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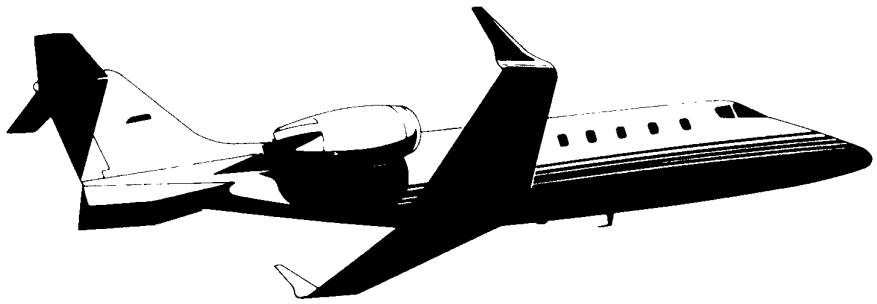
international

PROCEDURES SUPPLEMENT

FOR TRAINING ONLY

Learjet

Tucson, Arizona



the best safety device in any aircraft is a well trained pilot...

Revised 12/95

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INTRODUCTION

This supplement is for TRAINING ONLY and should be used in conjunction with the Learjet Flight Training Manual, Checklist, AFM and Pilot's Manual. The training program objective is to develop safe and efficient flight crews. Should information contained herein conflict with the FAA approved Airplane Flight Manual, the AFM shall take precedence.

GENERAL

1. BRIEFING: Initial 11.0 hours minimum
   Refresher - 2.0 hours minimum

2. EMERGENCIES: No multiple emergency training will be given unless requested by the trainee. When the objective is achieved, instructor will inform the trainee that the malfunction is corrected and to assume normal operation.

3. CHECKLIST: FSI and Learjet, Inc. (LJ) recommend the challenge and reply concept. Using the normal checklist, the First Officer will challenge the Captain and the Captain will respond. Using the abnormal or emergency checklist, the First Officer will give the challenge and, as a memory aid to the Captain, will give the checklist response. The Captain will then indicate the action desired.

4. SIMULATOR FREEZE: Use of the simulator flight freeze mode will be kept to a minimum. The instructor will advise the trainee anytime flight freeze is used. The trainee may request freeze, if desired. Do *not* trim while in the flight freeze mode.

5. COCKPIT PROCEDURE MOCKUP (CPM): The CPM's are the best aid in learning switch position, becoming familiar with the Learjet ground checks and checklist sequence.

6. AUDIO-VISUAL: Interactive video training programs for the 30 and 50 series Learjets are currently available for customer use. Trainees may review available programs at their convenience.

7. STANDARDIZATION: The methods and procedures are recommended by FSI and LJ. If desired, company methods, procedures and checklists may be used. Your instructor will indicate deviations from FSI/LJ recommendations for your information only.

8. DEBRIEFING: Each training session will be debriefed and the trainee advised of his/her progress.

9. PERFORMANCE GOALS:

	GENERAL	APPROACH (F.A.F. INBOUND)
Altitude	± 100 ft.	-0 + 50 ft.
Airspeed	± 10 KIAS	V_{REF} -0 + 5 KIAS
Heading	± 5°	± 5°
Bank	± 5°	± 5°
ILS (LCL and G/S)		1/4 scale deviation

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TRAINING SPEEDS AND POWER SETTINGS

	AIRSPEED	POWERSETTINGS		
MANEUVER TAKEOFF		LRJ 20	LRJ 30	LRJ 50
		RPM	N1	N1
Rotate (10°/GA mode initially)	V_R	T/O EPR	T/O N_1	T/O N_1
Gear up (positive rate)		T/O EPR	T/O N_1	T/O N_1
Flaps up	V_2 +30	T/O EPR	T/O N_1	T/O N_1
Climb to 3-5,000 AGL	200 (A.T.A.)	90%	800 ITT	865 ITT
3-5,000 AGL to 10,000 MSL	250	95%	800 ITT	865 ITT
10,000 MSL to Level Off	270/0.70 MI	98%		
10,000 MSL to Level Off	250/0.70 MI		800 ITT	865 ITT
CRUISE				
(lead TGT pwr setting by approx. 10 KIAS/0.02 MI)				
Below 10,000 MSL	200	78%	62%	62%
Below 10,000 MSL	250	83%	75%	75%
10,000 MSL to FL 250	250	84%	79%	80%
FL 410 (Normal Cruise)	0.77 MI	91%	795 ITT	865 ITT
STEEP TURNS (15,000 MSL)				
(increase pwr 2% before bank				
45° bank	250	86%	81%	81%
SLOW FLIGHT (15,000 MSL)				
(increase pwr 2% for 15° bank)				
Flaps up/Gear up	V_{REF} +20	78%	65%	65%
Flaps 20°/Gear up	V_{REF}	83%	70%	70%
Flaps 20°/Gear dn	V_{REF}	85%	75%	75%
Flaps dn/Gear dn	V_{REF} -10	88%	81%	80%
APPROACH TO STALLS				
(increase pwr to max., then back 1")				
Flaps up/Gear up	-1 Kt/Sec.	70%	IDLE	IDLE
Flaps 20°/Gear up/dn	-1 Kt/Sec.	75%	IDLE	IDLE
Flaps dn/Gear dn	-1 Kt/Sec	80%	65%	60%
HOLDING				
(slow to holding speed within 3 min.)				
14,000 MSL or below (1 min.)	V_{REF} +50	78%	63%	63%
Above 14,000 MSL (1-1/2 min.)	V_{REF} +50	78%	67%	67%
INSTRUMENT APPROACH				
(increase pwr 10% for SE)				
Flaps up/Gear up	V_{REF} +40	76%	62%	62%
Flaps 8°/Gear up	V_{REF} +30	78%	64%	64%
Flaps 20°/Gear dn	V_{REF} +20	82%	72%	72%
Flaps dn/ Gear dn (600 ft/min. det)	V_{REF} -0 +5	82%	70%	70%
Flaps dn/ Gear dn (Level FLT)	V_{REF} -0 +5	86%	85%	87%

NOTE:
(1) RPM/N_1 setting are approximate. Do not stare at RPM/N_1 indicators while adjusting power.
(2) Level flight pitch attitude will average about 3 degrees above horizon.
(3) Make small power adjustments (1% per 5 KIAS/1% per 100 ft/min descent).
(4) Do not trim below V_{REF} during APP stalls. Minimum loss of altitude desired.
(5) Add 1/2 gust factor to V_{REF} on final approach.
(6) Reducing power causes nose up; increasing power nose down.
(7) Set heading bug prior to banking.
(8) Reduce vertical speed to 1,000 ft/min, 1,000ft prior to level off.
(9) Lead level off altitude by 10% of vertical speed.
(10) Lead arc interception by 1% of ground speed; for descent, consider on course within 2nm.
(11) V_{REF} increases in proportion to weight at 1 knot per 200 pounds (20 & 30 only)
(12) Hold bank constant during steep turns. Use pitch for altitude corrections.
(13) Learjets are category "C" aircraft (speed greater than 121 kts but less than 141 kts).
(14) Reduce power to 85 - 90% on missed approach, vertical speed 1000 - 2000 FPM desired.
(15) Power as required on missed approach to maintain V_{REF} +40 KIAS at level off.
(16) Bank angle should equal heading change desired up to 30° bank maximum
(17) Balance fuel for approximately one minute per 100 lb. imbalance.
(18) Use one-third the angle of bank to lead roll out heading.
(19) Use 1,000 ft/min descent on a normal non-precision final approach or computed descent rate.
(20) Altitude correction should normally be twice the deviation up to 500 ft off altitude.
(21) Course correction should normally be twice the deviation up to 30°, max 45°
(22) Establish final approach configuration not later than FAF.

FOR TRAINING ONLY

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TRAINING SPEEDS AND POWER SETTINGS

		LRJ 60		LRJ 31
	AIRSPEED	N1	AIRSPEED	N1
MANEUVER TAKEOFF				
Rotate	V_R	T/O N_1		T/O N_1
Gear up (positive rate)		T/O N_1		T/O N_1
Flaps up	V_2 +20	MCT		MCT
Climb to 3-5,000 AGL	200 KIAS	AS REQ'D		AS REQ'D
3-5,000 AGL to 10,000 MSL	250	MCT		MCT
10,000 MSL to Level Off	250/0.70 MI	MCT		MCT
10,000 MSL to Level Off	275/0.73 MI	MCT		MCT
CRUISE				
(lead TGT pwr setting by approx. 10 KIAS/0.02 MI)				
Below 10,000 MSL	200 KIAS	59%		60%
Below 10,000 MSL	250 KIAS	66%		70%
10,000 MSL to FL 250	250 KIAS	75%		73%
FL 410 (Normal Cruise)	0.76 MI	91.5%		
STEEP TURNS (15,000 MSL)				
(increase pwr 2% before bank				
45° bank	250	75%		75%
SLOW FLIGHT (15,000 MSL)				
(increase pwr 2° for 15% bank)				
Flaps up/Gear up	V_{REF} +20	60%	V_{REF}+10	62%
Flaps 20°/Gear up	V_{REF}	65%		68%
Flaps 20°/Gear dn	V_{REF}	72%		70%
Flaps dn/Gear dn	V_{REF} -10	77%		78%
APPROACH TO STALLS				
(increase pwr to max., then back 1")				
Flaps up/Gear up	-1 Kt/Sec.	IDLE		IDLE
Flaps 20°/Gear up/dn	-1 Kt/Sec.	IDLE		IDLE
Flaps dn/Gear dn	-1 Kt/Sec	65%		65%
HOLDING				
(slow to holding speed within 3 min.)				
14,000 MSL or below (1 min.)	V_{REF} +50	59%		54%
Above 14,000 MSL (1-1/2 min.)	V_{REF} +50	62%		66%
INSTRUMENT APPROACH				
(increase pwr 10% for SE)				
Flaps up/Gear up	175	55%		55%
Flaps 8°/Gear up	165	57%		58%
Flaps 20°/Gear dn	155	67%		63%
Flaps dn/ Gear dn (600 ft/min.)	V_{REF}	60%		63%
Flaps dn/ Gear dn (Level MDA)	V_{REF}	70%		73%
Flaps dn/ Gear dn (Level Circle)	V_{Ref}+10	75%		76%

NOTE:
(1) RPM/N_1 setting are approximate. Do not stare at RPM/N_1 indicators while adjusting power.
(2) Level flight pitch attitude will average about 3 degrees above horizon.
(3) Make small power adjustments (1% per 5 KIAS/1% per 100 ft/min descent).
(4) Do not trim below V_{REF} during APP stalls. Minimum loss of altitude desired.
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(6) Reducing power causes nose up; increasing power nose down.
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(11) V_{REF} increases in proportion to weight at 1 knot per 200 pounds (20 & 30 only)
(12) Hold bank constant during steep turns. Use pitch for altitude corrections.
(13) Learjets are category "C" aircraft (speed greater than 121 kts but less than 141 kts).
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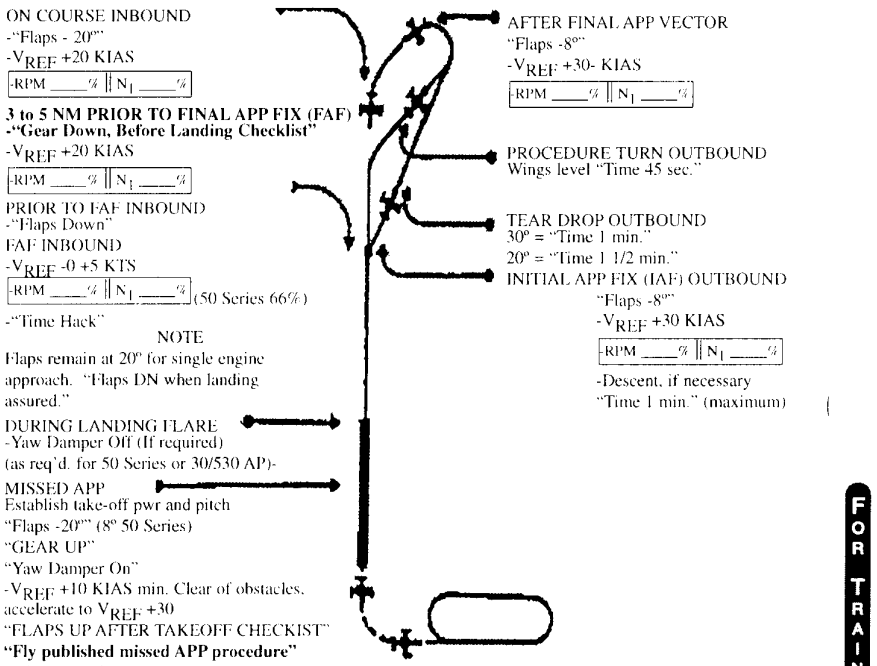
(15) Power as required on missed approach to maintain V_{REF} +40 KIAS at level off.
(16) Bank angle should equal heading change desired up to 30° bank maximum
(17) Balance fuel for approximately one minute per 100 lb. imbalance.
(18) Use one-third the angle of bank to lead roll out heading.
(19) Use 1,000 ft/min descent on a normal non-precision final approach or computed descent rate.
(20) Altitude correction should normally be twice the deviation up to 500 ft off altitude.
(21) Course correction should normally be twice the deviation up to 30°, max 45°
(22) Establish final approach configuration not later than FAF.

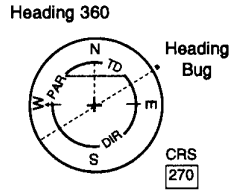
TYPICAL APPROACH AND HOLDING

NOTE: (1) Call for "Approach Checklist" passing 18,000 ft. or 50 NM from the terminal area.
(2) RPM/N_1 settings are approximate.
(3) Increase RPM/N_1 settings 10% for a single engine approach.
(4) A RPM/N_1 1% change will result in approximately 5 KIAS increase or decrease.
(5) A RPM/N_1 1 % decrease will result in approximately 100 ft/min descent.
(6) Recommended minimum maneuvering speeds based on flap settings:

-FLAPS	0° (Spoilers ext)	0°	8°	20°	40°
-V_{REF}	+50 KIAS	+40 KIAS	+30 KIAS	+20 KIAS	+10 KIAS



STANDARD
(RIGHT TURNS)



EXAMPLE: Hold East of the ABC VOR on the 090 degree radial, standard turns.
NOTE:
Holding with "Flaps-up"
V_{REF} +50 KIAS (RPM 78%/N_1 62%)

HOLDING ENTRY PROCEDURE

1) Aircraft heading towards holding fix.
2) Set the course arrow on the inbound holding course.
3) Set the heading bug 070° right or left of aircraft heading depending on the holding turn direction.
4) The "quadrant" containing the "tail end" of course arrow determines the method of entry.

CIVIL TURBOJET	MAXIMUM AIRSPEED
1. 6,000 feet or below	200K IAS
2. Above 6,000 feet thru 14,000 feet	210K IAS
3. Above 14,000 feet	265K IAS

TIMING

At or below 14,000 ft. MSL	Above 14,000 ft. MSL
1 min.	1 1/2 min.

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TAKEOFF PLANNING AND BRIEFING

NOTE: (1) The rolling takeoff may be accomplished when actual runway length is at least 10% longer than computed takeoff distance and obstacle clearance is not a factor. Takeoff power must be established before reaching the point where computed takeoff distance begins.

(2) Many items may be briefed well before engine start. Type of takeoff, specific procedures for current conditions, departure initial heading and altitude should be briefed prior to takeoff.

1. Type of Takeoff.
"We will make rolling takeoff."
(or)
"This will be a standing takeoff."

2. Use Stall Warning Switches.

(calm or light wind)

"Upon taking the runway turn both Stall Warning switches ON."

(or moderate or strong wind)

"As takeoff roll is started, turn Stall Warning switches ON."

3. Power Setting Procedure
"As I advance the thrust levers, crosscheck the engine instruments for normal operation. As I approach takeoff power setting, tap my hand and make final power setting adjustment."

4. Call outs
"As the airspeed begins to register, call AIRSPEED and cross-check the airspeed indicators. AT_____knots call V_1.
AT_____knots call ROTATE."

5. Departure Clearance Key Elements.
"our initial departure heading is _____degrees. At_____altitude we start a (RT/LT) climbing turn to_____ degrees. Our initial level off altitude is _____feet.

6. Special Items as Required.
"I will turn on anti-icing equipment after we are airborne."

"I will use noise abatement procedure to _____feet indicated altitude."

"I will leave flaps at 8 degrees and maintain _____knots until clearing_____feet indicated altitude for obstacle clearance.

7. Abort Procedure Prior to V_1.
"If you see a malifuntion prior to or at V_1, call it out. In the event of an abort, deploy the drag chute on my command."

(or)

"If you see a malfuntion prior to or at V_1, call it out. In the event of an abort with an engine failure or fire, I will not use thrust reversers. If we abort for other than an engine failure, or fire, I will use both thrust reversers."

8. Malfunction Procedure After V_1.
"If a malfunction occurs after V_1, I will continue the takeoff. After becoming airborne advise me of the malfunction. I will fly the airplane, you will handle the malfunction procedures on my command. If the malfunction is serious, we will dump fuel, fly a VFR traffic pattern and land, (or if IFR) request clearance for a_____ approach to runaway_____and advise we need fuel dump.

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TYPICAL ACTIONS

CAPTAIN	FIRST OFFICER
1. When cleared for takeoff calls, for "TAKEOFF CHECKLIST" and taxies onto the runway.	1. Completes "TAKEOFF CHECKLIST".
2. Advances and/or sets power as required by type of takeoff.	2. Monitors engine instruments and confirms/ sets final power setting.
3. Disengages steering at AIRSPEED call.	3. As airspeed registers calls "AIRSPEED" and crosschecks airspeed indicators.
4. Monitors outside references.	4. Monitors inside reference and calls malfunctions, if necessary.
5. Moves right hand from thrust lever to control wheel at V_1 call.	5. Calls "V_1"
6. Rotates to 10° /GA mode initially at ROTATE call.	6. Calls "ROTATE" and compares attitude indicators.
7. Positive rate calls "GEAR UP, YAW DAMPER ON".	7. Confirms positive rate, retracts gear and engages yaw damper.
8. At a minimum of V_2 +30 KIAS Calls "FLAPS UP, AFTER TAKEOFF CHECKLIST".	8. Confirms V_2 +30 and retracts flaps. Completes "AFTER TAKEOFF CHECKLIST".
9. Reduces power and adjusts pitch to remain below 200 KIAS in Airport Traffic Area.	9. Crosschecks flight instruments, maintains visual watch for other aircraft and notifies ATC, as required.
10. 3-5000 ft. AGL sets or calls for power setting and accelerates to 250 KIAS.	10. Sets or confirms power setting.
11. 10,000 ft. MSL sets or calls for power setting.	11. Sets or confirms power setting.
12. FL 180 calls "CLIMB CHECKLIST".	12. Completes "CLIMB CHECKLIST".
13. Level off calls for "CRUISE CHECKLIST".	13. Completes "CRUISE CHECKLIST".
14. Approximately 120 NM from destination request A.T.I.S., weather, approach expected, etc.	14. Prepares landing data and approach charts.
15. Calls for "DESCENT CHECKLIST".	15. Completes "DESCENT CHECKLIST".
16. FL 180 or 50 NM calls for "APPROACH CHECKLIST".	16. Completes "APPROACH CHECKLIST".

NOTE: (1) See Typical Approach for Remaining Actions

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APPROACH PLANNING AND BRIEFING

NOTE:
(1) Use three times altitude loss required divided by 1,000 to estimate descent distance (e.g.3 times 10,000 divided by 1,000 equals 30nm).
(2) Training descent schedule: Power/spoilers as required for adequate pressurization and/or anti-ice. Cruise mach/airspeed until intercepting 300/350 KIAS. 300/350 KIAS to 10,000 MSL. 250 KIAS below 10,000 MSL. Slow to maneuvering speed (V_{REF} +40 KIAS) prior to the feeder fix, IAF, or final radar vector for the approach.
(3) Final Approach decent rate equals altitude loss required divided by distance times ground speed in nm/min (e.g. 1,200 ft divided by 4nm times 2nm/min equals 600 ft/min minimum rate of descent to MDA/VDP).
(4) Time to see (no VDP published) equals the time from FAF to MAP minus the MDA divided by 10 (e.g.1:40 minus 400 ft divided by 10 equals 1:00 min).
(5) An arc lead radial may be calculated by dividing 60 by distance out times 1% of the ground speed (e.g. 60 divided by 10nm arc times 1% of 150 KGS equals a 9° lead).
(6) The general items should be briefed well before engine start. Specific procedures applicable to the actual approach to be accomplished should be briefed during the "APPROACH CHECKLIST"

1. General

"Study the Approach Procedure chart."

"Tune and identify all navigation stations required."

"Confirm and set in approach courses in my HSI at my request."

"Compute the time for final fix to M.A.P."

"Accomplish and call out all timing."

"Call out 1,000 FEET PRIOR and 100 FEET PRIOR to each level off altitude."

"Crosscheck all instruments including radio altimeter over the final approach fix. Call out INSTRUMENTS CROSS-CHECKED, NO FLAGS."

"Watch for outside hazards throughout the approach."

"Call out 1,000 FEET PRIOR to airport elevation."

"Call out 500 and 100 FEET PRIOR TO MINIMUMS and MINIMUMS."

"Call out STROBE or APPROACH LIGHTS or RUNWAY IN SIGHT(as applicable) and relative position, or RUNWAY NOT IN SIGHT."

Revert to instrument scan when I acknowledge "RUNAWAY IN SIGHT".

2. Specific Items as Required.

"This will be the VOR approach to runaway XX at XXX airport. We will fly the xx mile arc in lieu of the procedure turn."

"A circling approach will be required." (Discuss type of circling approach pattern, aircraft configuration for the circle, altitude timing and airspeed(s) to be used.)

"Anti-icing will be required throughout the approach." (Discuss speeds, power setting and configurations necessary to accomplish proper anti-icing for the approach.)

"The arc approach and turn to final will be accomplished as follows." (Discuss entire arc approach, including procedure to anticipate the turn to final approach.)

"We will delay full flaps until" (Discuss any procedure to be accomplished which will be different from normal procedures.)

Missed Approach Procedure.
"If there is a missed approach, retract FLAPS TO 20 DEGREES (8° 50 Series) and GEAR Up on my command. Then call out the missed approach heading and altitude and retune radios as required.

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ENGINE FAILURE EXAMPLES

Engine failure above V_1 (left engine)

(1) Maintain Directional Control
- Right rudder as required
- Ailerons as required

(2) Accelerate to V_R
- Rudder as required
- Keep nose wheel on runway

(3) Rotate at V_R
- 10° - 15° pitch (GA initially)
- Do not exceed 15° pitch

(4) Positive Rate of Climb
- Gear up
- Full right rudder trim (2-3 Units 50 Series)

(5) Maintain V_2 to 1500 AGL
- 1500 AGL for practice obstacle clearance
- Follow SID or ATC departure clearance
- Maximum 15° bank @ V_2

(6) Shutdown failed engine(400' AGL min)
- Identify failed engine (co-pilot confirms dead engine)
- Verify failed engine (captain retards thrust lever to idle)
- Rectify condition (captain shuts off dead thrust lever)
- Checklist - accomplish engine failure/shutdown inflight

(7) Notify ATC
- Declare emergency
- Request approach
- Consider fuel jettison

(8) Accelerate (1500AGL)
- 15° max bank until V_2 +30

(9) V_2 +30
- Flaps up
- After take off checklist
- Reduce rudder trim

(10) Pattern Speeds
- Flaps UP V_{REF} +40
- Flaps 8° V_{REF} +30
- SE climb 200 (220 20 Series)

(11) Descent Checklist

(12) Approach Checklist

(13) Cockpit Set-Up for Approach

(14) Airstart, if applicable
- Starter assist
- Windmilling

(A) In-Flight Engine Failure (Left engine)
- Power - 10% increase
- Yaw damper - off
- Configuration
  - Flaps (Retract to 20° max)
  - Trim (Y/D off, trim, Y/D on)

(B) Verification
- Verify left engine failed
- Left throttle to idle
- Left throttle to cutoff
- Engine failure/shutdown inflight checklist

(C) Single Engine Approach
- Same as normal approach except flaps 20° and V_{REF} +20 until landing assured (V_{REF} +10 mini-

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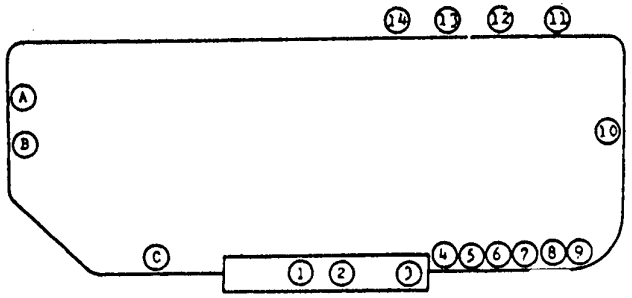

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MISCELLANEOUS

1. Control and Performamce Concept: Mach and TAS (expresses in nm/min) have a direct relationship to pitch chage and resultant vertical velocity. A one degree pitch change would result in the following:

MI	KTAS (NM/MIN)	APPROXIMATE VERTICAL VELOCITY
0.80	480 (8nm/min)	800 ft/min
0.70	420 (7nm/min)	700 ft/min
0.60	360 (6nm/min)	600 ft/min
0.50	300 (5nm/min)	500 ft/min
0.40	240 (4nm/min)	400 ft/min
0.30	180 (3nm/min)	300 ft/min
0.20	120 (2nm/min)	200 ft/min

Using the pitch/vertical velocity relationship, a typical pitch change at the ILS FAF would be 3° or initially place the airplane symbol apex on the 0° pitch line. This would result in a 600 ft/min descent. The typical non-precision approach would require an initial 5° pitch change which would result in a 1,000 ft/min descent. This relationship shows that SMALL changes in pitch may result in LARGE altitude deviation. Also, that MI approximates nm/min and vertical velocity for each 1° pitch change. Control instruments are altitude and RPM/N_1 indicators. Performance instruments are Vertical Velocity, Altimeter, Airspeed/Mach, Heading, Turn and Slip indicators.

Procedural steps.

(1) Set altitude and/or RPM/N_1 for performance desired.

(2) Trim off control pressure using small, quick clicks of trim.

(3) Crosscheck performance indicators.

(4) Adjust altitude/RPM/N_1 and retrim as necessary.

Remember, small, smooth changes in pitch combined with trim and power will result in excellent altitude and speed control.

2. Air Traffic Control Cautions:

a. When cleared for approach, maintain the last assigned altitude until established on a segment of the published routing or instrument approach procedure. Do not descend to the MSA. The MSA is for emergency purposes only and may not provide adequate radio signal coverage.

b. If you lose visual reference while circling, follow the missed approach specified for the approach procedure just flown, unless directed otherwise. An initial climbing turn toward the landing runway will assure that the aircraft remains within the circling obstruction clearance area.

c. Descent below the MDA or continuing the approach below DH is not authorized unless the aircraft is in a normal position to land and the runway environment is in sight.

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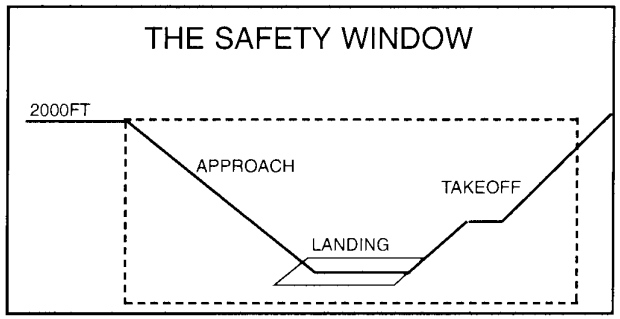
THE SAFETY WINDOW

Statistical profiles of aircraft accidents reveal that the majority of accidents occur in a rather compressed period of time, relating to takeoff and landing. We call this the "Safety Window." The Safety Window is defined as a block of airspace, centered around a runway, that entend from the ground to 2,000 feet AGL. It begins at, or about, a final approach fix and continues through conclusion of the final segment of takeoff climb.



Consider these four significant observations about the Safety Window:

- The window is six to eight minutes long when flown in a conventional turboprop or turbojet aircraft - about 8% of flight time (U.S. domestic).
- Roughly 80% of the accidents involving professional pilots occur within this window.
- Most of these can be termed as generic; their cause is not specific to a particular type aircraft. For example, failure to extend the landing gear will result in a gear-up landing regardless of the aircraft flown.
- Workload intensity peaks during flight within the Safety Window.

The Safety Window is important because it draws attention to the concentration of accidents that occur within a very short period of time.

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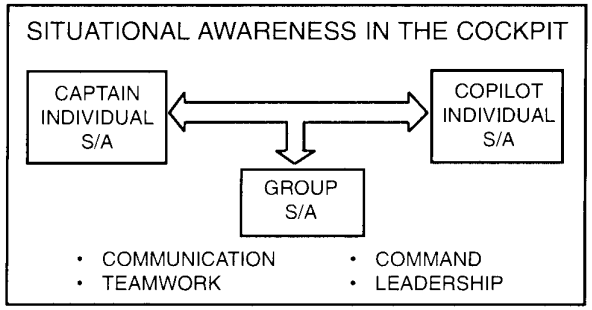
THE DYNAMICS OF SITUATIONAL AWARENESS

A cockpit crew is a well-defined group made up of a number of individuals. They combine to create a unique blend of personalities, attitudes, and shared responsibilities that results from the people that constitute the group and the operational structure in which they function.

The perceptions of each member of the group are also unique. They will vary-sometimes only slightly, at other times quite a bit. Each crewmember can be said, therefore, to have a unique individual level of Situational Awareness.

A safe and successful flight results when the individuals in the group work in concert with each other, rather than separately. Therefore, the Situational Awareness level that the group is able to attain together an important influence on the safety of the flight.

Consider a cockpit crew of two. As the diagram below illustrates, each individual crewmember has a level of Situational Awareness. However, of paramount importance is how the individual perceptions can be joined to form a group level of Situational Awareness.



The level of Situational Awareness that a group is able to attain is not, as one might expect, the sum total of those in the group. Instead it is limited by that of the pilot-in-command. Therefore, it is essential that:

- Crewmembers do everything feasible to support the captain and maximize his level of Situational Awareness.
- The captain recognizes the contribution that other crewmembers can make to the group and defers to the crewmember(s) with the highest level of Situational Awareness at the time.
- The captain encourages a climate where all crewmembers can comfortably offer their inputs and know that they will be considered.

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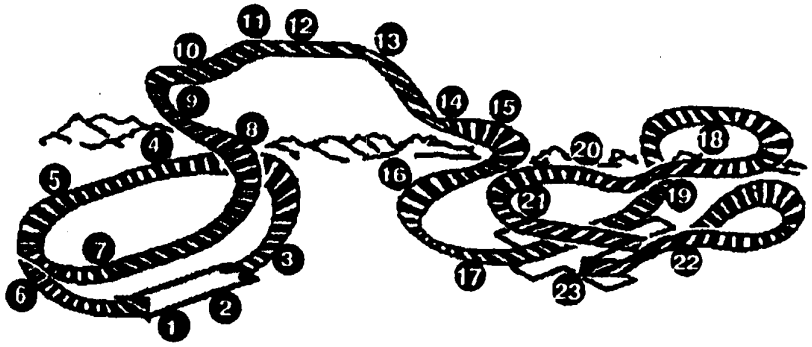
TYPICAL SIMULATOR PROFILE

1. Takeoff
   a. Rolling
   b. Standing
   c. Rejected
2. Engine failure at/above V_1
3. Departure/Instrument takeoff
4. Airstart
   a. Starter assist
   b. Windmilling
5. Engine failure/Fire in-flight
6. Single engine approach
7. Single engine missed approach
8. Area departure
9. Airstart
   a. Starter assist
   b. Windmilling
10. Climb
    a. S.E.
    b. Normal
11. Level off
    a. Intermediate
    b. High altitude
12. Cruise
    a. Normal (0.77 MI)
    b. High Speed
    c. Long Range
13. Emergency descent
14. Airwork
    a. Slow flight
    b. Approach to stalls
    c. Steep turns
    d. Unusual attitude recoveries
15. Area arrival
    a. Transition fix
    b. Arc
    c. Straight in
16. No flaps ILS approach
17. Rejected landing
18. Holding
19. VOR approach
20. Circling approach
21. Missed approach
22. NDB approach
23. Landing

NOTE: (1) Ground checks will normally be done in the CPM.
(2) System reviews will normally be accomplished during cruise.
(3) System malfunctions may occur during any phase of flight.



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