



Lear 25

Flash Cards





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Overview



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Overview

***What is the Maximum Demonstrated
Crosswind Component?***

30.5 Knots



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Overview

What is the Maximum Tailwind Component?

10 Knots



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Overview

***What Are the Maximum Load Limits –
Flaps Down?***

0.0G to +2.0G



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Overview

***What Are the Maximum Load Limits –
Flaps Up?***

-1.0G to +3.0G



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Overview

What is the Maximum Recommended Water/Slush for Takeoff and Landing?

0.75 Inch



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Speeds

What is the Turbulence Penetration Speed?

250 KIAS / 0.73M_i (Whichever is Less)



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Speeds

What is V_{MCA} – Minimum Control?

102 KIAS



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Speeds

What is V_{MCG} – Minimum Control?

100 KIAS



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Speeds

What is V_{MO} – Sea Level to 14,000 Feet?

306 KIAS



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Speeds

What is V_{MO} – Above 14,000 Feet?

359 KIAS



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Speeds

What is M_{Mo} ?

0.82 M_i



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Speeds

What is M_{Mo} With Any Missing BLEs?

0.78 M_i



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Speeds

What is M_{Mo} With Autopilot Inoperative?

0.78 M_i



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Speeds

What is M_{Mo} With Stick Puller Inoperative?

0.74 M_i



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Altitudes

***What is the Maximum Airport Pressure
Altitude for Takeoff and Landing?***

10,000 Feet



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Altitudes

What is the Maximum Enroute Pressure Altitude?

- **51,000 Feet: With AMK 81-12**
- **45,000 Feet: Without AMK 81-12**



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Weights

What is Maximum Ramp Weight?

15,500 Pounds



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Weights

What is Maximum Landing Weight?

13,300 Pounds



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Weights

What is Maximum Takeoff Weight?

15,000 Pounds



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Weights

What is Zero Wing/Tip Fuel Weight?

11,400 Pounds



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Avionics



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Avionics

What is the Minimum Altitude for Autopilot Use, in Approach Configuration, With the J.E.T. FC-110A AFC/SS?

11,400 Pounds



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Electrical



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Electrical

What is Maximum Generator Output Limit For All Flight and Ground Operations?

- **Temperatures >60°F: 300 Amps**
- **All Other Conditions: 400 Amps**



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Electrical

What is the Maximum Amperage Output Limit From a Ground Power Unit?

1,000 Amps



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Fire Protection



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Fire Protection

What Actions Occur When the Engine Fire Switchlight is Pushed?

- **Fuel and Hydraulic SOVs Close**
- **Bleed Air Valve Closes (510 Sys)**
- **Fire Bottles Arm**
- **Armed Lights Illuminate**
- **SOV Lights (Pinhead) Illuminate**



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Flight Controls



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Flight Controls

What is V_{FE} for 8° Flaps?

204 KIAS



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Flight Controls

What is V_{FE} for 20° Flaps?

204 KIAS



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Flight Controls

What is V_{FE} for 40° Flaps?

152 KIAS



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Fuel



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Fuel

What is the Power Source For the Left Standby Fuel Pump?

Left Essential Bus



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Fuel

What Are the Maximum Usable Fuel Quantities (With One Recognition Light)?

- **Wings: 2,320 lbs (1,160 lbs each)**
- **Fuselage: 1,305 lbs**
- **Tips: 2,430 lbs (Both)**
- **Full: 6,055 lbs**



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Hydraulics



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Hydraulics

What is the Duty Cycle of the Electric Hydraulic Pump?

3 Minutes ON – 20 Minutes OFF



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Ice & Rain



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Ice & Rain

What is the Maximum Recommended Water/Slush for Takeoff and Landing?

0.75 Inch



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Landing Gear



Lear 25

Landing Gear

What is V_{LO} (Landing Gear Operating)?

201 KIAS



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Landing Gear

What is V_{LE} (Landing Gear Extended)?

264 KIAS



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Oxygen



Lear 25

Oxygen

At What Altitude Will the Passenger Masks Automatically Deploy if Armed?

14,000 Feet



Lear 25

Pneumatic



Lear 25

Pneumatic

Which Systems Are Powered by 8th Stage Bleed Air?

- **Anti-Icing**
- **Air Conditioning**
- **Hydraulic Tank Pressurization**
- **Temperature and Pressurization**
- **Vacuum Pressure Regulation**



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Pressurization & Air Conditioning



Lear 25

Pressurization & Air Conditioning

What is the Maximum Pressure Differential?

10.0 PSI



Lear 25

Pressurization & Air Conditioning

What Altitude Should the Freon Cooling System Be Selected OFF?

FL180



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Powerplant & Thrust Reversers



Lear 25

Powerplant & Thrust Reversers

When Must the Engine Sync System Be Turned OFF?

- **Takeoff and Landing**
- **Below 70% RPM**



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Powerplant & Thrust Reversers

What Are the Operating Limitations of the Ignition System?

- **2 Minutes ON, 3 Minutes OFF /
2 Minutes ON, 23 Minutes OFF.....OR**
- **5 Minutes ON, 25 Minutes OFF**



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Powerplant & Thrust Reversers

*What Is Maximum Continuous EGT on the
-8A Engine?*

724°C



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Powerplant & Thrust Reversers

What Is Maximum Takeoff EGT (5 Minute Limit) on the -8A Engine?

735°C



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Powerplant & Thrust Reversers

What Is Maximum Takeoff EGT (10 Second Limit) on the -8A Engine?

782°C



Lear 25

Powerplant & Thrust Reversers

What Is Maximum RPM on the -8A Engine?

100% RPM (Observe EGT Limits)



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Memory Items



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Memory Items

**ENGINE FAILURE DURING TAKEOFF
BELOW V_1 SPEED – ABORT TAKEOFF**

- 1. Thrust Levers - IDLE**
- 2. Wheel Brakes - APPLY**
- 3. Spoilers - EXTEND**



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Memory Items

ENGINE FAILURE DURING TAKEOFF Above V_1 SPEED – Continue TAKEOFF

1. Rudder/Ailerons – AS REQUIRED FOR DIRECTIONAL CONTROL
2. Accelerate to V_R
Keep Nose Wheel on Runway to Improve Directional Control
3. Rotate at V_R & Climb at V_2
At Positive Rate of Climb:
4. Landing Gear - UP
When Clear of Obstacles:
5. Accelerate to $V_2 + 30$ & Retract Flaps



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Memory Items

ENGINE SHUTDOWN IN FLIGHT

1. Thrust Lever - CUTOFF



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Memory Items

ENGINE FAILURE DURING APPROACH

- 1. Control Wheel Master Switch - DEPRESS**
- 2. Thrust (Operating Engine) – INCREASE AS REQUIRED**
- 3. Flaps - 20° MAXIMUM**

If Configured With Landing Flaps (DN) - Increase Thrust and Retract Flaps Immediately

- 4. Airspeed – $V_{REF} + 10$ MINIMUM**



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Memory Items

ENGINE FIRE IN FLIGHT - SHUTDOWN

- 1. Affected Engine – IDENTIFY**
- 2. Thrust Lever – CUTOFF (Unless a Critical Thrust Situation Exists)**
- 3. FIRE Warning Light – LIFT GUARD / DEPRESS**

If Fire Continues:

- 4. Remaining ARMED Light - DEPRESS**

If Fire Continues:

- 5. LAND AS SOON AS POSSIBLE**



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Memory Items

T/R INADVERTENT DEPLOYMENT DURING TAKEOFF – BELOW V_1

- 1. Thrust Levers - IDLE**
- 2. Wheel Brakes - APPLY**
- 3. Spoilers - EXTEND**



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Memory Items

INDICATION OF T/R DEPLOYMENT DURING TAKEOFF – ABOVE V_1

- 1. Rudder / Ailerons – AS REQUIRED**
- 2. Affected Thrust Lever - IDLE**
- 3. Thrust Reverser Arming Switches - OFF**
- 4. NORMAL-EMER STOW Switch (Affected Engine) – EMER STOW**
If DEPLOY or UNSAFE Light Remains Illuminated – Stow Unsuccessful
- 5. ENGINE SHUTDOWN IN FLIGHT Checklist – PERFORM (Pg. e-2)**
- 6. Rotate at V_R & Climb at V_2 (Increased Rudder/Aileron Necessary Immediately After Liftoff to Maintain Controllability)**
- 7. Gear – UP**
- 8. Flaps - UP**



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Memory Items

**EMERGENCY DESCENT – CABIN ALTITUDE HORN ACTIVATES OR
CABIN ALTITUDE EXCEEDS 10,000 FEET**

- 1. Oxygen Masks – DONN / 100%**
- 2. Thrust Levers - IDLE**
- 3. Autopilot - DISENGAGE**
- 4. Spoiler Switch - EXTEND**
- 5. Gear – DOWN BELOW M_{MO} or V_{LE} (Keep Sideslip to Minimum When Extending Gear)**
- 6. Descend at M_{MO} or V_{LE} – Do Not Descend Below MSA**
- 7. Pass Oxy Valve – NORMAL**
- 8. Pass Mask Valve - MAN**



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Memory Items

CABIN/COCKPIT FIRE, SMOKE, OR FUMES

- 1. Oxygen Masks – DONN / 100%**
- 2. Smoke Goggles (If Available) - DONN**
- 3. PASS OXY / PASS MASK Valves – NORM / MAN**
- 4. OXY-MIC Switches - ON**

If Source Unknown or Fire Can't Be Extinguished:

- 5. LAND AS SOON AS POSSIBLE**

If Source Known:

- 5. Extinguish Fire / Eliminate Smoke or Fumes – LAND AS SOON AS PRACTICAL**



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Memory Items

PITCH AXIS MALFUNCTION

- 1. Control Wheel Master Switch – DEPRESS/HOLD**
- 2. Altitude Control – AS REQUIRED**
- 3. Thrust Levers – AS DESIRED**
- 4. STALL WARNING Switches - OFF**
- 5. Pitch Trim Selector Switch - OFF**



Lear 25

Annunciators

Lear 25

Annunciators



Flashes when sensing elements in nacelle indicate overheating.

Depressing FIRE warning light:

- **Closes Fuel & Hydraulic Firewall Shutoff Valves**
- **Shuts Off Bleed Air From Engine (510 Only)**
- **Arms Engine Fire Extinguisher System**



Lear 25

Annunciators



Illuminates to indicate fuel level in either wing below 400-500 pounds in level flight.



Lear 25

Annunciators

L FUEL PRES

OR

R FUEL PRES

- **Indicates Loss of Fuel Pressure to Designated Engine**
- **Probable Cause – Jet Pump Failure**



Lear 25

Annunciators



**Illuminates to indicate
either / both spoilers not
down and locked.**



Lear 25

Annunciators



- **Indicates One or More Cabin Door Locking Pins Not Fully Engaged.....*OR***
- **Lower Door Hooking Mechanism Has Not Been Released**



Lear 25

Annunciators



If STAB & WING HEAT Switch ON:

- **During Flight: Stabilizer Heat Failure**
- **On Ground: Normal – Stab Heat Disabled by the Squat Switch**



Lear 25

Annunciators

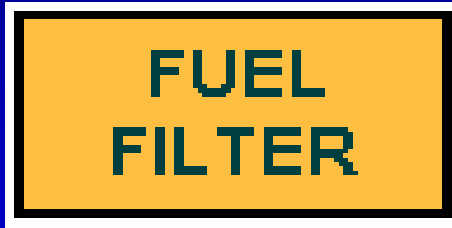


- **Indicates Malfunction in Either Pitot Heat System....*OR***
- **Either Pitot Heat Switch is Selected OFF**



Lear 25

Annunciators



- **Illumination Indicates Pressure Across Filter Dropped Below Design Value**
- **Fuel May Be Bypassing Filter**

Lack of Anti-Icing Additive May Cause Fuel Filter Icing and Subsequent Engine Flameout



Lear 25

Annunciators

**L ENG
ICE**

OR

**R ENG
ICE**

- **NAC HEAT Switch ON:**
Indicates Insufficient Bleed Air Pressure in Engine Anti-Ice System for Designated Engine
- **NAC HEAT Switch OFF:**
Indicates Malfunction of Corresponding Anti-Ice Valve



Lear 25

Annunciators



OR



- **Steady Illumination:** Indicates Malfunction or Loss of Power to Affected Stall Warning System or Pusher Actuation
- **Flashing Illumination:** Indicates Actuation of Affected System Shaker



Lear 25

Annunciators



OR



Illuminates to indicate one wheel of affected vertical gyro has failed.



Lear 25

Annunciators



OR

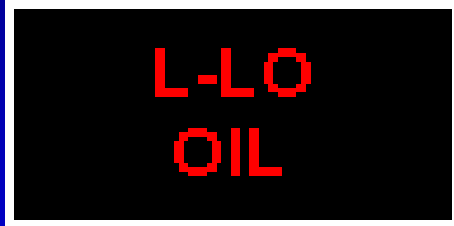


Indicates affected inverter is OFF or voltage and/or current flow below minimum.



Lear 25

Annunciators



illumination indicates oil pressure in one/both engines below 5 psi.

AND/OR





Lear 25

Annunciators



Indicates temperature of horizontal stabilizer structure has reached 215°F (102°C).



Lear 25

Annunciators



- **In Flight: Indicates Windshield Duct Temperature of 250°F**
- **On Ground: Indicates Windshield Duct Temperature of 215°F**

Green WSHLD HEAT Annunciator Should Be Extinguished



Lear 25

Annunciators



illuminates to indicate
nosewheel steering
engaged on ground.



Lear 25

Annunciators



OR

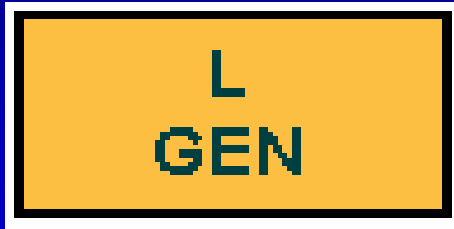


**Illumination indicates
overheat condition in the
associated bleed air ducting.**

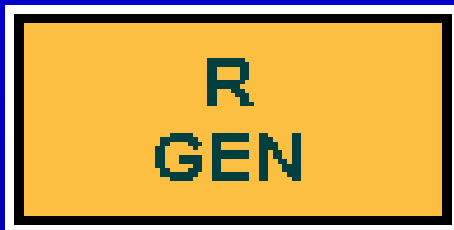


Lear 25

Annunciators



OR

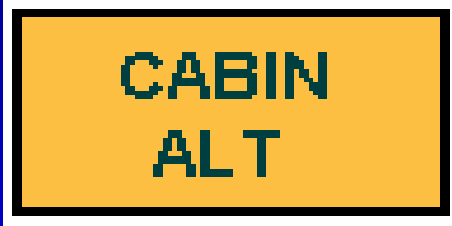


Illuminates to indicate affected generator failed... *OR* is not online due to incorrect voltage... *OR* generator switch in OFF or START position.



Lear 25

Annunciators



Indicates cabin altitude
above 8,750 \pm 250 feet.



Lear 25

Annunciators

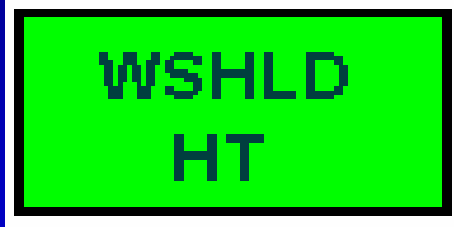


Illumination indicates temperature of wing leading edge has reached 215°F (102°C).



Lear 25

Annunciators

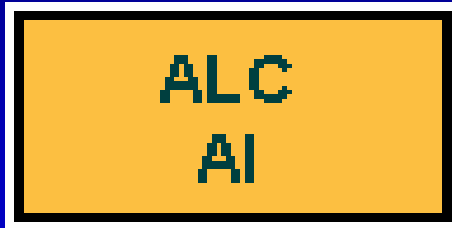


Normal indication when windshield anti-ice shutoff valves are open.



Lear 25

Annunciators



Indicates windshield alcohol is low / depleted.

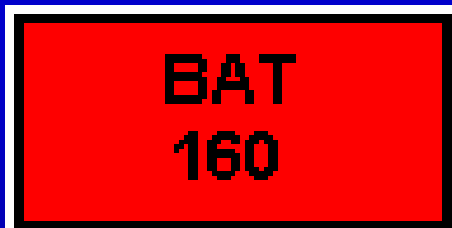


Lear 25

Annunciators



OR

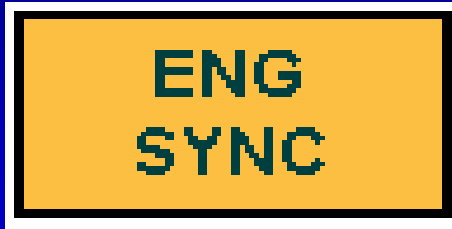


Illuminates to indicate temperature on one or both main electrical system batteries has reached either 140°F or 160°F.



Lear 25

Annunciators



Illumination indicates nose landing gear is down and locked with Engine Synchronization switch in SYNC.



Lear 25

Annunciators



Indicates horizontal stabilizer pitch trim setting more than $\frac{1}{2}^\circ$ outside takeoff segment on pitch trim indicator.

Annunciator does NOT illuminate in flight



Lear 25

Annunciators

A rectangular annunciator with a black background and a white border. The text "LOW" is on the top line and "HYD" is on the bottom line, both in yellow, bold, sans-serif capital letters.

**LOW
HYD**

- **Illuminates to Indicate Hydraulic System Pressure Below Approximately 1,125 to 1,000 PSI**
- **Extinguishes When Pressure Rises Above 1,250 PSI**



Lear 25

Annunciators

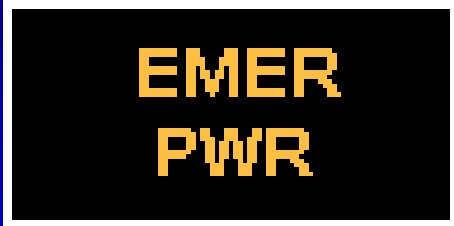
**FUEL
X-FLO**

**Indicates fuel crossflow
valve is open.**



Lear 25

Annunciators



Illumination indicates affected emergency battery supplying power with normal electrical power failed.



Lear 25

Annunciators

**PITCH
TRIM OVSP**

Illumination in flight indicates trim speed monitor detects trim speed fault which allows high trim speed with flaps up.



Lear 25

Part 135 Review



Lear 25

Part 131 Review - ATC

Where Does the DME Indicator Have the Greatest Error Between Ground and Displayed Distance?

At High Altitude – Close to the VORTAC



Lear 25

Part 131 Review - ATC

Which Checks/Inspections of Flight Instruments or Systems MUST Be Accomplished Before IFR Flight?

- **VOR Within Preceding 30 Days**
- **Altimeters/Transponders Within Preceding 24 Months**



Lear 25

Part 131 Review - ATC

What are the Required Items to be Recorded When Performing a VOR Check?

- **Date**
- **Place**
- **Bearing Error**
- **Signature in Aircraft Log or Other Record**



Lear 25

Part 131 Review - ATC

*What is the Maximum Speed to be Used
in a Procedure Turn?*

200 Knots



Lear 25

Part 131 Review - ATC

***If Straight-In Minimums Are NOT
Published, May a Pilot Land Straight-In?***

YES



Lear 25

Part 131 Review - ATC

When is a Procedure Turn Required?

When Necessary to Reverse Direction to Establish the Aircraft Inbound On an Intermediate or Final Approach Course



Lear 25

Part 131 Review - ATC

Does ATC Retain Wake Turbulence Separation When the PIC Has Accepted Visual Separation From Traffic?

NO – Acceptance Also Means the Pilot Accepts Responsibility for Wake Turbulence Separation



Lear 25

Part 131 Review - ATC

What is the Minimum Climb Gradient to be Maintained Whenever NO Climb Gradient is Specified on a DP (Departure Procedure)?

200 Feet per Nautical Mile



Lear 25

Part 131 Review - ATC

How Does the LDA Differ From a LOC Course?

LDA is Not Aligned Within 3° of Runway



Lear 25

Part 131 Review - Meteorology

Which Normally Changes When Crossing a Front – Pressure, Temperature, Dew Point, or Wind?

Wind



Lear 25

Part 131 Review - Meteorology

What Conditions Would Be Most Favorable For the Formation of Rime Ice?

- **Light Drizzle**
- **Strataform Clouds**
- **Temperatures At/Below Freezing**



Lear 25

Part 131 Review - Meteorology

What Conditions Would Be Most Favorable For the Formation of Fog?

- **Light Wind (3-5 Knots)**
- **Narrow Temperature/Dew Point Spread (2°C)**



Lear 25

Part 131 Review - Meteorology

***What Information Can be Obtained From
the 250 Milibar Chart?***

Winds Aloft at 39,000 Feet



Lear 25

Part 131 Review - Meteorology

Which Atmospheric Factor Causes Rapid Movement of Surface Fronts?

Upper Winds Blowing Across the Front



Lear 25

Part 131 Review - Meteorology

What Condition is Indicated Whenever Ice Pellets Are Encountered During Flight?

Freezing Rain at Higher Levels



Lear 25

Part 131 Review - Meteorology

***Which Type of Precipitation Indicates
the Presence of Supercooled Water?***

Freezing Rain



Lear 25

Part 131 Review – Severe Weather

Which Conditions Are Most Likely to Produce a Microburst?

Convective Activity in Very Dry Air



Lear 25

Part 131 Review – Severe Weather

What Are the Major Hazards of Flying Under the Anvil of a Thunderstorm?

- **Hail**
- **Severe Turbulence**
- **Lightning**



Lear 25

Part 131 Review – Severe Weather

What is an Indication That a Thunderstorm Has Reached the Mature Stage?

Precipitation



Lear 25

Part 131 Review – Severe Weather

What is a Squall Line and Where Does It Develop?

A Non-Frontal, Narrow Band of Active Thunderstorms Which Often Develops Ahead of a Cold Front in Moist, Unstable Air



Lear 25

Part 131 Review – Severe Weather

What kind of storms are most likely to generate tornadoes?

Steady state thunderstorms associated with cold fronts or squall lines



Lear 25

Part 131 Review – Severe Weather

Which Conditions are Necessary for a Low-Level, Temperature Inversion Windshear?

- **Calm/Light Wind Near Surface**
- **Relatively Strong Wind Just Above Inversion**



Lear 25

Part 131 Review – Severe Weather

What Conditions Are Necessary For a Squall to be Reported?

- **Sudden Increase of Wind Speed By At Least 15 Knots**
- **Winds Peaking to 20 Knots or More / Lasting a Minute or Longer**



Lear 25

Part 131 Review – Severe Weather

How Long is a Convective Outlook Valid?

24 Hours



Lear 25

Part 131 Review – Severe Weather

***What Tops Level of a Thunderstorm
Would Qualify It as Severe?***

35,000 Feet



Lear 25

Part 131 Review – Severe Weather

How Far Should You Avoid a Thunderstorm?

20 Nautical Miles



Lear 25

Part 131 Review – Severe Weather

How Far Away From Mountains Could You Expect to Find Clear Air Turbulence Associated With Mountain Wave?

- **5,000 Feet Above the Tropopause**
- **100 Miles or More Downwind From Mountains**