
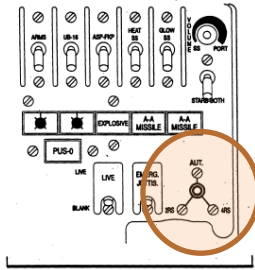
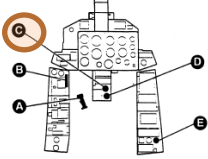
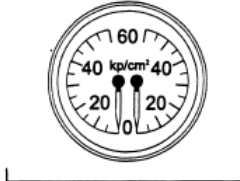
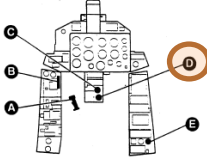

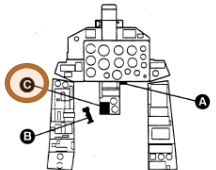
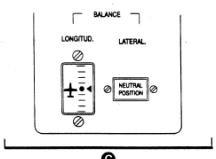
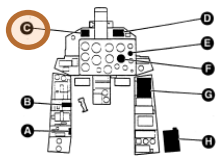

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| <p>the inverter III with 36 V, 400 Hz voltage. The oil temperature indicator is supplied by the 28 V. The triple engine indicator is switched on by "ENGINE" switch, located on the main CB/switch panel.</p> <p>Limitations: OIL PRESSURE INDICATOR - oil pressure 4.5 kp/cm² max - under 2 kp/cm² at zero loads for short time only</p> <p>OIL TEMPERATURE INDICATOR - oil temperature from - 40°C min up to 90°C max - from- 5°C up to 90°C max operation</p> <p>FUEL PRESSURE INDICATOR - Fuel pressure 65 kp/cm² max</p> <p>ENGINE VIBRATION INDICATOR: Vibration is measured at the front suspension of the engine main ball-bearing and indicated on the engine vibration indicator. Once exceeding the limits (40 mm/sec), an "ENGINE VIBRATION" warning light will accompany the indication. Because of the nature of the vibration sensor and the indicator, the readings and the warnings are reliable only during a straight and level flight and on the ground.</p> <p style="text-align: center;">NOTE</p> <p>The engine vibration speed on the ground should be monitored at engine vibration indicator. In flight, at engine steady operation, the vibration level should be observed by the "ENGINE VIBRATION" warning light. The readings of the engine vibration sensor and indicator become erroneous during aircraft evaluations and aerobatics and therefore should not be taken into consideration.</p> <p>An engine vibration test button "CHECK VIBRATION" is located in the forward cockpit on the LH console. Pressing the button will move the indicator to over 40 mm/sec and bring on the "ENGINE VIBRATION" warning light. The engine vibration indicator is located on the instrument panel in the fwd cockpit only.</p> | | |
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| <p>16. DIFFUSER AND SUIT TEMP. CONTR.</p> <p>Keyboard command:</p> <p>Temperature of the air coming out of the diffuser (and to the ventilation flight suit) is controlled from a panel located on the instrument right-hand forward console in the forward cockpit and is similar in functions and method of operating to the cabin air-conditioning control switch and temp controller, except for the fact that the temperature via the shower automatic temp controller can be raised up to 80° C (176° F).</p> | <p style="text-align: center;">AUT. SET TEMPERATURE</p> |  |  <p style="text-align: center;">D DIFFUSER AND FLIGHT SUIT TEMPERATURE CONTROL PANEL</p> |
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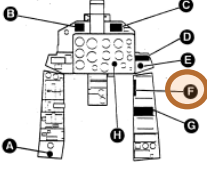
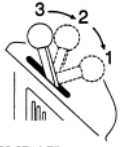
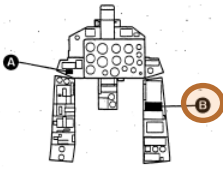
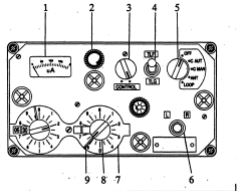
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| <p>17. DIFFUSER</p> <p>Keyboard command:</p> <p>The flow coming out of the vent can he controlled by rotating the inner (large) ring for directional regulation and the outer (smaller) ring for volume regulation.</p> | <p style="text-align: center;">SET DIRECTION CLOSE</p> |  |  <p style="text-align: center;">E DIFFUSER</p> |
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CENTER PEDESTAL

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| <p>1. SIGNAL FLARE BUTTONS</p> <p>CHECK BASIC POSITION</p> <p>Keyboard command:</p> <p>The signal flares are provided to signal the airfield control tower of communication failure and during the communication loss, of loss or failure in the landing gear, flight controls etc. Four signals with different colors are housed in a launching box, located in the RH side of the aft fuselage section. Launching the signal flares is carried out by pressing the push-button of the respective color in the forward cockpit only. The aft cockpit is not provided with signal flares control. The system is protected by the "FLT RECOR/EKSR-46/KL-39" C/B on the aft CB/switch panel and switched on by the "IDENT. FLARES" switch located on the signal flares control panel.</p> | |  |  <p>SIGNAL FLARES CONTROL PANEL</p> |
| <p>2. ARMAMENT PANEL</p> <p>ALL OFF</p> <p>Keyboard command:</p> <p>The armament system provides the a/c with the capability to carry and deliver Air to Air and Air to Ground weapon types. The system includes the capability to jettison the stores in emergency. The armament system is protected and controlled by two "ARMS" C/Bs, one in the forward cockpit center pedestal and one in the aft cockpit miscellaneous C/B switch panel. Both C/Bs have to be switched ON to enable the system operation by the trigger located on the forward cockpit stick grip (except in emergency jettison operation). The stores releasing by the trigger is blocked up the a/c speed 310 ± 15 km/h. The a/c has two external armament stations, one on each wing.</p> | |  |  <p>ARMAMENT PANEL</p> |
| <p>3. LOWER INDICATION PANEL TO STORES</p> <p>ILLUMINATING ACCORDING TO STORES</p> <p>Keyboard command:</p> <p>Store light (bomb symbol): It indicates any store suspended under the wing pylon (bomb, rocket launcher, missile launcher).</p> <p>"EXPLOSIVE" light: Indicates that the arm/safe bombs emergency jettison switch is in ARM position.</p> <p>"A-A MISSILE" light: Indicates that the missile is suspended under the appropriate missile launcher.</p> | |  |  <p>ARMAMENT PANEL</p> |
| <p>4. PUS-0 LIGHT</p> <p>ILLUMINATING</p> <p>Keyboard command:</p> <p>"PUS-0" intervalometer end position light – indicates that the automatic rockets firing system is in its zero reference position.</p> | |  |  <p>ARMAMENT PANEL</p> |

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| <p>5. ROCKET MODE SELECTOR</p> <p>Keyboard command:</p> <p>"2 RS" position: Two rockets will be fired when trigger is squeezed. Firing sequence is left first, symmetric right second.</p> <p>"4 RS" position: Four rockets will be fired when trigger is squeezed. Firing sequence is left first, symmetric right second, left third and symmetric right last.</p> <p>"AUT." Position: Salvo position; the rockets are fired as long as the trigger is squeezed. The firing sequence is symmetric with an interval of approximately 1.2 second between two subsequent launches.</p> | <p>CENTER</p> |  |  <p>B ARMAMENT PANEL</p> |
| <p>6. MAIN BRAKE PRESSURE INDICATOR</p> <p>Keyboard command:</p> <p>Application of the normal wheel brakes is indicated by means of a double pressure indicator, one for each wheel, located on the center pedestal in both cockpits. The indicator indicates pressure during normal and automatic braking of the left and right wheels. Since the indicator indicate applied pressure, when the brakes are not in use, the indicator will read 0.</p> | <p>ZERO</p> |  |  <p>C LH/RH WHEEL BRAKE PRESSURE INDICATOR</p> |
| <p>7. EMERGENCY BRAKE PRESS. INDICATOR</p> <p>Keyboard command:</p> <p>Indication of emergency brake application is displayed in the forward cockpit only. Since the indicator indicate applied pressure, when the brakes are not in use, the indicator will read 0.</p> | <p>CONDITION</p> |  |  <p>D EMERGENCY BRAKE PRESSURE INDICATOR</p> |
| <p>8. TRIM INDICATOR</p> <p>Keyboard command:</p> <p>The trim tabs provide aircraft trimming along the longitudinal and lateral axes. Longitudinal trimming is provided by trim tabs fitted to the left and right elevators. The right trim tab is operated by electrical actuator which deflects the tab up or down. The left trim tab is controlled by the flaps extension and will deflect automatically when the wing flaps are moved from to 44 degrees (landing) position, thus effectively introducing a "nose up" trim for the flare. The right trim tab is controlled by the trim switch located on the control stick in either cockpits. Lateral trimming is provided by combined trim/balance tab fitted to the left aileron and is operated by an electrical actuator which detects the tab up or down. Right tab is the balance tab.</p> | <p>CONDITION</p> |  |  <p>C PITCH AND ROLL TRIM INDICATOR PANEL</p> |
| <p>9. FIRE SIG TEST SWITCH</p> <p>Keyboard command:</p> <p>A fire warning circuit test switch is located in the forward cockpit pedestal. The spring-loaded three-position "FIRE SIG. TEST" switch has a CHECK function on either sides to check each of the two blocks of fire detectors. Moving "FIRE SIG. TEST" switch to both positions will illuminate "FIRE" warning light.</p> | <p>I AND II FIRE LIGHT ILLUMINATES</p> |  |  <p>C WARNING LIGHTS PANEL</p> |

RIGHT CONSOLE

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| <p>1. PRESSURIZATION / ECS HANDLE</p> <p>Keyboard command:</p> <p>After engine start, with the canopy locked ("CANOPY UNLOCKED" light is extinguished), and the ECS and pressurization handle fully forward ("AIRCONDIT OFF" light is extinguished), the air-conditioning system will supply modulated air according to the air-conditioning mode.</p> | <p>OFF AFT POSITION</p> |  |  <p>FUNCTION:</p> <ol style="list-style-type: none"> 1. OFF 2. CANOPIES SEALED 3. ECS ON <p>F</p> <p>PRESSURIZATION LEVER</p> |
| <p>2. ADF CONTROL BOX</p> <p>Keyboard command:</p> <p>The ADF control box bears the following controls:</p> <p>Tune Indicator (1): The pointer indicates the accuracy of ADF tuning. Maximal deflection of the pointer should be set during ADF fine tuning.</p> <p>Volume Knob (2): Turning this knob CW increases the volume of signal transferred to pilot headset.</p> <p>ADF Control Switch (3): The control switch provides the possibility to "take" or "hand over" the ADF control.</p> <p>Mode Switch (4): Positioning the mode switch to "TLF", the ADF receives signals from station with permanent or modulated standard (A3) and allows its listening. In the "TLG" position the beat frequency is generated to allow listening of identification signal (A1, A2).</p> <p>Fuction Selector (5):</p> <p>The five-position switch can be switched to one of following positions:</p> <ul style="list-style-type: none"> • "OFF" - power supply disconnected, ADF does not operate • "C AUT" - ADF operates in fully automatic mode. As the aircraft overpasses the outer beacon, the ADF is automatically re-tuned to preset inner beacon frequency. If the aircraft drifts from the approach entry sector, i.e. $\pm 30^\circ$ from the runway axis, the system is automatically re-tuned back to outer beacon frequency to enable to initiate the missed approach procedure. The ADF automatic re-tuning operates only in landing gear down position. • "C MAN" - ADF indicator needle automatically points to tuned facility, however the switching between outer and inner beacon should be executed manually by means of outer-inner beacon switch located on the instrument panel in each cockpit. | <p>SET</p> |  |  <p>B</p> <p>ADF CONTROL BOX</p> |

- **"ANT"** - ADF system receives omnidirectional antenna signals only. This mode is recommended for tuning a specific beacon.
- **"LOOP"** - If the automatic beacon tracking function has failed, the direction to the beacon can be found manually by rotating a goniometer. The goniometer is controlled by means of "L/R" three position switch.
When the switch is moved from its center neutral position to one of its end position, the goniometer starts to rotate in the respective direction. Accurate beacon direction finding is indicated either by means of less audible beacon identification signal in the pilots headset, or by minimum deflection of the tune indicator pointer.

L/R Switch (6):

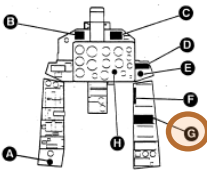
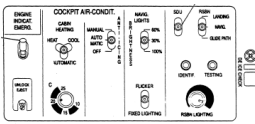
Moving the "L/R" switch to one of its end position causes rotating of ADF indicator needle. If the function selector is in either "C AUT" or "C MAN" position, the ADF indicator needle should move back to initial position (pointing the tuned beacon) after "L/R" switch releasing to neutral position. This feature verifies the ADF operation ability. The next function of this switch is described above (refer to "LOOP" position of function selector).

Frequency Control Knobs (7,8,9):

The ADF frequencies can be set by means of triple rotary switches. The two identical knobs are marked "O" for outer beacon frequency tuning (right knobs), and "I" for inner beacon (left knobs). Turning the outer larger knob selects hundreds of kHz, center toggle knob selects tens of kHz and inner small knob changes units of kHz. Units of kHz are indicated on outer scale graduated from 1 to 10, however this scale is not calibrated and shows the units approximately only. The inner small knob can be mainly used for fine tuning to achieve maximum deflection of the tune indicator pointer. The window beside the control knob indicates the selected frequency in kHz.

Intensity Knob:

Rotating the knob increases or decreases the ADF control box lighting intensity.

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| <p>3. AUXILIARY SWITCH PANEL</p> <ul style="list-style-type: none"> - SEAT UNBLOCKING SWITCH - CABIN HEATING - ENGINE INDICAT. EMERGENCY - ANTI ICING - NAVIGATION LIGHTS - SDU - RSBN | <p style="text-align: center;">GUARDED AUTOMATIC OFF OFF AS REQUIRED OFF NAVIGATION</p> |  |  |
| <p>Keyboard command:</p> | | | |
| <p>SEAT UNBLOCKING SWITCH: An electrical sequencing system is integrated in the ejection system to prevent the danger of collision between the two canopies or the pilots during ejection. The electrical sequencing ensures that the pilot who initiates the ejection first whether the forward or aft, will complete his ejection before the second pilot ejection commences. If both pilots initiate the ejection at exactly the same time, the aft seat will have priority. Should a malfunction occur in the first pilot ejection sequence, which causes the sequence to be interrupted and uncompleted, the second pilot ejection will not be initiated since it is blocked in favour of the first pilot. Therefore an "UNLOCK EJECT" switch is installed in both cockpits to overcome such a situation and override the blocking effect by disabling the sequencing.</p> <p>CABIN HEATING: Temperature of the air admitted into the cabin is controlled by a four-position "CABIN HEATING" control switch located on the RH console auxiliary switch panel in the forward cockpit. Temperature control is maintained automatically according to set temperature when the switch is at the "AUTOMATIC" position. When the switch is at the center (neutral) position, the automatic control system is deactivated and the temperature mixing valve remains fixed in the position at the time the switch was set to the off position. If the automatic control system fails or if the desired temperature cannot be obtained with the switch at the "AUTOMATIC" position, the switch may be held to the "HEAT" or "COOL" position temporarily and back to neutral, thus the temperature mixing valve is manually held in one of the two extreme positions and deliver either hot or cold air.</p> <p style="text-align: center;">WARNING</p> <p>The manual "HEAT" or "COOL" position should be used while bearing in mind that it takes some time for the desired air temperature to actually enter the cockpit and therefore one should allow some time before a further manual adjustment takes place. (Excessive hot air with a max of 200° C (392° F) may be admitted into the cabin if the switch is held at the manual "HEAT" position for a longer period than necessary.)</p> <p>CABIN AIR TEMPERATURE CONTROLLER: The Cabin air temperature controller is located on the auxiliary switch panel on the RH console in the forward cockpit. The temp controller functions only when the cabin air conditioning control switch is at the "AUTOMATIC" position and AC power is available. With the temp controller. any temperature between 10° and 25°</p> | | | |

C (50 and 77° F) can be selected by the pilot to be maintained automatically by the system.

ENGINE INDICAT. EMERGENCY:

The indication of the inverter III failure will be recognized by the "INV. 3 x 36 V FAIL" caution light illumination. To restore the power, the triple engine indicator (oil and pressure indicator), fuel indicator, turn indicator and longitudinal trim indicator can be connected to the inverter IV by "ENGINE INDICAT. EMERG" switch, located on auxiliary switch panel in the fwd cockpit left console.

ANTI ICING:

The "ANTI-ICING" de-icing switch is located on the RH console auxiliary switch panel in the forward cockpit. It is a three position switch indicating OFF, AUTOMATIC and MANUAL. The system is powered by 115 V AC and protected by "DE-ICING SIGNAL." C/B located on the main CB/switch panel and the two shut-off valves are protected by "DE-ICING AIR SHOWER" C/B located on the aft CB/switch panel.

AUTOMATIC OPERATION:

With the switch set to the automatic position, the system utilizes the sensor located on the left side of the nose, to detect ice formation on the aircraft. When icing conditions are detected by the sensor, a signal is sent to activate the "icing/snowflakes" caution light on the caution and advisory panel in both cockpits. Together with the actuation of the caution light, a relay is energized that causes both shutoff valves to open, thereby directing the bleed air to the deicing surfaces. Opening of the shut-off valves is indicated by "DE-ICING ON" light on the caution/advisory panel in both cockpits. If there is no other ice indication after heating of the sensor and 20 seconds break, both shut-off valves will close. The system is disabled when the nose wheel is on the ground (WOW switch depressed).

MANUAL OPERATION:

With the switch at the manual position, the operation is not sensor dependent. The switch in "MANUAL" position commands the shut-off valve to open and bleed air is directed to the de-icing surfaces. The "DE-ICING ON" light will illuminate in the caution/advisory panel. In manual operation, the nose wheel micro-switch will have no effect on the system operation.

NAVIGATION LIGHTS:

The NAV lights are controlled by two three-position switches, located on the right console auxiliary switch panel in the forward cockpit (position lights control panel "NAVIG. LIGHTS"):

- Mode control: Can be selected to flash position "FLICKER", middle OFF or steady "FIXED" position.
- Intensity control "BRIGHTNESS": Can be selected to DIM (30%), BRT (60%) or MAX (100%). This switch functions only if the mode control switch is out of OFF position.

The NAV lights are powered by 28 V DC and protected by the "NAV. LIGHTS/HAND LAMP" C/B on the Aft CB/Switch Panel in the forward cockpit.

SDU:

The SDU system provides pilot with precision approach capability to 60 m AGL at the runway threshold. The SDU signals are displayed on the ADIs in both cockpits.

The SDU system is powered by 28 V DC and 3 x 36 V AC at 400Hz, and protected by the "SDU" circuit breaker on the main CB/switch panel. The system can be switched on by means of "SDU" switch located on the forward cockpit auxiliary switch panel. The pilot switches on the SDU system manually after penetrating area of stable receiving the localizer signal, which is indicated by disappearing of the "K" warning flag. SDU activation is indicated by hidden "K" and "I" warning flags on the RMI.

NOTE

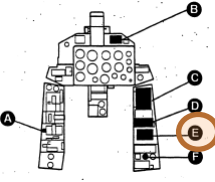
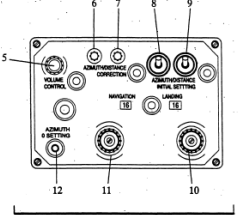
Before the SDU system activation, the bearing pointer should be set at the runway course.

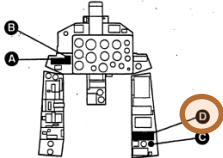
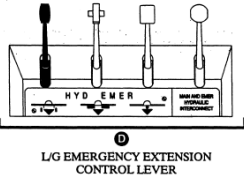
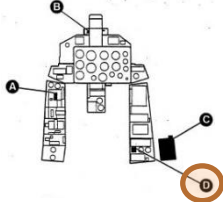
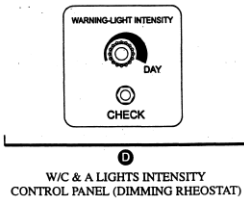
The aircraft can be steered using SDU pointers only when is clearly and unbrokenly receiving the signal of glide slope and localizer beams, which is indicated by both the "K" and "I" warning flags disappearing.

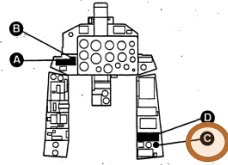
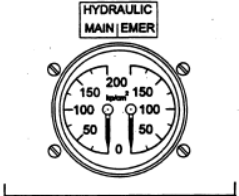
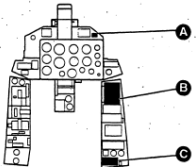
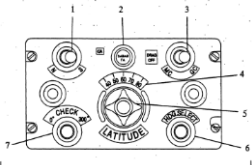
RSBN:

The following controls belong the RSBN system:

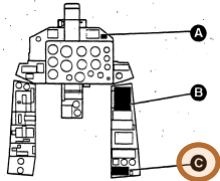
- RSBN mode switch labeled "RSBN". The mode switch has three positions: "LANDING", "NAVIG." and "GLIDE PATH". In the "LANDING" position the aircraft is guided at the landing approach by the glide slope and localizer beams of landing station; in the "NAVIG" position the aircraft location (course and distance to/from the station) is displayed, and in the "GLIDE PATH" position the aircraft is guided during descent at the constructed electronic glide path.
- RSBN test button "TESTING". When the button is depressed, the RSBN system should set distance 291.5 ± 3 km at the range indicator and course $117^\circ \pm 2^\circ$ at the RMI.
- Identification button "IDENTIF". When the button is depressed the aircraft's symbol at the air traffic controllers display is highlighted.
- RSBN control box lighting intensity knob "RSBN LIGHTING" should be used to set suitable RSBN control box lighting intensity.

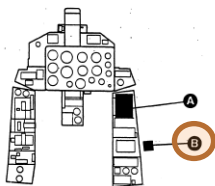
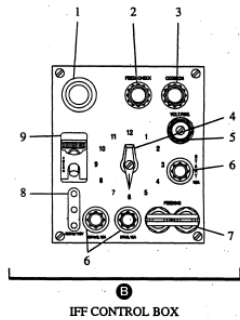
| 4. RSBN CONTROL BOX | SET | | |
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| Keyboard command: | | | |
| The RSBN control box is located on the forward cockpit left console. | | | |
| NAV Channel Selector: | | | |
| Turning the selector sets the NAV channel. The selected channel number is displayed in "NAVIGATION" window. | | | |
| LDG Channel Selector: | | | |
| Turning the selector sets the LDG channel. The selected channel number is displayed in "LANDING" window. | | | |
| Distance Switch: | | | |
| The "DISTANCE INITIAL SETTING" switch, once positioned to either side, decrease or increase the distance displayed on the RSBN range indicator. Releasing the distance switch, the new range is set. | | | |
| Course Switch: | | | |
| The "AZIMUTH INITIAL SETTING" switch, once positioned to either side, rotates the HSI's compass card. Releasing the switch, the new course is set. | | | |
| Distance Correction Light: | | | |
| When the green "DISTANCE CORRECTION" light illuminates, the distance to the station is evaluated with a maximum accuracy, which the system is capable in radio touch with station. If the distance correction light does not shine, the aircraft is beyond the station range and the distance is computed by the system autonomously with lower accuracy. | |  | |
| Course Correction Light: | | | |
| When the green "AZIMUTH CORRECTION" light illuminates, the bearing to the station is evaluated with a maximum accuracy, which the system is capable in radio touch with station. If the course correction light does not shine, the aircraft is beyond the station range and the bearing is computed by the system autonomously with lower accuracy. | |  <p style="text-align: center;">RSBN CONTROL BOX</p> | |
| Volume Knob: | | | |
| The "VOLUME CONTROL" knob, when turned CW increase the RSBN station audio signal to the pilot's headset. | | | |
| Zero Course Button: | | | |
| When the "AZIMUTH 0 SETTING" button is depressed, rotating the potentiometer will set the zero course. This button is used for maintenance purposes only. | | | |
| 5. Volume Knob | 9. Distance Switch | | |
| 6. Course Correction Light | 10. LDG Channel Selector | | |
| 7. Distance Correction Light | 11. NAV Channel Selector | | |
| 8. Course Switch | 12. Zero Course Button | | |

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|---|--|--|--|
| <p>5. FOUR HYDRAULIC EMER. LEVERS</p> | <p>FORWARD AND SAFETY WIRED</p> |  |  <p>L/G EMERGENCY EXTENSION CONTROL LEVER</p> |
| <p>Keyboard command:</p> <p>Control during emergency operation is by means of hand valves, actuated by emergency extension and interconnection control handles. These handles can be actuated from either cockpit with equal priority and in any order. After an emergency operation has been executed, it is possible and legitimate to return any emergency operated consumer, to its initial position. The position returned to, will be the one selected by the normal controls. (In order to return to normal operation the respective emergency handle must be restored to normal in both cockpits.)</p> <p>The landing gear emergency lever placarded "HYD EMER" followed by an extended LG symbol and located on the aft right console in each cockpit, provides emergency means of extending the landing gear, in case an electrical or hydraulic malfunction should prevent use of the main system. When this lever is operated by moving backward, a separate emergency LG extension circuit is fed by the emergency accumulator operates the landing gear and door actuating cylinders until the landing gear is locked at the down position. In this case, the doors remain open.</p> <p>The landing gear can be retracted in emergency by means of main LG control lever, however first the main and emergency hydraulic circuits must be interconnected by moving the "MAIN AND EMER HYDRAULIC INTERCONNECT" lever backward. In this case, both forward and aft cockpits emergency UG extension levers must be placed in the forward position.</p> | | | |
| <p>6. W/C & A LIGHTS INTENSITY CONTROLS - CHECK - BRIGHTNESS</p> | <p>LIGHTS ILLUMIN. ADJUST</p> |  |  <p>W/C & A LIGHTS INTENSITY CONTROL PANEL (DIMMING RHEOSTAT)</p> |
| <p>Keyboard command:</p> <p>Dimming of the following items is accomplished by the dimming rheostat, located on the RH console in each cockpit:</p> <ul style="list-style-type: none"> - Master Caution light - All warning, caution and advisory lights - Landing gear electrical indicator panel - Flap electrical indicator panel - Trim indicators - Armament indicator lights <p>Dimming through the full intensity range is provided in five stages.</p> <p>Dimming of FDR ON light is achieved by rotating of lamp cap. The test button is located next to the W/C & A dimming rheostat. By pressing this button all W/C & A lights, except of FOR ON, will illuminate for as long as the button is depressed.</p> | | | |

| | | | |
|---|--|---|---|
| <p>7. HYDRAULIC GAUGE</p> <p>Keyboard command:</p> <p>Limitations:</p> <ul style="list-style-type: none"> - Pressure in main circuit 135-150 kp/cm² - Pressure in emergency circuit after engine start 150 kp/cm² <p style="text-align: center;">NOTE</p> <p>Due to decreasing pressure during high attitude flight the pressure in emergency circuit can gradually drop to 120 kp/cm² at aircraft maximum ceiling. The pressure in the emergency circuit is recovered again when the aircraft descends.</p> | <p style="text-align: center;">CONDITION</p> |  |  <p style="text-align: center;">MAIN & EMERGENCY HYDRAULIC PRESSURE INDICATOR</p> |
| <p>8. GMK CONTROL BOX</p> <ul style="list-style-type: none"> - MODE SWITCH - HEMISPHERE SWITCH - LATITUDE SELECTOR <p>Keyboard command:</p> <p>The GMK control box is installed in the forward cockpit RH console only.</p> <p>Hemisphere Switch: The "GA" switch can be set to either north "N" or south "S" position according to the earth hemisphere where the navigation flight is to be flown. The position setting is due to automatic correction of GMK gyroscope position in GC mode.</p> <p>Gyro Drift Indicator: The "3ABAJI fA" indicator provides pilot with the same information as the gyro drift indicator on the directional gyro front control panel.</p> <p>Mode Switch The mode switch can select one of the GMK operation modes: MC or GC.</p> <p>Test Switch The test switch verifies the correct operation of the GMK system in the MC mode. The test can be executed after terminating the GMK starting process, which lasts 3 minutes in MC mode or 5 minutes in GC mode. When the test switch "CHECK" is moved to 0 (zero) position, the RMI compass card shall rotate to position zero degrees, when in 300 degrees position the compass card shall indicate 300° heading. The allowable indication tolerance is ± 10 degrees. The compass card repositioning shall be accompanied by illumination of the gyro drift indicator on both the GMK control box and front control panel. When the test switch is released to its center neutral position, the HIS compass card shall rotate back and indicate actual heading.</p> <p>Latitude Selector: The latitude of location where the navigation flight is to be flown can be set by latitude selector. The latitude setting is required due to automatic correction of GMK gyro position in GC mode. The selected latitude can be read on scale above the selector.</p> <p>Heading Switch:</p> | <p style="text-align: center;">MC SET SET</p> |  |  <p style="text-align: center;">GMK CONTROL BOX</p> |

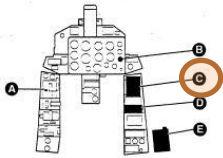
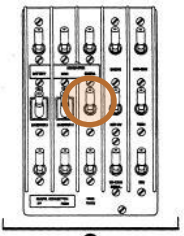
If the GMK operates in MC mode, moving the "HDG. SELECT" switch to either position will align the GMK gyro with magnetic heading. If the GMK operates in GC Mode, moving the "HDG. SELECT" switch to either position will cause the gyro rotation in the respective direction hence rotating RMI compass card. The gyro (compass card) rotation is terminated when the heading switch is released to its center neutral position, and the GMK proceeds operation in GC mode with new gyro setting.

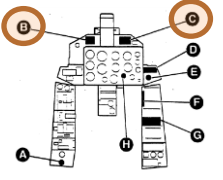
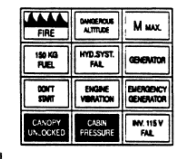
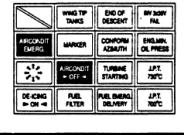
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| <p>9. JPT-REG. TEST</p> <p>Keyboard command:</p> <p>The EGT limiting system is controlled by the electronic block. The temperature transmitters (thermocouples) provide electronic block with electrical signal proportional with EGT. Based on that signal the electronic block then controls both the limiting and the shutoff valves operation and signal lights illuminating. The electronic block is supplied with 28 V and switched on by the "JPT REG" switch located on the forward cockpit aft CB/switch panel.</p> <p>If necessary the EGT limiting system can be manually switched off by guarded EGT limiting system disable switch located on the forward cockpit LH console. The switch is labeled "OFF JPT REG".</p> <p>While the "J.P.T 730°C" light comes on during flight, it does not extinguish after EGT drops below that value and remain lighting even after landing. In that case, the engine is automatically shut down after nose wheel touches down.</p> <p>The system can be tested on the ground using the EGT limiter test switch "JPT -REG. TEST" located on the fwd. cockpit RH console. Positioning the switch to position I will cause the "J.P.T. 700°C" light to come on and in position II the "J.P.T 730°C" light to come on.</p> | <p>I AND II LIGHTS ILLUMINATING</p>  | |
|--|---|--|

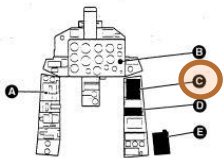
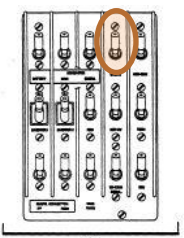
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| <p>10. IFF CONTROL BOX</p> <p>Keyboard command:</p> <p>The IFF control box is located under the RH cabin frame in the forward cockpit only.</p> <p>Code Selector (4): The relevant identification code can be selected by the code selector in a range from 1 to 12.</p> <p>Power Switches (7) The doubled switch labeled "FEEDING" switches on the IFF system.</p> <p>Power Light (2): The red advisory light labeled "FEED. CHECK" illuminates when the IFF system is power supplied.</p> <p>Emergency Switch (9): The switch "EMERG" should be switched on whenever emergency conditions are detected. Switching on the emergency switch will warn the air traffic controller about the emergency situation.</p> | <p>SET CODE</p>  |  <p>IFF CONTROL BOX</p> |
|--|---|---|

| | | | |
|------------|---|--|--|
| | <p>1. Transmission Indicator 6. Circuit Breaker 2. Power light 7. Power Switches 3. Code Selection Indicator 8. Test Socket 4. Code Selector 9. Emergency Switch 5. Voltage Regulator</p> | | |
| END | | | |

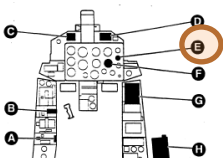

BEFORE START CHECKS

| | | | | |
|-----------|--------------------------------|-----------|---|--|
| 1. | RADIO SWITCHES | ON |  |  <p style="text-align: center;">C MAIN C/B SWITCH PANEL</p> |
| | Keyboard command: | | | |
| | Which switches are meant here? | | | |

| | | | | |
|-----------|--|--|---|--|
| 2. | SIGNAL LIGHTS | ON |  |  <p style="text-align: center;">E WARNING LIGHTS PANEL</p>  <p style="text-align: center;">C CAUTION & ADVISORY LIGHTS PANEL</p> |
| | <ul style="list-style-type: none"> - AIRCONDIT OFF - CANOPY UNLOCKED - HYD. SYST. FAIL - GENERATOR - EMERGENCY GENERATOR - ENG. MIN. OIL PRESS - DON'T START - INV. 3X36 V FAIL - WINGTIP TANKS | ON ON ON ON FLASHING ON ON ON | | |
| | Keyboard command: | | | |

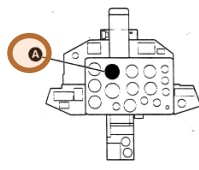
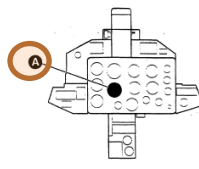
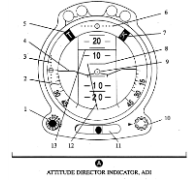
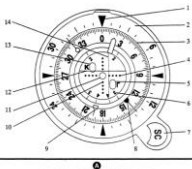
| | | | | |
|-----------|--|-----------|---|--|
| 3. | ENGINE SWITCH | ON |  |  <p style="text-align: center;">C MAIN C/B SWITCH PANEL</p> |
| | Keyboard command: | | | |
| | <p>The inverter III is small static semiconductor triple-phase 3 x 36 V, 400 Hz instrument. It is connected to the circuit through the "ENGINE" switch located on the main CB/switch panel in the forward cockpit and protected by "ENGINE INSTRUM./T.&B. INDIC." circuit breaker. It supplies alternating current to the following instruments:</p> <ul style="list-style-type: none"> - triple engine indicator (oil and fuel pressure indication) - fuel indicator - longitudinal trim indicator - turn indicator (part of the vertical velocity/turn & slip indicator) | | | |

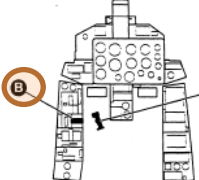
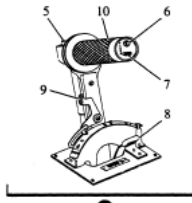
NOTE
The ENGINE switch activates a fuel boost pump.
If the boost pump fails to operate and DON'T START light does not go off within 5 seconds, do not start the engine.

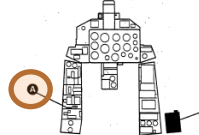
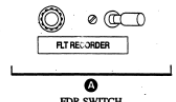
| | | | | |
|-----------|---|--------------|---|--|
| 4. | FUEL INDICATOR | CHECK |  |  <p style="text-align: center;">E FUEL QUANTITY/ FLOW INDICATOR</p> |
| | Keyboard command: | | | |
| | <p>FUEL QUANTITY INDICATIONS</p> <ul style="list-style-type: none"> - Tanks full- gage indicates maximum (upon reference fuel density 777 kg/m³ it is 850 kg). - Fuel quantity indication decreases to 625 to 680 kg according to fuel density and temperature. - Wing-tip transfer- indication remains steady <p style="text-align: center;">NOTE</p> <p>When engine is running at higher ratings, its fuel demand can be higher than rate of fuel transferred from wing-tip tanks. In that case the fuel indicator reading can reasonably decrease during fuel transfer from wing-tip tanks.</p> | | | |

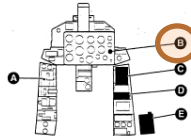
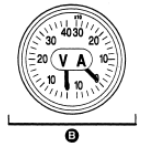
| | | | |
|--|--|--|--|
| | <ul style="list-style-type: none"> - End of transfer from wing-tip tanks - "WING TIP TANKS" light illuminates. - Quantity indication decreases. - When quantity goes down to 150 kg (330 lbs), indication from then onwards, is accompanied by "150 KG FUEL" warning light. | | |
|--|--|--|--|

**The fuel indicator should indicate value according the flight mission to be flown.
Check engine vibration indicator by means of CHECK VIBRATION button.**

| | | | |
|---------------------|------------------|--|---|
| 5. ADI / RMI | OPERATIVE | | |
| Keyboard command: | |   |  <small>ATTITUDE DIRECTOR INDICATOR, ADI</small>  <small>RADIO MAGNETIC INDICATOR, RMI</small> |
| | | | |

| | | | |
|--------------------|-------------|--|--|
| 6. THROTTLE | STOP | | |
| Keyboard command: | |  |  <small>FWD THROTTLE GRIP</small> |
| | | | |

| | | | |
|----------------------|-----------|---|--|
| 7. FDR SWITCH | ON | | |
| Keyboard command: | |  |  <small>FDR SWITCH</small> |
| | | | |

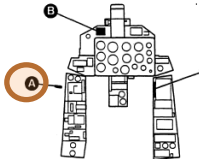
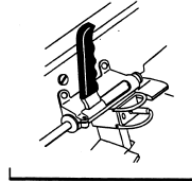
| | | | |
|-----------------------|-------------------------------------|---|---|
| 8. VOLTAMMETER | CHECK 22 V MINIMUM | | |
| Keyboard command: | |  |  <small>VOLTAMMETER</small> |
| | | | |

NOTE

Do not attempt an engine battery start if battery voltage is less than 22 V.

WARNING

Failure to comply the next step could result in damage to equipment or injury to pilot in aft cockpit.

| | | | |
|----------------------|--------------|---|--|
| 9. AFT CANOPY | CLOSE | | |
| Keyboard command: | |  <small>AFT COCKPIT</small> |  <small>CANOPY LOCK HANDLE</small> |
| | | | |

| | | | | |
|------------|----------------------------------|------------------|--------------------|----------------------|
| 10. | AFT CANOPY UNLOCKED LIGHT | COMES OFF | <p>AFT COCKPIT</p> | <p>WARNING PANEL</p> |
| | Keyboard command: | | | |

END

ENGINE START

CAUTION

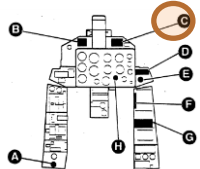
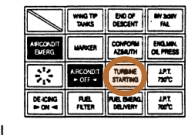
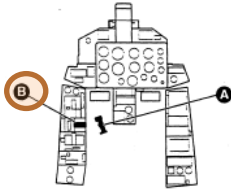
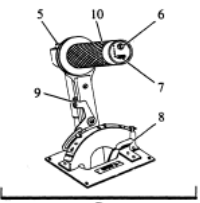
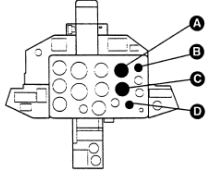


The engine throttle finger-lift, for retarding the-throttle from IDLE to STOP is available in the forward cockpit only. It is therefore crucial that the forward pilot be aware and prepared to retard the throttle to STOP in case of an engine hot start or at any other time the engine must be shut down.

NOTE

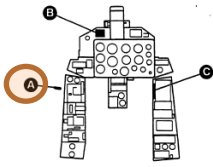
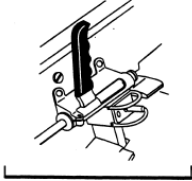
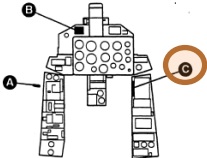
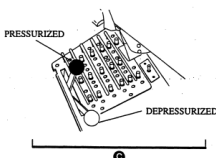
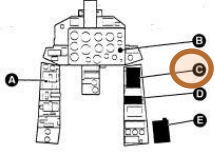
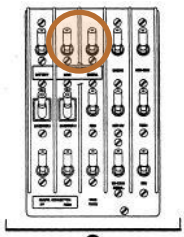
If you were instructed to request engine start permission, turn on INVERTOR I, INVERTOR II and RDO. When permission request ist done, disable INVERTOR I, INVERTOR II and RDO.

CAUTION

Before engine start, instruct the ground crew to set wheel chocks under the main landing gear.

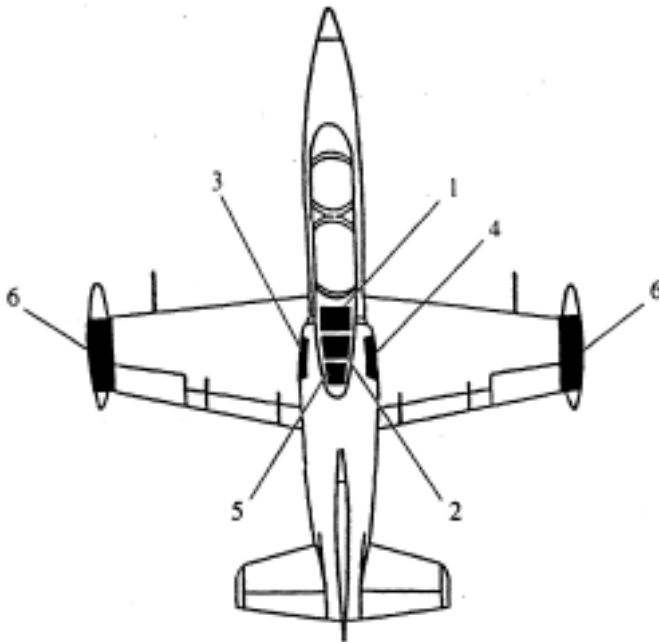
| | | | | |
|-----------|---|---|--|---|
| 1. | TURBO START BUTTON | DEPRESS FOR 2 SECONDS | | |
| | Keyboard command: Pictures from the sim after leaving closed-beta status! | | | |
| 2. | TURBINE STARTER LIGHT | ON BY 25 SEC. MAX |  |  CAUTION & ADVISORY LIGHTS PANEL |
| | Keyboard command: | | | |
| 3. | ENGINE START BUTTON | DEPRESS FOR 2 SECONDS | | |
| | Keyboard command: Pictures from the sim after leaving closed-beta status! | | | |
| 4. | THROTTLE | IDLE WITHIN 3 TO 6 SECONDS FROM STEP 3 |  |  FWD THROTTLE GRIP |
| | Keyboard command: | | | |
| 5. | RPM, TRIPLE ENGINE, EGT INDICATORS | CHECK VALUES |  |  A RPM INDICATOR |
| | Keyboard command: | | | |
| | | | |  C TRIPLE ENGINE INDICATOR |

AFTER START CHECKS

| | | | |
|--|--|--|--|
| <p>1. CANOPY</p> <p>Keyboard command:</p> <p>The aircraft is equipped with individual canopies for the forward and aft cockpits which are opened and closed independently. The canopies are hinged at the right and open upward; from the LH side.</p> <p>Make sure to lift the canopy from the left otherwise it may be released of its hinges on the right.</p> <p>The canopy controls consist of the internal locking levers, the externals locking levers and the canopy jettison levers. Securing rods are installed to hold the canopy at the open position.</p> <p>The internal canopy locking levers are located on the left cabin rail in each cockpit. It has a red mark in the forward locked position. In the closed position, each canopy is held by four locks. The locks in each canopy are opened or closed simultaneously by the canopy locking lever through a mechanical linkage. To open the canopy, the internal canopy lever is tilted inboard and then pulled backwards.</p> | <p>CLOSE AND LOCK CANOPY UNLOCKED LIGHT OUT</p> |  |  <p>A CANOPY LOCK HANDLE</p> |
| <p>2. PRESSURIZATION / ECS CONTROL LEVER</p> <p>Keyboard command:</p> <p>The pneumatic system provides air for inflating the sealing tubes of the windshield and canopies of both cockpits. The air source is an air bottle with a volume of 2 liters and pressure of 15 MPa. Two stage reduction valves located in the fwd cockpit, reduce gradually this pressure to 1.52-1.59 kp/cm² (22-23 psi) which is adequate for canopy sealing. The pressure in bottles is indicated on the pressure gage located on the aircraft nose LH side together with the filling port.</p> <p>Sealing effect of the windshield and canopies is established after closing and locking the canopies locks and moving the Cabin pressurization and ECS handle to the center position. This can be done from either cockpits.</p> <p>When unlocking the canopy without de-pressurizing first (and/or during ejection), the air in the sealing tubes is drained automatically. However during normal operation this is highly unrecommended as the canopies can spring out of their hinges. The Cabin pressurization and ECS handle may be placed to center or forward position, only after both canopies are locked.</p> | <p>FULLY FORWARD AIRCONDIT OFF LIGHT OUT</p> |  |  <p>C CABIN PRESSURIZATION AND ECS HANDLE</p> |
| <p>3. MAIN CB / SWITCH - GENERATOR MAIN AND GENERATOR EMERG.</p> <p>Keyboard command:</p> <p>The main DC power supply system consists essentially of a 9 kW engine-driven generator. For the generator to be connected to the circuit, the "GENERATOR MAIN" switch, located on the main switchboard in the forward cockpit, must be switched on. The generator to be connected to the power supply, the following conditions shall be met:</p> | <p>ON EMERGENCY GENERATOR AND GENERATOR LIGHTS OUT</p> |  |  <p>C MAIN C/B SWITCH PANEL</p> |

the atmosphere.

TANK CAPACITIES:



NOTE

Numbers represent fuel tanks numbers

| Tank No. | Location | Tank Volume | | Fuel Quantity (kg) | |
|------------|----------|-------------|--------|--------------------|------------|
| | | Liter | Gallon | JP-4 | A-1 |
| 1-5 | Fuselage | 1,100 | 290 | 850 ± 25 | 890 ± 25 |
| 6 | Wing Tip | 200 | 53 | 160 ± 10 | 161 ± 10 |
| Total Fuel | | 1,300 | 343 | 1,010 ± 35 | 1,051 ± 35 |

FUEL TRANSFER SEQUENCE

- Initial transfer to fuel mass of 625 to 680 kg in fuselage tanks (1 - 5)
- Wing tip tanks (6)
- Remaining fuel from fuselage tanks

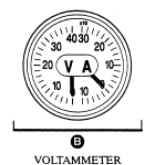
MEANS OF FUEL TRANSFER

- From tip tanks: bleed air pressure 40 to 45 kPa (6 to 7 psi).
- From fuselage tanks: electrically-driven fuel booster pump output pressure from 90 to 110 kPa (13 to 16 psi).
- From inverted flight fuel reservoir: bleed Air pressure 40 to 45 kPa (6 to 7 psi).

7. EXTERNAL POWER

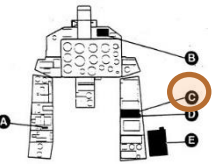
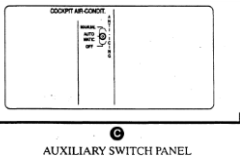
**DISCONNECT
CHECK VOLTAGE**

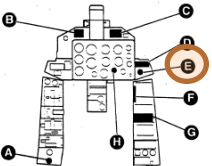
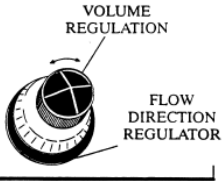
Keyboard command:

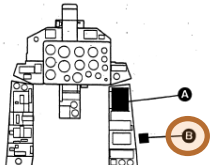
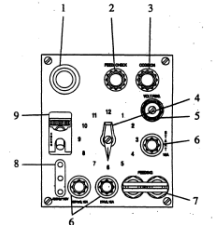


CAUTION

Should an icing sensor is not in the air stream on the ground, it does not indicate icing conditions. If the engine is started at icing conditions with ambient temperature below 5°C, position the anti-ice mode switch to **MANUAL** and leave it there the whole time the engine is running on the ground.

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| <p>8. ANTI-ICE MODE SWITCH</p> | <p>AUTOMATIC OR MANUAL</p> |  |  <p>AUXILIARY SWITCH PANEL</p> |
| <p>Keyboard command:</p> | | | |
| <p>The "ANTI-ICING" de-icing switch is located on the RH console auxiliary switch panel in the forward cockpit. It is a three position switch indicating OFF, AUTOMATIC and MANUAL. The system is powered by 115 V AC and protected by "DE-ICING SIGNAL."C/B located on the main CB/switch panel and the two shut-off valves are protected by "DE-ICING AIR SHOWER" C/B located on the aft CB/switch panel.</p> <p>AUTOMATIC OPERATION: With the switch set to the automatic position, the system utilizes the sensor located on the left side of the nose, to detect ice formation on the aircraft. When icing conditions are detected by the sensor, a signal is sent to activate the "icing/snowflakes" caution light on the caution and advisory panel in both cockpits. Together with the actuation of the caution light, a relay is energized that causes both shutoff valves to open, thereby directing the bleed air to the deicing surfaces. Opening of the shut-off valves is indicated by "DE-ICING ON" light on the caution/advisory panel in both cockpits. If there is no other ice indication after heating of the sensor and 20 seconds break, both shut-off valves will close. The system is disabled when the nose wheel is on the ground (WOW switch depressed).</p> <p>MANUAL OPERATION: With the switch at the manual position, the operation is not sensor dependent. The switch in "MANUAL" position commands the shut-off valve to open and bleed air is directed to the de-icing surfaces. The "DE-ICING ON" light will illuminate in the caution/advisory panel. In manual operation, the nose wheel micro-switch will have no effect on the system operation.</p> | | | |

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| <p>9. AIR DIFFUSER</p> | <p>AS REQUIRED</p> |  |  <p>VOLUME REGULATION</p> <p>FLOW DIRECTION REGULATOR</p> <p>DIFFUSER</p> |
| <p>Keyboard command:</p> | | | |

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| <p>10. IFF</p> | <p>ON</p> |  |  <p>IFF CONTROL BOX</p> |
| <p>Keyboard command:</p> | | | |
| <p>Power Switch: The doubled switch labeled "FEEDING" switches (7) on the IFF system.</p> | | | |

END