FlightSafety International
Learjet 35A / 36A
FC-200 (PRE-RVSM)

Pilot Checklist with Expanded Procedures - Limitations Performance and Systems Summary
FOR TRAINING PURPOSES ONLY

The material contained in this training material is based on the information obtained from the aircraft manufacturer’s Pilot Manuals and Maintenance Manuals. It is to be used for familiarization and training purposes only.

At the time of printing this document contained then-current information. In the event of conflict between data provided herein and that in publications issued by the manufacturer or the FAA, that of the manufacturer or the FAA shall take precedence.

We at FlightSafety want you to have the best training possible. We welcome any suggestions you may have for improving upon this handout or any other aspect of our training program.

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BEFORE STARTING ENGINES

♦️ 1. Control Locks ................................................................. STOWED
♦️ 2. Safety Belts, Shoulder Harnesses & Seats .................................. SECURE & ADJUST
♦️ 3. Flight Controls ................................................................. CHECK

4. Oxygen System:
   a. Pass Mask Valve .............................................................. AUTO
   b. Pass Oxygen Valve ......................................................... NORM
   c. Oxygen Pressure .......................................................... CHECK
   d. Crew Masks .............................................................. CHECK & SELECT 100%

♦️ 5. Circuit Breakers ................................................................. IN

6. Landing Gear Switch ........................................................... DN

7. Emergency Batteries Check:
   a. EMER BAT 1 Sw ............................................................ STDBY
      Check attitude gyro for starting and erection.
   b. EMER BAT 2 Sw ............................................................. ON
      Check both amber EMER PWR lights illuminated, and equipment powered by 2nd emergency battery for operation.
   c. EMER BAT 1 Sw ............................................................. ON
      Check attitude gyro for operation, and both amber EMER PWR Light Illuminated, and green gear LOCKED DN lights illuminated.

*For thru flight: EMER BAT Switch ......................................................... ON
   Check attitude gyro for starting and erection.*

♦️ 8. Panel Switches & Avionics .......................................... OFF or SET
   Fuel Cmpr (ON)                          Bleed Air (ON)
   Anti-Skid (ON)                          Pitch Trim (PRI)
   Static Source (CLOSED)                  Jet Pumps (ON)
   Pilot’s Alt (NORM)                      Emer Press (NORM, if installed)

9. Batteries ................................................................. CHECK & ON
   Note: Bat ON energizes WS ice detect lights. Check ITT, N₁, and N₂ to ensure OFF flags are retracted.
   a. BAT 1 Switch ............................................................. SET to BAT 1
      Check proper voltage and amber EMER PWR light out.
   b. BAT 2 Switch ............................................................. SET to BAT 2
   c. BAT 1 Switch ............................................................. OFF
      Check for proper voltage, then BAT 1 Switch set to BAT 1.

*For Thru Flight: both BAT Switches ......................................................... ON

♦️ 10. GPU (if desired) ............................................................... CONNECT
   Note: Ensure reg. to 28 vdc and limited to 1100 amps maximum.

(Procedure Continued)
11. **Inverter System Checks**: (For aircraft with aux inverter, see AFM.)
   a. PRI INVERTER Switch .................................................. PRI
   SEC INVERTER Switch .................................................. OFF
   AUX INVERTER Switch .................................................. OFF
   Check PRI INV light out and AC volts in green arc.
   b. AC BUS Switch .................................................. PRI then SEC
   Check AC volts in both positions.
   c. SEC INVERTER Switch .................................................. SEC
   Check SEC INV light out.
   d. PRI INVERTER Switch .................................................. OFF
   Check AC volts.
   e. AUX INVERTER Switch ................................................. CHECK
      (1) AUX INV SW Switch .................................................. ON
      Check Aux INV light not illuminated.
      (2) SEC INVERTER Sw. .................................................. OFF
      Check AC volts in green arc.
   e. PRI, SEC, and AUX INVERTER Switches ........................... ON

♦ 12. **Emergency Lights** (if installed) .................................. CHECK & ON

♦ 13. **System Pressure**:
   a. Hydraulic Pressure .................................................. CHECK
   b. Emergency Air Pressure ............................................. CHECK

♦ 14. **Parking Brake** .................................................. SET

15. **Emer Brake** .................................................. Pull out of recess then return

♦ 16. **Hyd Pump** .......................................................... OFF

17. **Annunciator Lights** .................................................. TEST

18. **Warning Systems**:
   a. **Ice Detect Lights** .................................................. CHECK
   b. **Gear Warning** .......................................................... TEST
   c. **Fire Detect** ........................................................... TEST
      (1) TEST Selector Switch .................. ROTATE TO FIRE DET
      (2) TEST BUTTON .................................................. DEPRESS
          ENG FIRE PULL T-Handle shall illuminate and flash. This
          indicates continuity of the fire detect system.
      (3) TEST Button .................................................. RELEASE

Start One Engine if GPU not Utilized
(See *Starting Engines* Checklist)

d. **Cabin Altitude Warning** ............................................. TEST
   (1) TEST Selector Switch .................. ROTATE TO CABIN ALT,
      THEN DEPRESS AND HOLD TEST BUTTON
      Cabin altitude warning horn shall sound.
   (2) HORN SILENCE SW .................. MOMENTARILY ENGAGE
      Cabin altitude warning shall cease.
   (3) TEST Button .................................................. RELEASE
(Procedure Continued)
e. Stick Puller/Mach Warning Check:
   (1) INVERTER(S) ......................................................... ON
   (2) Pitch Trim .......................................................... SET WITHIN T.O. LIMITS
   (3) L STALL WARNING Switch ........................................ ON
   (4) TEST Selector Switch ......................................... ROTATE TO MACH
   (5) TEST Button .................................................. DEPRESS AND HOLD
       Control column shall move aft with 18 lbs force and aural
       Overspeed horn shall sound.
   (6) Mach Trim Check:
       (1) TEST Selector Switch ...................... ROTATE TO MACH TRIM
       (2) TEST Button ........................................ DEPRESS AND HOLD
           Stab trims up for 1-3 s.  MACH TRIM light illuminates and
           overspeed warning horn sounds.
       (3) TEST Button ............................................... RELEASE
           Mach Trim Wing. Lt. shall go out & Overspeed horn cease.
   (7) Stall Warning System Check:
       Note: For heavy winds, head aircraft into wind.
       (1) Flaps ................................................................... UP
       (2) STALL WARNING Switches .................................... ON
       (3) TEST Selector Switch .......................... ROTATE TO L STALL
           THEN DEPRESS AND HOLD TEST BUTTON
           Pilot's AOA indicator will sweep from green to red segment.
           (a) Passing the green-yellow margin the shaker will
               activate and the L STALL warning light shall flash.
           (b) In the red segment, the pusher will activate briefly, then
               stop.  L STALL wing light will illuminate steady just prior
               or at pusher activation.  After pusher stops, the needle
               shall sweep back and remain in yellow or green segment.
       (4) TEST Button ............................................... RELEASE
       (5) TEST Selector Switch .......... ROTATE TO RIGHT STALL
           AND REPEAT TEST FOR COPILOT'S SYSTEM
       (6) TEST Button ................................................. RELEASE
       (7) Flaps .................................................................... DN
           Note that both AOA indicators shift position three times.
       (8) STALL WARNING Switches ................................. OFF
   ♦ 19. Third Attitude Gyro .......................... UNCAGE, GYRO ERECT
   20. Pressurization & Temperature Controls:
        a. Pressurization Controls:
           (1) L and R Bleed Air Switches .......................... ON
           (2) Cabin Air ......................................................... OFF
           (3) Auto-Man Switch .................................... AUTO
   ♦ (4) Cabin Controller .......................... CRUISE ALTITUDE
           (5) Rate Selector ........................................ AS DESIRED
        b. Cabin Temp Controls ........................... AS DESIRED

(Procedure Continued)
♦ 21. Trim Systems Check:
   a. PITCH TRIM Selector Sw (pedestal) .......................... SEC
   b. PITCH TRIM Selector Sw (pedestal) NOSE UP then NOSE DN
      Check stab trim in both directions & rate at ½ rate of PRI Trim.
   c. Either Control Wheel Trim Sw.................................NOSE UP & DN
      Trim motion shall not occur.
   d. PITCH TRIM Selector Sw .......................................... OFF
   e. Pilot’s and Copilot’s Ctrl Wheel Trim Sws....... Chk Individually:
      With arming button depressed, trim NOSE UP & DN. Trim
      motion shall not occur.
   f. PITCH TRIM Selector Sw ............................................. PRI
   g. Pedestal Trim Sw ..................................................NOSE UP & DN
      Trim motion shall not occur.
   h. Pilot’s Control Wheel Switch:
      “Barrel” sw in all four directions: Trim motion shall not occur.
      Depress arming button: Trim motion shall not occur.
      Depress arming button and move sw in all four directions:
      Trim motion shall occur.
   i. Repeat step h. for copilot’s control wheel trim sw.
   j. Trim using copilot’s control wheel trim sw, then trim in opposite:
      direction using pilot’s trim sw. Pilot’s shall override copilot’s.
      Repeat for each trim position.
   k. Pilot’s Control Wheel Trim Sw................................. NOSE UP
      Then depress MSW; trim motion shall stop. Repeat for nose DN.
   l. Repeat step k. using Copilot’s trim switch and MSW.
   m. Yaw Trim Sw – Each Half Separately ...................... NOSE L & R
      Trim motion shall not occur.
   n Yaw Trim Sw – Both halves Simultaneously.......... NOSE L & R
      Trim motion shall occur.
   o. Trim – All Three Axis........................................ SET FOR TAKEOFF
      T.O. TRIM light not illuminated. Pitch trim per CG Chart.

(Procedure Continued)
22. Autopilot Monitor Check:
   a. AUTOPILOT Switch ............................................................. ON
      PWR light on AP Controller (glareshield) will illuminate
   b. TEST Button ............................................................. DEPRESS
      All lights on AP Controller will illuminate.
   c. ADI & HSI Flags ................................................... RETRACTED
   d. ENG Button .............................................................. DEPRESS
      ROLL, PITCH, & LVL lights illuminate. AP opposes movement.
   e. TEST Button ............................................................. DEPRESS & HOLD
   f. Control Wheel Trim Sw .................................... “BARREL” LWD
      ROLL light extinguishes and AP disconnect horn sounds in 5 s.
   g. TEST Sw & Trim Sw .................................................. RELEASE
   h. Repeat steps d., e., f., & g. except move trim ................... RWD
   i. Repeat steps d. & e.
   j. Control Wheel Sw ............................................ “BARREL” DN
      Hold moderate pull force on column. PITCH light will go out and
      AP disconnect horn will sound within 6 seconds.
   k. ENG Button .............................................................. DEPRESS
      MSW............................................................................. DEPRESS
      Check that AP pitch & roll axis disengage.

23. Yaw Dampers Check:
   a. PRI PWR/TEST Button .................................................. DEPRESS & HOLD
      PWR/TEST light & PRI ENG light will illuminate. Release
      PWR/TEST button. PWR/TEST light will remain on and
      PRI/ENG light will go out.
   b. SEC PWR/TEST Button .................................................. DEPRESS & HOLD
      PWR/TEST light & SEC ENG light will illuminate. Release
      PWR/TEST button. PWR/TEST light will remain on and
      SEC/ENG light will go out.
   c. Yaw Force Indicator ............................................... CENTER
   d. SEC ENG Button.......................................................... DEPRESS
   e. Override yaw damper with rudder pedals. Note force indicators.
   f. Control Wheel.................................................. ROTATE FULL L & R
      Note rudder deflection full left & right.
   g. SEC ENG OFF Button .................................................. DEPRESS
      SEC ENG light will extinguish and yaw damper will disengage.
   h. PRI ENG Button.......................................................... DEPRESS
   i. Override yaw damper with rudder pedals. Note force indicators.
   j. Control Wheel.................................................. ROTATE FULL L & R
      Note rudder deflection full left & right.
   k. MSW ............................................................................. DEPRESS
   k. PRI ENG Button .......................................................... DEPRESS
      PRI ENG light will extinguish and yaw damper will disengage.
24. **Fuel Panel Check:**
   a. Fuel Counter................................................................. ZERO
   b. Fuel Quantities ............................................................... CHECK
   c. Crossflow Valve............................................................ CLOSE
   d. Transfer -- Fill ............................................................. OFF
   e. L STANDBY PUMP Switch .............................................. ON
      Check switch light on (if installed) and L FUEL PRESS light not illuminated.
   f. L STANDBY PUMP Switch OFF
      Check switch light off (if installed).
   g. R STANDBY PUMP Switch .............................................. ON
      Check switch light on (if installed) and R FUEL PRESS light not illuminated.
   h. R STANDBY PUMP Switch .............................................. OFF
      Check switch light off (if installed).
   i. FUS VALVE Switch (if installed) ................................. CLOSE
   h. FUEL JTSN Sw ........................................................... OFF

25. CVR--Test

26. **DRAG CHUTE Handle** (if installed) ................................ STOWED

27. **Takeoff Data** \((N_1, V_1, V_R, V_2, T.O.D.)\) .................................... COMPUTED & BUGS SET
14. Spoileron/Spoiler Check:
   a. Flaps................................................................. CHECK, DN
   b. Control Wheel.................................................. CENTER
   c. SPOILERON RESET Switch................................. HOLD ON
      Rotate wheel, note AUG AIL light, yoke position, release switch.
   d. Control Wheel.................................................. CENTER
   e. SPOILERON RESET Switch................................. HOLD ON
      AUG AIL light will extinguish; rotate wheel other direction,
      note AUG AIL light, yoke position; release switch.
   Note: Wheel should be the same (L & R) to illuminate light.
   f. Control Wheel.................................................. CENTER
   g. SPOILERON RESET Switch................................. ON & RELEASE
      AUG AIL light should extinguish.
   h. Control Wheel.................................................. ROTATE LEFT THEN RIGHT
      Note spoiler & aileron coincides & AUG AIL light extinguished.
   i. SPOILER Switch.................................................. EXT
      Check spoiler ext. in 1 to 2 sec. and spoiler light flashes.
   j. Flaps................................................................. UP OR 8°
      SPOILER light will go steady.
   k. SPOILER Switch.................................................. RET
      Check spoilers retract in approx. 6 sec. and SPOILER light out.
   ♦ 15. Flaps............................................................. SET 20° OR 8°
   ♦ 16. Hydraulic Pressure ........................................ CHECK

Return to and Complete
Before Starting Engines Checklist (if required)

17. Engine Instruments ................................. Check for Normal Operation
   ♦ 18. Other Engine .................................................. START (optional)
   If other engine is not started, refer to Before Taxi (One Engine) Checklist p 13.
   ♦ 19. GPU (if used).................................................. DISCONNECT
   ♦ 20. Start-Gen Switches .......................................... GEN
   ♦ 22. Starter Disengagement (if required) ................... CHECK
   ♦ 23. Engine Instruments ........................................ CHECK
   ♦ 24. Voltmeter & Ammeters ..................................... CHECK
BEFORE TAXI (TWO ENGINE)

1. Avionics.................................................................SET
2. Radar.................................................................STDBY
3. Circuit Breakers...............................................IN
4. Coffee/Oven (if installed)..............................AS DESIRED
5. Fuel Control Governor.................................CHECK
   a. Left Thrust Lever............................................IDLE
      CAUTION: If the engine accelerates uncontrolled during the
      following steps, set FUEL CMPTR switch ON and
      shut down engine.
   b. L FUEL CMPTR Switch.................................OFF
      Note L FUEL CMPTR light illuminated & engine speed chg.
      CAUTION: If the engine does not respond during the next
      step, shut down engine and correct prior to flight.
   c. Increase TL and note increase in N2.
   d. Retard TL and note decrease in N2.
   e. If N2 responds to TL, L FUEL CMPTR ON, and note light out.
   f. Repeat steps a. thru e. for R engine.
6. Windshield Heat........................................PURGE AS REQ’D
   a. WSHLD HEAT-ON-OFF Sw. – ON until water has cleared.
   b. WSHIELD OV HT Light - Monitor
      a. WSHIELD HEAT-ON0OFF Sw. – OFF
7. Lights.................................................................ON, AS REQ’D
8. Anti-Skid..........................................................ON, LIGHTS OUT
9. Pax Briefing/Cabin Secured............................COMPLETE
10. No Smoking Fasten Seat Belt Sign.........................ON
11. Parking Brake..................................................RELEASE
TAXI AND BEFORE TAKEOFF
(TWO ENGINE)

♦ 1. Brakes & Steering ................................................................. CHECK

♦ 2. Fuel Panel ................................................................. CHECKED & BALANCED

TR Thrust Reversers (Aeronca) .................................................. CHECK
   a. T/R POSN IND, EMER STOW, & CONT CBs – IN.
   b. T/R Position Indicator lights – OUT.
   c. NORM-EMER STOW Sw – NORM
   d. Thrust Levers – IDLE.
   e. Thrust Reverser Levers – IDLE/DEPLOY.
      Check light sequence and throttle lock releases when DEPLOY lights illuminate.
   f. NORM-EMER STOW Sw – EMER STOW.
      Check proper light sequence and EMER STOW light illuminated.
   g. Thrust Reverser Levers – STOW.
   h. NORM-EMER STOW Sw – NORM.
      EMER STOW light shall go out.
   i. Thrust Reverser Levers – IDLE/DEPLOY.
      Check for proper light sequence.
   j. BLEED VALVE Lights .......................................................... OUT

♦ 3. Flight Controls ................................................................. CHECK

♦ 4. Flight Instruments ............................................................ CHECK

♦ 5. Takeoff Data
   (N₁, V₁, V₁, V₂ & T.O. Distance) .......... REVIEWED & BUGS SET

♦ 6. Engine Instruments ........................................................... CHECK

♦ 7. Voltmeter & Ammeter .......................................................... CHECK

♦ 8. Nav Equipment ................................................................... SET

♦ 9. Radar ............................................................................. AS REQ’D

♦ 10. Spoilers ............................................................... RETRACTED, LIGHT OUT

♦ 11. Flaps ............................................................... SET 20° or 8°, CHECK INDICATION

♦ 12. Trims (3) ........................................................................ SET/PRI/LIGHT OUT

♦ 13. Pressurization ................................................................. SET

♦ 14. Cabin Air ................................................................. ON

♦ 15. Cabin Temp Controls .......................................................... SET

(Procedure Continued)
16. **Anti-Ice Systems** ........................................... CHECK & AS REQ'D
   
a. Windshield Heat – As required.
   
   Maintain minimum RPM required to keep windshield clear.

b. NAC HEAT Switches – ON one at a time. Check amber ENG ICE lights extinguished by 60% Fan Speed (N1)

c. NAC HEAT Switches – As required.

d. STAB WING HEAT Sw – ON. Check for slight up rate on Cabin Climb Indicator.

e. STAB WING HEAT Sw – As required. Monitor WING TEMP and STAB TEMP indicators to prevent overheat condition.

16. **Electrically-Heated Windshield** (if installed) ...................... ON

16. **Crew Takeoff Briefing** .................................................. COMPLETE

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**TAKEOFF PITCH TRIM SETTINGS – DEGREES**

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<th>16</th>
<th>20</th>
<th>24</th>
<th>28</th>
<th>30</th>
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<td>7.5</td>
<td>7.4</td>
<td>7.3</td>
<td>7.2</td>
<td>6.1</td>
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**BEFORE TAXI (ONE ENGINE)**

1. GPU (if used) ............................................................... DISCONNECT

2. Start-Gen Switch ........................................................... GEN

3. Voltmeter & Ammeter ..................................................... CHECK

4. Avionics ......................................................................... SET

5. Radar ............................................................................. STBY

6. Circuit Breakers ............................................................ IN

7. Coffee/Oven ..................................................................... AS DESIRED

8. Lights .......................................................................... ON, AS REQ'D

9. Anti-Skid ......................................................................... ON, LIGHTS OUT

10. Pax Briefing/Cabin Secured ........................................ COMPLETE

11. **No Smoking Fasten Seat Belt Sign** .............................. ON

12. Parking Brake .............................................................. RELEASE
TAXI AND BEFORE TAKEOFF (ONE ENGINE)

1. Brakes & Steering ................................................................. CHECK
2. Fuel Panel ................................................................. CHECKED AND BALANCED
3. Flight Instruments ................................................................. CHECK
4. Takeoff Data
   (N₁, V₁, V₂ & T.O. Distance) .................. REVIEWED & BUGS SET
5. Nav Equipment ........................................................................... SET
6. Radar ................................................................................ AS REQ'D
7. Spoilers .............................................................................. RETRACTED, LIGHT OUT
8. Flaps ................................................................. SET 20° or 8°, CHECK INDICATION
9. Trims (3) ............................................................................ SET/PRI/LIGHT OUT
10. Pressurization ...................................................................... SET

TAKEOFF PITCH TRIM SETTINGS – DEGREES

<table>
<thead>
<tr>
<th>CENTER OF GRAVITY -- % MAC</th>
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<tbody>
<tr>
<td>5</td>
</tr>
<tr>
<td>7.6</td>
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</tbody>
</table>

Ready to Start 2nd Engine

11. Air Conditioner ................................................................. OFF
12. Aux Heat (if installed) ......................................................... OFF
13. Thrust Lever ................................................................. CUTOFF
14. Engine ............................................................................ START
15. Start-Gen Switch ............................................................... GEN @ IDLE
16. Battery Charging Bus/Current Limiters ................................. CHECK
17. Starter Disengagement (if required) ...................................... CHECK
18. Voltmeter & Ammeters ......................................................... CHECK
19. Cabin Temp Controls ........................................................... SET
20. Anti-ice Systems .............................................................. CHECK & AS REQ'D
   Note: Cabin Air must be on to check wing and stab anti-ice.
21. Electrically–Heated Windshield (if installed) ......................... OFF
22. Engine Instruments ............................................................. CHECK
23. Fuel Control Governor ......................................................... CHECK
24. Flight Controls ................................................................... CHECK
25. Fuel Panel ........................................................................... CHECKED & BALANCED
26. Cabin Air .............................................................................. ON
27. Crew Takeoff Briefing ......................................................... COMPLETE
RUNWAY LINEUP

♦ 1. Parking Brake ................................................................. RELEASED
♦ 2. Transponder ................................................................. ON
♦ 3. Pitot Heat ................................................................. ON
   a. L. PITOT HEAT Sw – ON. Note that PITOT HEAT light remains illuminated, then L PITOT HEAT Sw – OFF.
   b. R. PITOT HEAT Sw – ON. Note that pitot heat light remains illuminated.
   c. L. PITOT HEAT Sw – ON. Note that L. PITOT HEAT light out.
♦ 4. Lights (Strobe, Recognition & Landing) ..................................... ON
♦ 5. Stall Warning ................................................................. ON
♦ 6. Ignition ........................................................................... ON
♦ 7. Annunciator Panel ......................................................... NORMAL
### Annunciators for Learjet 35A/36A

#### Table 4-1. ANNUNCIATOR ILLUMINATION CAUSES

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<th>CAUSE FOR ILLUMINATION</th>
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<tr>
<td>DH</td>
<td>At or below altitude set on radio altimeter</td>
<td>FUEL FILTER</td>
<td>Differential pressure is 1.25 psi across one or both airframe fuel filters. Fuel is bypassing the filter.</td>
</tr>
<tr>
<td>LOW FUEL</td>
<td>Fuel is below 400-500 pounds in either wing tank</td>
<td>L ENG ICE</td>
<td>1. Switch ON—Insufficient pressure to nacelle or fan spinner or failure of valve(s) to open</td>
</tr>
<tr>
<td>L FUEL PRESS</td>
<td>Less than 0.25-psi fuel pressure to engine (Light extinguishes at 1 psi.)</td>
<td>R ENG ICE</td>
<td>2. Switch OFF—Nacelle or fan spinner valve(s) open</td>
</tr>
<tr>
<td>R FUEL PRESS</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>SPOILER</td>
<td>Steady—Spoilers not locked down (normal if extended)</td>
<td>L FUEL CMPTR</td>
<td>1. Switch is off</td>
</tr>
<tr>
<td>(FC 200)</td>
<td></td>
<td>R FUEL CMPTR</td>
<td>2. Computer has failed with the switch on.</td>
</tr>
<tr>
<td>SPOILER</td>
<td>Flashing—Spoilers deployed with 13° or more flaps extended (normal on landing roll)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(FCS30)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOOR</td>
<td>One of 10 latch pins not fully engaged or hook motor not fully retracted</td>
<td>L STALL</td>
<td>1. Steady—system is off or failed. (During pusher actuation it is normal.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R STALL</td>
<td>2. Flashing—In shaker range</td>
</tr>
<tr>
<td>AUG AIL</td>
<td>1. Spoilers split 6° or more</td>
<td>L VG MON</td>
<td>One motor in the vertical gyro has failed.</td>
</tr>
<tr>
<td></td>
<td>2. Spoiler and aileron split 6° or more in spoileron mode</td>
<td>R VG MON</td>
<td></td>
</tr>
<tr>
<td>PITOT HT</td>
<td>1. One or both pitot heaters is inoperative with the switches on.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. One or both pitot heat switches is off.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANNUNCIATOR</td>
<td>CAUSE FOR ILLUMINATION</td>
<td>ANNUNCIATOR</td>
<td>CAUSE FOR ILLUMINATION</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>MACH TRIM</td>
<td>System is inoperative with speed above 0.69 Mach and autopilot disengaged. If above 0.74 Mach, the overspeed warning horn sounds.</td>
<td>WING OV HT</td>
<td>Wing structural temperature is above 215°F.</td>
</tr>
<tr>
<td>PRI INV</td>
<td>1. Inverter is off.</td>
<td>WSHLD HT</td>
<td>The windshield anti-ice valve is open.</td>
</tr>
<tr>
<td></td>
<td>2. Inverter switch is on and output is less than 90 volts, or less than 10 volt-amps.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEC INV</td>
<td>Inverter has failed with the switch on.</td>
<td>ALC AI</td>
<td>1. Late ECS--the alcohol tank is empty.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Early ECS--alcohol system pressure is low.</td>
</tr>
<tr>
<td>AUX INV</td>
<td></td>
<td>BAT 140</td>
<td>One or both batteries’ temperature is 140°F or more.</td>
</tr>
<tr>
<td>LO OIL PRESS</td>
<td>Oil pressure on one or both engines is below 23 ±1 psi.</td>
<td>BAT 160</td>
<td>One or both batteries’ temperature is 160°F or more.</td>
</tr>
<tr>
<td>STAB OY HT</td>
<td>Stabilizer structural temperature is above 215°F.</td>
<td>ENG SYNC</td>
<td>The engine sync switch is on with the nose gear down and locked.</td>
</tr>
<tr>
<td>WSHLD OY HT</td>
<td>Windshield heat has been shut off by a temperature limit.</td>
<td>TO TRIM</td>
<td>Airplane is on the ground and the horizontal stabilizer is not trimmed for takeoff.</td>
</tr>
<tr>
<td></td>
<td>GND–High or low limit</td>
<td>CUR LIM</td>
<td>Failure of either or both 275-amp current limiter (SN6 35-371, 35-390 and subsequent 36-048 and subsequent).</td>
</tr>
<tr>
<td>STEER ON</td>
<td>Nosewheel steering is engaged</td>
<td>ARMED</td>
<td>Fire-extinguishing bottles are armed.</td>
</tr>
<tr>
<td>BLEED AIR L</td>
<td>1. Overtemperature of pylon (250°F) or duct (590°F/645°F)</td>
<td>FIRE PULL</td>
<td>Fire/overheat is detected in associated engine.</td>
</tr>
<tr>
<td>BLEED AIR R</td>
<td>2. Both lights–Manifold overpressure (47 psi) on SNs 35-082, 35-087 through 35-106, 35-108 through 35-112, 36-023 through 36-031, and AKM 76-7</td>
<td>MSTR WARN</td>
<td>A red light on the master warning panel is illuminated.</td>
</tr>
<tr>
<td>L GEN R GEN</td>
<td>Indicated generator is off or has failed.</td>
<td>LOW HYD</td>
<td>LOW HYD–Hydraulic system pressure is 1,125 psi or less.</td>
</tr>
<tr>
<td>CAB ALT</td>
<td>Cabin altitude has reached 8,750 ±250 feet and controller has automatically switched to manual control.</td>
<td>FUEL XFLO L</td>
<td>FUEL XFLO–Fuel crossflow valve is open.</td>
</tr>
<tr>
<td>(Late ECS Only)</td>
<td></td>
<td>R LO OIL</td>
<td>L LO OIL, R LO OIL–Indicated engine oil pressure is low.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PITCH TRIM</td>
<td>1. Primary pitch trim is running at fast rate with flaps up.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 530 AFCS</td>
<td>2. Primary pitch trim has a fault (potential runaway).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Wheel master switch is depressed</td>
</tr>
<tr>
<td>ANNUNCIATOR</td>
<td>CAUSE FOR ILLUMINATION</td>
<td>ANNUNCIATOR</td>
<td>CAUSE FOR ILLUMINATION</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>--------------</td>
<td>----------------------------------------------------</td>
</tr>
<tr>
<td>LH ENG CHIP</td>
<td>Ferrous metal particles are detected in indicated engines oil.</td>
<td>AIR IGN L</td>
<td>Ignition system is activated.</td>
</tr>
<tr>
<td>RH ENG CHIP</td>
<td></td>
<td>AIR IGN R</td>
<td></td>
</tr>
<tr>
<td>EMER PWR 1</td>
<td>Indicated emergency battery is powering the connected systems.</td>
<td>ANTI-SKID GEN</td>
<td>Indicated antiskid generator is inoperative.</td>
</tr>
<tr>
<td>EMER PWR 2</td>
<td></td>
<td>L CUR LIMITER</td>
<td></td>
</tr>
<tr>
<td>START L</td>
<td>Indicated starter is engaged.</td>
<td>R CUR LIMITER</td>
<td>Indicated 275-ampere current limiter has failed.</td>
</tr>
<tr>
<td>- START R</td>
<td></td>
<td>L PITOT HEAT</td>
<td></td>
</tr>
<tr>
<td>COMPTR WARN</td>
<td>HSI headings are not within 7°.</td>
<td>R PITOT HEAT</td>
<td></td>
</tr>
<tr>
<td>NAC HEAT ON</td>
<td>L or R NAC HEAT switches are ON.</td>
<td>PARK BRAKE</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td>WSHLD DEFOG</td>
<td></td>
</tr>
<tr>
<td>L NAC HEAT</td>
<td>Indicated NAC HEAT switch is ON.</td>
<td>L</td>
<td></td>
</tr>
<tr>
<td>R NAC HEAT</td>
<td></td>
<td>R</td>
<td></td>
</tr>
</tbody>
</table>
Limitations

Gross Weight and C.G.

1. Max Ramp Weight 18,500 lbs (A 1-4)
2. Max Takeoff weight 18,300 lbs (A 1-4)
4. Max Zero Wing & Tip Fuel 13,500 lbs (A 1-3)

Note:
All weights in excess of 13,500 pounds must consist of wing and tip tank fuel
Except that:

1. Weight may be increased to 14,000 lbs provided the excess consists of fuselage fuel, in which case the fuselage fuel must be transferred prior to reaching a total wing fuel quantity of 2,250 lbs.

2. VMO must be reduced to 325 KIAS (AVCON MOD 319 KIAS) in the event the additional fuselage fuel cannot be transferred.

5. Center of Gravity Limits –

1. FWD limit up to 10,000 lbs 5.0% (A WB –11)
2. FWD limit at 18,500 lbs 19.17% (A WB –11)
3. AFT limit all gross weights 30.00% (A WB –11)
1. Nose Tire – 104 – 114 PSI (loaded) 105+/- 5 psi (unloaded)
2. Main Tires – 161– 171 PSI (loaded) 160+/- 5 psi (unloaded)

SYSTEMS LIMITS

1. Do not extend spoilers in flight with wing flaps extended, or if VMO/MMO is exceeded (A 1-16)

2. **Both Yaw Dampers must be operative prior to flight.** Yaw Damper must be on and operative for all flight conditions except Takeoff, Landing and trimming the rudder.

3. Avcon Delta Fins will allow dispatch without yaw damper.

4. **Both stall warning systems must be on and operating prior to flight** and remain on throughout flight A 1-15) (Cannot be placed on the MEL)

5. Max indicated Mach with BOTH Mach trim and autopilot disengaged or inoperative is .74M (A 1-9)

6. Max Mach Number with the stick puller inoperative is .74 (A 1-9)

7. Max Mach Number with any BLE’s missing is .77MI (A 1-9) .78MI (A 1-9)
8. Max Flap/Gear operating or extended speeds: (A 1-11)

**Honeywell West Star RVSM**

\[ V_{LO} = 200 \text{ KIAS (A 1-7)} \]
\[ V_{LE} = 260 \text{ KIAS (A 1-9)} \]

Flaps 8°........200 KIAS
Flaps 20°........185 KIAS.
Flaps 40°........150 KIAS.

**Learjet ISS/Aeromech RVSM**

\[ V_{LO} = 200 \text{ KIAS (A 1-7)} \]
\[ V_{LE} = 260 \text{ KIAS (A 1-9)} \]

Flaps 8°........200 KIAS
Flaps 20° .......200 KIAS
Flaps 40° .......150 KIAS

**AVCON Modification**

\[ V_{LO} = 200 \text{ KIAS (A 1-7)} \]
\[ V_{LE} = 260 \text{ KIAS (A 1-9)} \]

Flaps 8° ........197 KIAS
Flaps 20° ........182 KIAS
Flaps 40° .........152 KIAS

**ZR Lite with West Star RVSM**

\[ V_{LO} = 200 \text{ KIAS (A 1-7)} \]
\[ V_{LE} = 260 \text{ KIAS (A 1-9)} \]

Flaps 8° .........250 KIAS
Flaps 20° ..........185 KIAS
Flaps 40° ..........150 KIAS
9. To assure proper trim systems operation, the **BEFORE STARTING ENGINES trim systems checks** must be successfully completed before each flight. Undetected failures within the pitch trim system create the potential for a trim runway. (A 1-15)

**AUTOPILOT/FLIGHTDIRECTOR (A – Autopilot Supplement – 1)**

1. The Autopilot/Flight Director system is approved for Category 1 ILS approaches
2. Maximum operating speed is VMO/MMO.
3. When using the autopilot, the pilot or co-pilot must be in the respective seat and the seat belt fastened.
4. Autopilot pitch and roll axis must not be used for take-off or landing
5. The minimum altitude for use of the autopilot aircraft configured for Approach is 190 feet AGL.
6. **Do not** extend spoilers with autopilot engaged.
7. If heavy precipitation or severe turbulence is encountered, use attitude mode (Pitch and Roll) with soft mode engaged.
8. Autopilot may not be used in any axis which fails Autopilot Monitor Check.
9. If the APPR light is illuminated with the flaps less than 13°, Do not use roll or pitch modes.
10. Autopilot must be disengaged before switching static source.
11. Maximum demonstrated loss of altitude in-flight (during malfunction of A/P)

   Max Loss Cruise 460’
   ILS 2-Eng 50’
   ILS SE 40’

**11. Autopilot Bank Limits**

<table>
<thead>
<tr>
<th></th>
<th>J.E.T. PILOT’S GUIDE FC-200</th>
</tr>
</thead>
<tbody>
<tr>
<td>LWD/RWD Switch</td>
<td>30° 3-4</td>
</tr>
<tr>
<td>HDG mode</td>
<td>25° 3-9</td>
</tr>
<tr>
<td>TRK mode</td>
<td>15° 10-1</td>
</tr>
<tr>
<td>A/P DISCONNECT</td>
<td>38° +2° 4-1</td>
</tr>
<tr>
<td>Roll rate (typical)</td>
<td>6°/sec 3-3</td>
</tr>
<tr>
<td>A/P DISCONNECT</td>
<td>13.3°/sec 4-1</td>
</tr>
</tbody>
</table>

**12. Autopilot Pitch Limits**

<table>
<thead>
<tr>
<th></th>
<th>3-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX NOSE-UP</td>
<td>20°</td>
</tr>
<tr>
<td>MAX NOSE-DN</td>
<td>10°</td>
</tr>
<tr>
<td>Pitch rate (typical)</td>
<td>1°/sec</td>
</tr>
</tbody>
</table>
DC POWER DISTRIBUTION

ELECTRICAL:
- Generator output limits are:
  320 amps - Ground Operations
  400 amps - Flight Operations
- With no CUR LIM light(s) or Starter Disengagement Lights, a check must be done on every engine start.
- Max GPU output is 28 vdc, 1,100 amps. (tower shaft torque limits)
- GPU recommended for Start with OAT below 32°F (Minimum amps 500)

LIGHTING:
- FLOOD lights should be operated for 2-3 minutes at max intensity before dimming to prolong tube life)
- FLOOD lights and EL lights are 115 VAC

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1. On Aircraft with an auxiliary inverter, operate with all three inverters “ON” for load sharing.

2. “AUX INV” warning light illuminates only when the inverter is selected to “ON” and is inoperative.

3. The auxiliary inverter is powered by the Battery Charging Bus.
CIRCUIT BREAKER PANEL - TYPICAL

Figure 2-12. Typical Circuit-Breaker Panels—Sn 35-202 and Subsequent, except 35-205, 36-041 and Subsequent, and Airplanes Incorporating AMK 78-13
FUEL SYSTEM

6.7 lb/gal. 6.7 lb/gal.

Max usable Fuel in Pounds:

<table>
<thead>
<tr>
<th></th>
<th>LR-35/35A</th>
<th>LR-36/36A</th>
</tr>
</thead>
<tbody>
<tr>
<td>L Wing Tank</td>
<td>1254</td>
<td>1254</td>
</tr>
<tr>
<td>R Wing Tank</td>
<td>1254</td>
<td>1254</td>
</tr>
<tr>
<td>L Tip Tank</td>
<td>1215</td>
<td>1215</td>
</tr>
<tr>
<td>R Tip Tank*</td>
<td>1175</td>
<td>1175</td>
</tr>
<tr>
<td>Fuselage Tank</td>
<td>1340</td>
<td>2542</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6238</strong></td>
<td><strong>7440</strong></td>
</tr>
</tbody>
</table>

*In standard tips (length) Light may at option be installed in both LH and RH tips if installed use 1175 lbs per Tip.*
Fuel System Limits

1. Max Demonstrated fuel imbalance for landing – 600 lbs in one tip tank (A 4-14)
2. Max Tip tank fuel for landing – 925 lbs each Tip (A 1-13)
3. Do not energize fuselage transfer system when wing and tip tanks are full (A 2-43)
4. Do not cross flow with wing jet pump inoperative. (A 2-62)
5. Minimum 600 lb in EACH wing tank for TAKEOFF & INTENTIONAL GO-AROUND. (A 1-13)
6. Either WING TANK below 600 lb limit PROLONGED pitch to less than 10° nose up. (A 2-35)
7. Low fuel warning light @ 400-500 lbs in either wing tank. For go-around, reduce pitch to a minimum required. (A 2-42)
8. Normal fuselage fuel transfer 35A when tip tank fuel indicates 760 lbs or less in each tank. (A 2-59)
9. Normal fuselage fuel transfer 36A when tip tank fuel indicates 0 lbs in each tank. (A 2-59)
10. Min fuel temperature for take-off:
    a. JP-4, JET B, or AVGAS –54° C (-65° F) (A 1-20)
    b. Other jet fuels –29° C (-20° F)
    c. Refueling Considerations:
11. Fuel flow for proper PRIST mixing 30-60 GPM (Addenda 6)
12. Max/Min fuel per 20oz can of PRIST: (Fuel Addenda 5)
    a. MIL-I-27686 260 gal/ 984 ltrs – 105 gal/397 ltrs
    b. MIL-I-85470 155 gal/587 ltrs – 105 gal/397 ltrs
13. Max Tip Tank imbalance during refueling 125 Gal. (Addenda 9)
14. When using AVGAS
    a. Maximum of 500 Gal per engine per 100 hrs of operation. (A 1-23)
    b. Max Altitude 15,000 feet and both jet pumps and standby pumps on and operating. (A 1-23)
15. Approximately 162 lbs. Fuel unusable in fuselage tank using alternate transfer (gravity method). (A 4-33)

16. Jettison Full tip tanks – approx. 5 min. (A 4-31)

17. Time to reduce from max takeoff wt. to max. landing wt. Is approximately 40 minutes. (A 3-21)

18. Max Altitude for suction feed (red FUEL PRESS light illuminated) – 25,000 feet. (A 4-32).

**POWERPLANT**

**Honeywell TFE731-2C per ST00835CH-D per STC:**

3500 lb SL @ 72°F

- Start Max ITT  880°C
- Takeoff      880°C 5 min max
- Max continuous 865°C
- Max climb    865°C
- Max cruise   827°C
- Transient    890°C for 10 sec

**Honeywell TFE 731-2-2B:**

3500 lb SL @ 72°F

- Max ITT for Start  860°C (861 – 870°C 10 sec; log time and temp over 860°C)
- Max ITT for Takeoff 860°C (5 Minutes)
- Max continuous 832°C (After 30 minutes, 795°C recommended for max engine life)

1. Turbine speeds

<table>
<thead>
<tr>
<th>Green Arc</th>
<th>48-100% (A 1-18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow Arc</td>
<td>100-103% 1 min</td>
</tr>
<tr>
<td>Red Line</td>
<td>103-105% 5 sec</td>
</tr>
<tr>
<td>Over 105%</td>
<td>Remove Engine</td>
</tr>
</tbody>
</table>

2. Turbine Temp

<table>
<thead>
<tr>
<th>Green Arc</th>
<th>230°C -832°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow Arc</td>
<td>832°C – 860°C</td>
</tr>
<tr>
<td>Red Line</td>
<td>860°C</td>
</tr>
</tbody>
</table>
4. Fan speeds

- **Green Arc**: 24 – 100%
- **Yellow Arc**: 100 – 1-3% 1 Min
- **Red Line**: 103 - 105% 5 sec

Over 105%, Remove Engine

5. Engine Start Considerations:

<table>
<thead>
<tr>
<th>NiCad</th>
<th>Lead acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum volts for battery start – 23v</td>
<td>24v</td>
</tr>
</tbody>
</table>

B. Recommend GPU when OAT less than 32° F (0°C) . (A 2-18)

C. Regulate GPU to 28V/ 1100 amps MAX (500 amps min). (A 2-18)

D. After 1st start attempt - wait 1 minute
- 2nd start attempt - wait 1 minute
- 3rd start attempt - wait 15 minutes (A 2-19)
- 4th start attempt - wait 1 minute
- 5th start attempt - wait 1 minute
- 6th start attempt - wait 1 hour

E. Use of SPR Switch is recommended for all start below 0°F OAT. (A 2-18)

N1 DEEC automatically provides SPR

F. Starter cut out speed 45% N2 (A 2-19)

G. Oil pressure within 10 sec. Of ITT indication. (A 2-19)

H. Idle speeds: N1- 26-32% N2-55-62%. (A 2-17)

I. Starter assist air start must be made if below 15% N2. (A 3-17)

J. Max of 3 consecutive starter assisted air start attempts. (A 3-18)

K. Don’t attempt an airstart without indication of FAN rotation. (A 3-17)

6. Oil Reservoir capacity

A. Oil Temp

- **Green Arc**: 30 - 127° C
- **Yellow Arc**: 127 – 140°C (A 1-29)
- **Red Line**: 140°C

B. Oil Press

- **Red Line (min)**: 25 PSI
- **Yellow Arc**: 25 – 38 PSI (A 1-28)
- **Green Arc**: 38 – 46 PSI
- **Yellow Arc**: 46 – 55 PSI
- **Red Line (max)**: 55 PSI (3 minutes maximum above 55 PSI)
Hydraulic System

1. Reservoir Capacity 1.9 Gal
2. Fluid available to ENG pumps 1.5 Gal.
3. Fluid reserve for Aux Pump only .4 Gal.

4. Engine Driven Pumps 4.0 GPM at 1450 PSI (GLJMM 29-10-00, P1). Pump pressure output 1500 – 1550 PSI (P 1-7)

5. Aux pump will cycle on at 1,125 PSI and off at 1250 PSI, flow .5 GPM, (GLJMM 29-29-00, P1)

6. Operate Aux Hyd Pump maximum of 3 min ON and 20 Min OFF. (1 1-16)

7. Ultimate Pressure relief 1700 PSI (P 1-18)

8. Hydraulic Press Gauge
   Green Arc  1250 – 1500 PSI
   Yellow Arc  0-500 PSI
   Red Line   1750 PSI

9. Low Hyd Press Light @ 1,125 PSI or less (GLJMM 29 – 29- 00 P1)

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11. Accumulator Pre-charge 850 PSI (P 1-8)


13. Strut Extension for a loaded aircraft (full fuel)
   a. Strut extension (Nose Gear)  5.25 – 5.75 inches
   b. Strut Extension (Main Gear)  3.25 – 3.5 inches
   c. Nose Gear Tire Chine clearance ¾ “minimum (A 2-2)


15. When below –25°C (-13°F), operate engines three minutes prior to takeoff for hydraulic fluid warm-up. (A 1 – 11)
PRESSURIZATION/AIR CONDITIONING

1. Freon cooling system above 18,000 ft. (A 1- 17) or 35,000 ‘

2. During Engine(s) Start/Taxi Condition, do not turn on air conditioner until one of the following conditions are met:
   a. Each Ammeter reads below 250 amps with both engines operating (A 2-19)
   b. One ammeter reads below 150 amps with one engine operating. (A 2-19)

3. On the ground, don’t operate engines above idle or for extended periods of time with CAB AIR and Bleeds - switch ON. (A 2 – 36)

4. Auxiliary heat operation requires the damper control knob to be closed = Flow into cabin not Baggage compartment. (A 2-37)

5. 8,750 ‘cabin aneroid switches to MAN and Illuminates CAB ALT light
   Aneroid resets (minimally) at 7,200’. (A 2 – 45) (A 4 – 19)

9,500 ‘cabin aneroids (one each EMER VALVE) position EMER VALVES to EMER PRESS. Aneroid reset to enable resetting EMER VALVES at 7,200 ‘
   Must manually reset valve.

10,000’ Cabin altitude Warning Horn (A 4 – 25)

11,500 ‘Cabin Altitude Limiters (P 3-13)

14,000 ‘Oxygen Masks Drop (A 4-24)

   Max Differential Pressure   Outflow Valve  9.4 (P 3-10)
   (Diff. Press. Relief Valves) Cabin Safety Valve  9.7 (P 3-10)
   Normal                     9.2

6. ANTI-ICE ops with EMER bleed Valves On – Pneu Bleed Anti-Ice unavailable
   Except Nacelle heat
ANTI-ICING SYSTEMS

1. Turn on Nacelle Heat, Stab/Wing Heat and Windshield Heat when RAT is 10\(^\circ\) C or below and visible moisture is present. (A 2 – 50)


3. 30 seconds max – Engine OFF On Ground

4. Wing/Stab heat valve fails closed. (TM 10-13)

5. Windshield heat valve fails closed. (TM 10-5)

6. Alcohol Anti-ice system: Fails Off

   1.75 gal tank ------ DURATION: RADOME – 2 hrs, 9 min
   (P 3 – 23)          WSHLD/RADOME – 45 min

   2.25 gal tank ------ DURATION: RADOME – 1 hr. 45 min
   (P 3 – 23)          WSHLD/RADOME – 43 min

![Diagram of pneumatic system](image)
THRUST REVERSERS (AERONCA)

- Operational procedures are mandatory
- Limited to Ground Operations on paved surfaces
- Must not be used for backing up the aircraft
- T/R Circuit Breakers must not be pulled in flight except as specified in Emergency and/or Abnormal Procedures
- Thrust Reversers must not be operated prior to takeoff (except AMK 81-6)
- Thrust Reversers must not be used to control taxi speed except after landing
- Thrust reversers must not be used for touch & go landings
- Do not deploy drag chute while using reverse thrust
- After operation, a visual check of proper blocker door stowing must be made prior to takeoff unless AMK 81-6 is installed.
- Maximum reverse thrust usable at 60 KIAS or above is equal to (N1) Takeoff Power setting
- Minimum Turbine Speed (N2) above 40,000 feet is 86% rpm when the N2 placard is installed on the instrument panel. Otherwise, N2 will be limited by the Fuel Computer (may be slightly less than 86%.

OXYGEN SYSTEM

1. 38 Cu. Ft. Bottle @ 1800 PSI (A – 22)
2. Pressure Relief Valve opens @ 2,700 – 3,000 psi
3. 14,000 Cabin Altitude – Passenger Masks Drop (inop with DC Failure).
4. CREW MASKS: (A2 – 53) (Puritan-Bennett Pressure Demand Regulator)
   a. Automatic 100% oxygen above 33,000 ft cabin altitude.
   b. Automatic Positive Pressure Breathing above 39,000 ft cabin altitude.
   c. 100% selection provides 100% oxygen on demand.
   d. EMER selection provides 100% oxygen under slight positive pressure for smoke exclusion.
# Oxygen Requirements

<table>
<thead>
<tr>
<th>Above FL 250 AFM</th>
<th>Ten Minute Supply for all occupants – FAR 91</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>35-002 through 112 (Except 35-107) and 36-002 through 031</td>
</tr>
<tr>
<td></td>
<td>One Pilot must wear mask, around neck or quick-donning masks must be in position</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Above FL 250 FAR 135</th>
<th>One pilot must wear mask, unless both pilots are in their seats with quick-donning masks in place. If one pilot leaves, the other must wear their mask.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above FL 350 FAR 91</td>
<td>One Pilot must wear mask.</td>
</tr>
<tr>
<td>Above FL410 FAR91</td>
<td>35-002 through 112 (Except 107) and 36-002 through 031</td>
</tr>
<tr>
<td>Above FL 410 AFM</td>
<td>Pilots and passengers must wear masks.</td>
</tr>
</tbody>
</table>
Aircraft Performance Review

Aircraft Weight Limits:

18,500 lbs - Maximum Ramp
18,300 lbs – Maximum Takeoff
15,300 lbs - Maximum Landing

Takeoff Weight Limits: Max Certified, Climb & Brake Energy, Takeoff Distance, Climb Gradient

Takeoff Distance: Accelerate Stop/ Go
Takeoff Flight Path/Climb Gradient
Landing Distance: Actual or Factored
Landing Weight Limits: Max Certified, Approach Climb, Landing Climb, Brake Energy

I. Learjet Takeoff Distance

A. Accelerate Stop
B. Accelerate Go to one engine to 35 feet (reference zero)
C. 115% Accelerate Go , two engines to 35 feet

II. FAA climb requirements after reference zero

A. First segment climb
   1. First segment climb must be positive climb gradient out of ground effect gear down, flaps 8° or 20°
   2. V2 at or before 35 feet AGL and takeoff thrust
B. Second segment climb
   1. Second segment climb must be 2.4% gross/1.6% Net, flaps 8° or 20°
   2. Must be 2.4% gross/1.6% Net climb gradient for Visual Climb or 3.3 % Net or Higher for Instrument Climb
C. How can climb gradient be assured? Takeoff weight limits charts in checklist and in flight manual
D. Flight manual also contains brake energy limits
III. Is 2.4% climb gradient always enough?

Aeronautical Information Manual Review (FAR Part 25 certification)

A. Airports with published instrument approaches have been surveyed for obstacles on departure (OIS Obstacle Identification Survey 2.5%)

B. When departing IFR from airports without published instrument approaches, you’re on your own until reaching MEA (recommend 3.3%)

C. Departure survey begins at end of runway 35 feet or less in height scanning for objects that penetrate a slope of 152'/nm 152'/6080 = 2.5%

   1. If slope is not penetrated, IFR departure procedures are not published. Normal departure would be:
      a) Cross the departure end of runway at least 35' high
      b) Maintain a climb of 200”/nm above airport elevation

   2. If slope is penetrated, obstacle avoidance procedures are specified which may include:
      a) A minimum ceiling and visibility to allow the obstacle to be seen and avoided
      b) A required climb gradient of greater than 200'/nm or 3.3%gradient
      c) Detailed flight maneuvers
      d) A combination of A), b), & c).
      e) IFR departures may be banned in extreme cases.

   3. Departure information is found with the airport diagram on Jeppesen charts. The absence of departure information indicates that the 152'/nm (2.5 %) obstruction clearance slope is not penetrated.

   4. On NOCA charts the special"T" symbol on the approach charts indicates departure information for that airport should be consulted. The absence of the special “T” indicates the obstruction clearance slope is not penetrated.

D. The above does not necessarily meet FAR 135.379 (d) (2). To meet 135.379 (d) (2) an airport analysis must be made following your operations manual.
V. Pilot’s responsibility avoiding obstacles during IFR departures

A. consider the type of terrain and obstacles in the vicinity of the airport
B. Determine if a departure procedure or SID is available
C. Determine if obstacle avoidance can be maintained visually or if that departure procedure/SID should be followed.
D. Note – Radar contact alone does not relieve pilot of terrain/obstacle clearance responsibility. Terrain/obstacle clearance does not begin until radar vectors are begun
VI. Aircraft climb charts versus departure climb requirements

A. Departure charts lists climb requirements feet/NM
B. Aircraft charts in % climb

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**Climb Gradients**

*(OIS) 152 FT/NM*

1.6% VFR MIN CLIMB GRADIENT

**3.3 % IFR 200 FT/NM**
Learjet 35A/36A FC 200 Pilot Checklist with Expanded Procedures – Limitations - Performance and Systems Summary

Acceleration Curve 2 Eng

Vr

Takeoff Distance 2 Eng

V1

Decision Distance

Takeoff Field Length

V1

V1

V2

Takeoff Safety Speed

Decision Speed

When Accelerate-Stop = Accelerate - Go Then We Have Balanced Field Length

Accelerate-Go Distance

Accelerate-Stop Distance

FOR TRAINING PURPOSES ONLY
Rev 1.4
VII. Review of landing performance

A. Landing distance – definition

1. Wet runway corrections
2. FAR 135 corrections for scheduled and alternate airports

B. Landing Climb

1. Go-Around in landing configuration with all engines
2. Minimum climb gradient is 3.4% - ensured by landing weight limits charts
3. $V_{REF}/V_{APP}$ is speed used by manufacturer

C. Approach Climb

1. Go-Around with flaps partially retracted
2. Engine out climb
3. Minimum climb gradient is 2.1% - ensured by landing weights limits charts
4. Approach climb speed is approximately $V_{REF} + 7$ KIAS
PERFORMANCE FORMULA’S

1. Groundspeed x Gradient = Feet per Minute

2. Feet Per Minute / Groundspeed = Gradient

3. Feet per nautical mile ÷60 = Gradient

4. 60 feet per nautical mile = 1% Gradient

5. Rise/Run = Gradient x 100 = percent
   100 ft/1,000 ft = .01 x 100 = 1%

6. 2nd segment requirements for Visual obstacle clearance = 2.4% Gross Climb Gradient (1.6 % Net Climb Gradient)

   2nd Segment requirements for IMC obstacle clearance = 3.3% net climb gradient (200 feet per nautical mile)

7. If Climb gradients are greater than 200 feet per nautical mile avoidance procedures are specified. These procedures may be: a ceiling and visibility to allow the obstacles to be seen and avoided; a climb gradient greater than 200 fpm; detailed flight maneuvers; or a combination of the above. In extreme cases, IFR takeoff may not be authorized for some runways.

8. Degrees / .6 = Feet Per Minute

9. Gradient x .6 = Degrees

10. Degrees/.6 x Groundspeed = Feet Per Minute