Factual Report – Attachment 16

Trans-Pacific Lear 35A SOPs (Excerpts)

OPERATIONAL FACTORS

CEN17MA183

4. Planned routing for each flight leg, including pertinent navigation aids, en route weather, winds aloft, altitudes, turbulence, SIGMETS, etc.

5. Departure and arrival airport information including NOTAMS, runway lengths, instrument approach procedures, terrain, special considerations and taxi route from the runway of expected landing to the FBO.

6. Passenger information, including special passenger considerations and requests.

7. Crew layover accommodations including hotel, rental cars, surrounding area to the hotel, security concerns and other information pertinent to the layover period.

All crewmembers should be given the opportunity to participate in the information distributed during the briefing. All crew concerns should be addressed by the PIC prior to concluding the briefing, any discrepancy or concern that cannot be addressed during the meeting should be brought to the attention of the company.

1.1.4 – Aircraft Airworthiness Check

Determination of aircraft airworthiness is the responsibility of the PIC. The PIC may delegate the aircraft airworthiness check to the SIC but will retain full responsibility. The standard airworthiness check shall consist of at least the following items:

1. An external preflight inspection of aircraft condition and servicing.

2. A review of the Aircraft Status Sheet to ensure that during the flight or series of flights the aircraft will:
   - Not exceed the total flight hours until the next inspection based on airframe total time is due.
   - Not exceed the total landings until the next inspection based on aircraft landings/cycles is due.
   - Not exceed the date until the next inspection based on calendar time is due.

3. A review of the Aircraft Flight Log to ensure that aircraft times and cycles were correctly forwarded from the previous flight. Also verify that the aircraft will not overfly the 30-day VOR check, complete a VOR check if necessary.

4. A review of the Deferred Maintenance Log to ensure that no deferred item shall overfly its allowable time limit.

5. Check the previous ten (10) entries into the Aircraft Discrepancy Sheet to determine that no open maintenance items exist and make note of repeat discrepancies.

6. Inventory and check all emergency equipment required to be on the aircraft, including (but not limited to) life vests, fire extinguishers and first aid kits.

Once all these items have been completed, the PIC shall sign acceptance of the aircraft in the appropriate field of the Aircraft Flight Log, accepting the aircraft as airworthy and the trip as legal.

1.1.5 – Weather Information and NOTAMs

It is the responsibility of the PIC to obtain all weather information, including terminal and en route weather, as well as all NOTAMs as they apply to the flight routing and operations. Weather and NOTAMs shall be obtained through one of the approved sources defined by Section 12.4.2 of the General Operations Manual and may only be obtained within three (3) hours of scheduled departure.

The PIC shall review at least the following items:

- METAR for the airport of departure.
- TAF for the airport of departure, the destination and any applicable alternate. In the event that the destination or alternate does not generate a TAF, the flight crew may assess applicable area forecasts in order to determine weather conditions at the estimated time of arrival.
- Notices to Airmen for the departure, destination and any applicable alternate airports – noting any closures or outages that will affect instrument approach procedures, aircraft landing, or aircraft surface operations. It is highly recommended that any applicable NOTAMs that affect the flight should be noted or highlighted. All flight crewmembers shall be made aware of any NOTAMs that affect the flight.
- Winds aloft, either graphical or text, from which the Pilot-in-Command shall determine the most favorable routing and altitudes – accounting primarily for fuel consumption.
- Graphical turbulence plots, selecting altitude based on the most favorable flight conditions.
- SIGMETs and AIRMETs shall be reviewed for significant and convective weather along the route of flight.

All weather information and NOTAMs shall be printed and retained for the duration of the flight or series of flights, replaced as needed when new reports are issued. The weather information and NOTAMs will be kept on the clipboard to which the flight plan and accessible to both flight crewmembers during flight.

1.1.6 – Flight Planning

Flight planning is the responsibility of the PIC, though these duties may be delegated to the SIC – however the PIC remains responsible for all flight planning and fuel planning. All flight planning shall be completed within three (3) hours of scheduled departure in order to obtain the most current information pertinent for the planning of fuel uplift and consumption.

The route of flight shall be planned based on the following considerations:

- En route winds at the proposed cruise altitude. It is the policy of the company that the PIC shall plan the route of flight in such a manner as to take the greatest advantage of favorable en route winds while minimizing exposure to unfavorable winds. This may not necessarily predicate direct routing, and at times a shorter ETE can be accomplished through indirect routing around or into the Jetstream.

- Temperatures aloft. In determining both flight routing and planned cruise altitudes, the flight crew shall assess temperatures aloft and compare these against aircraft performance information for the weight of the aircraft. Avoiding areas of higher temperatures may permit an aircraft to climb more efficiently and reduce fuel consumption significantly.
- High altitude turbulence. Areas of severe and extreme turbulence shall be avoided when planning flight routing. Moderate and light turbulence may only be avoided for the sake of passenger comfort when doing so does not compromise the ability of the aircraft to complete its assigned segment length without an additional stop.
- En route weather. Areas of severe weather shall be avoided and significant frontal movement that may produce a squall line or other weather conditions detrimental to the safety of flight will be considered when planning the route of flight. It is important for the upper limit of significant weather be referenced and a reasonable attempt be made to climb above that weather such that the flight can avoid the weather by no less than 3000 feet vertically. When planning the route of flight around significant weather, if it is the opinion of the PIC that "gaps" in the weather will permit an aircraft to maneuver safely around storms while maintaining the minimum thunderstorm clearances defined by GOM Section 12.4.24, then avoidance of an area of convective activity is not required.
- Ground-based navigation aids. All flight planning shall ensure that the aircraft is operated in compliance with Operations Specifications B034 and B035. As such, the route of flight will be planned along airways as often as practical while maintaining a route most efficient for the other factors defined by this section. Planning for direct routing or off-airway routing, with a flight leg between ground-based navigation aids, greater than one hour of flying time is prohibited.
- Anticipated routing. Planning the route of flight shall be in such a manner so that common routing, including charted arrivals and departures to a terminal area, are planned. Attempting abnormal routing is counter-intuitive to the planning process and filing an arrival or departure not normally seen into an airport should be avoided.
- Authorized route structures. The route of flight shall not be planned through prohibited areas of operation, such as Class G Airspace or restricted airspace. Additionally, use of prohibited route structures, such as Domestic Q-Routes, shall not be planned when determining route of flight. Routing through areas of operation not permitted by Operations Specifications B050 is strictly prohibited.

Alternate airports shall be filed in accordance with the requirements of the GOM Section 6.3.3. If, in the opinion of the PIC, an alternate is not required by GOM Section 6.3.3 but other considerations would make a filed alternate prudent, then the PIC may assign an appropriate alternate in accordance with Operations Specifications C055. If a takeoff alternate is required in accordance with 14 CFR §135.217, then this alternate shall be listed in the remarks section of a flight plan.

The flight plan, or Master Flight Document, shall be printed and remain on the flight deck during all surface and flight operations. The flight plan shall be attached to the clipboard and made accessible to all flight crewmembers. At the conclusion of the flight leg, the flight plan shall be submitted to the company operations office.

2.1.1 – Aircraft Surface Operations

All aircraft surface movement shall be executed by the Pilot-in-Command. During aircraft surface operations, both flight crewmembers shall remain vigilant and aware of the movement of the aircraft in their vicinity. At all times during aircraft surface movement, at least one flight crewmember will have the Airport Diagram chart in plain view and all taxi movement of the aircraft shall be in reference to that Airport Diagram chart.

All checklists conducted during aircraft surface movement shall be completed as a Challenge and Self Response in accordance with Section 12.4.3 of the General Operations Manual. In the event that a control, switch, or indicator cannot be accessed by the Second-in-Command, the Pilot-in-Command may access that item as appropriate for the checklist. All flight control movement (such as flaps, trim, or spoilers) must be verified by both flight crewmembers.

EVENT	PIC	SIC
Aircraft has departed the ramp area and the brake check has been completed by both the PIC and the SIC.	Check the left side of the aircraft as it enters the active taxiway, ensuring no vehicles or aircraft are in a position as to pose a hazard to the flight. "Clear left".	Check the right side of the aircraft as it enters the active taxiway, ensuring no vehicles or aircraft are in a position as to pose a hazard to the flight. "Clear right".
	"Clear of the ramp, brake check complete. Taxi Checklist".	Select the taxi lights to the ON position, unless otherwise instructed by the PIC.
	Taxi the aircraft, maintaining awareness of its position on the airport surface, surrounding traffic, and the planned or cleared taxi route. Taxi speed should not exceed that of a brisk walk.	Run Taxi Checklist as a challenge and self-response, with each item read and acknowledged by the SIC. If some items require the PIC to reach, the PIC will acknowledge those items. "Taxi Checklist complete, Before Takeoff Checklist next".
Aircraft is approaching a taxiway intersection.	Check the left side of the aircraft as it crosses a taxiway, ensuring no vehicles or aircraft are in a position as to pose a hazard to the flight. "Clear left".	Check the right side of the aircraft as it crosses a taxiway, ensuring no vehicles or aircraft are in a position as to pose a hazard to the flight. "Clear right".

2.1.1 – Aircraft Surface Operations (Continued)

EVENT	PIC	SIC
	Check the left side of the aircraft to ensure no aircraft are on the runway or a short final approach. "Runway clear left".	Check the right side of the aircraft to ensure no aircraft are on the runway or a short final approach. "Runway clear right".
Aircraft crosses an active runway at a controlled airport, or any runway at an uncontrolled airport.		Select strobe lights to the ON position. "Lights on". Upon clearing the runway, select strobe lights to the OFF position. "Lights off".

2.1.2 – Before Takeoff

The aircraft is considered to be in the "Before Takeoff" phase when it is cleared to take the active runway with the intention of flight.

EVENT	PIC	SIC
	Check the left side of the aircraft to ensure no aircraft are on the runway or a short final approach. "Runway clear left."	Check the right side of the aircraft to ensure no aircraft are on the runway or a short final approach. "Runway clear right".
ATC clears the aircraft to line-up and wait	Taxi aircraft onto active runway and line up for takeoff. "Before Takeoff Checklist."	Select strobe lights to the ON position as the aircraft enters the active runway. Run Before Takeoff Checklist as a challenge and self-response, with each item read and acknowledged by the SIC. Stop the checklist at the line. If some items require the PIC to reach, the PIC will acknowledge those items. "Before takeoff Checklist complete to the line".

2.1.2 – Before Takeoff (Continued)

EVENT	PIC	SIC
ATC clears aircraft for takeoff.	"Final items".	Completes the Before Takeoff Checklist below the line. "Before Takeoff Checklist complete, After Takeoff Checklist next".

If the aircraft is cleared for takeoff within an intermediary instruction to line-up and wait, then the flight crew may complete the entire Before Takeoff Checklist without a pause at the line.

2.1.3 – Takeoff Briefing

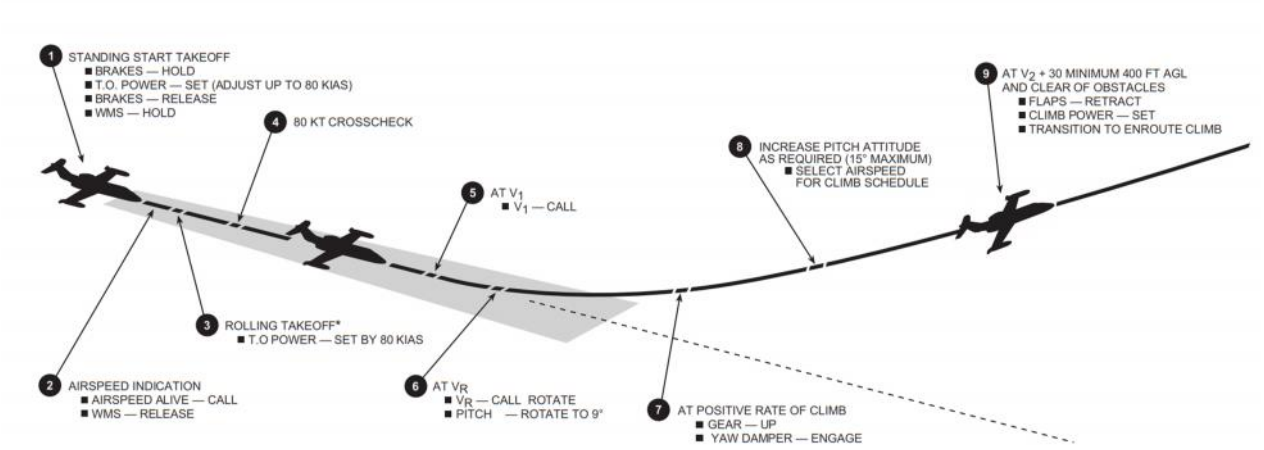
A takeoff briefing must be conducted for every takeoff and may be completed during the Before Start, After Start, or Taxi phases of flight. Dictating "Standard Briefing" is not considered a proper briefing by Trans-Pacific Jets and shall not be used.

Takeoff Briefing
The following items should be addressed in a standard Sunquest Executive Air Charter takeoff briefing: • Type of takeoff (left seat/right seat). • Impaired runway conditions. • The use of anti-ice for takeoff. • Initial heading or course. • Initial altitude. • Subsequent course or altitude assignments. • Airspeed restrictions, if applicable. • Clearance restrictions, if applicable. • The DP or obstacle departure procedure assigned. • Takeoff abort contingencies. • Emergency contingencies. • Any deviations from the SOP. • Comments or input.

2.1.5 – Takeoff

The takeoff shall be executed in accordance with the standard Trans-Pacific Air Charter takeoff profile. Unless restricted by runway performance, the flight crew shall always initiate a takeoff as a rolling takeoff – increasing their required takeoff distance by 10%. Please note that while previous sections indicated position by PIC and SIC, all positions during flight shall be defined by Pilot Flying (PF) and Pilot Not Flying (PNF).

Normal Takeoff



*The more comfortable rolling takeoff is accomplished when actual runway length is at least 10% longer than computed takeoff distance and obstacle clearance is not a factor. On a rolling takeoff if power is set beyond the computed takeoff distance then **the takeoff data is no longer valid**.

2.1.5 – Takeoff (Continued)

EVENT	PF	PNF
Aircraft cleared for takeoff and Before Takeoff Checklist complete.	Advances power levers smoothly to takeoff power setting. Holds WMS.	Places hand behind the power levers to fine tune takeoff power. "Power set".
	Notes that proper takeoff power is set and indicating. "Power set". Scans all applicable engine instruments to ensure proper aircraft condition. Looks outside to maintain aircraft directional control.	Verifies proper power setting is indicating. "Power set". Monitors engine instruments and annunciator panel during the takeoff roll.
Airspeed indicator begins to show movement on the airspeed scale.		"Airspeed alive".
	"Airspeed alive". Release WMS. Maintain directional control with the aircraft rudder.	
80 knots airspeed is indicated.		"80 knots".
	Quickly verifies all engine parameters are acceptable for takeoff and no abnormal indications exist. "80 knots, continuing".	
Five knots prior to V1 indicated.		"V1".
	Moves hand from power levers and holds yoke with both hands. "V1".	
Rotate speed indicated.		"Rotate".
	"Rotate". Gradually pitches the aircraft to 9° nose up attitude. This pitch should not exceed 2° per second.	

2.1.5 – Takeoff (Continued)

Positive rate of climb indicated by both the Vertical Speed Indicator and primary Altimeter.		"Positive rate".
	"Gear up, Yaw Damper on".	Retract landing gear, engages yaw damper. "Gear up, yaw damper on".
	Gradually increases the aircraft nose-up pitch to no greater than 15° nose up.	
Aircraft reaches 1500 feet AGL.		"400 feet".
	Reduces aircraft pitch to approximately 9° nose up and accelerates the aircraft to V2+30. Reduces power to Climb Power setting. "Speed checks, flaps up".	Retract flaps and completes the After Takeoff flow as defined by the aircraft checklist. "Flaps up set". Observe that flaps have moved to the up position. "Flaps up indicating".
Desired climb speed is attained.*	"Select speed".	Selects speed mode for climb schedule. "Speed selected".
Aircraft reaches 3000 feet AGL.	"After Takeoff Checklist".	Run After Takeoff as a challenge and self-response, with each item read and acknowledged by the SIC. "After Takeoff Checklist complete, Climb Checklist next".
	Transitions to en route climb.	

*In the event of a low level off or short climb, vertical speed mode may be selected.

3.1.1 – Aircraft Climb

The climb phase of an aircraft is, in general, considered any point after the start of the Final Climb Segment as defined by 14 CFR §25.111. As a general rule of thumb, the climb segment of a flight is considered at Trans-Pacific Jets to be any climb initiated at the higher of 1500 feet AGL or when clear of hazardous obstacles.

During climb the PF shall monitor aircraft performance and the surrounding airspace, while all radio communication and interior tasks shall be accomplished by the PNF.

EVENT	PF	PNF
Aircraft reaches 1500 feet AGL or clear of applicable obstacles. After Takeoff Checklist is completed.	Transitions to en route climb in accordance with the climb profile defined in Section 3.1.2 of this manual.	
Aircraft reaches 10,000 feet AGL.	"Climb checklist."	Completes the Climb Checklist as a challenge and self-response checklist, holding at the Transition Altitude items. "Climb checklist complete, holding for transition items".
Aircraft reaches transition altitude.	"Transition Altitude items".	Completes the Climb Checklist items listed below the Transition Altitude line. "Climb Checklist complete, Cruise Checklist next".
Aircraft within 1000 feet of assigned/armed altitude.	Slows rate of climb to 1500 FPM or less. "One to go".	Verifies correct assigned altitude is armed in the Altitude Alerter window. Reads the altitude set in the Altitude Alerter during the following call-out. In the Lear 31A, verify that the altitude is armed as well LEAR 35A ONLY: "One to go, XXXX* set". LEAR 31A ONLY: "One to go, XXXX* set and armed".
Aircraft within 300 feet of assigned/armed altitude.	Slow rate of climb to 500 FPM or less.	LEAR 35A ONLY: Prepares to select ALT HOLD on the altitude selector.

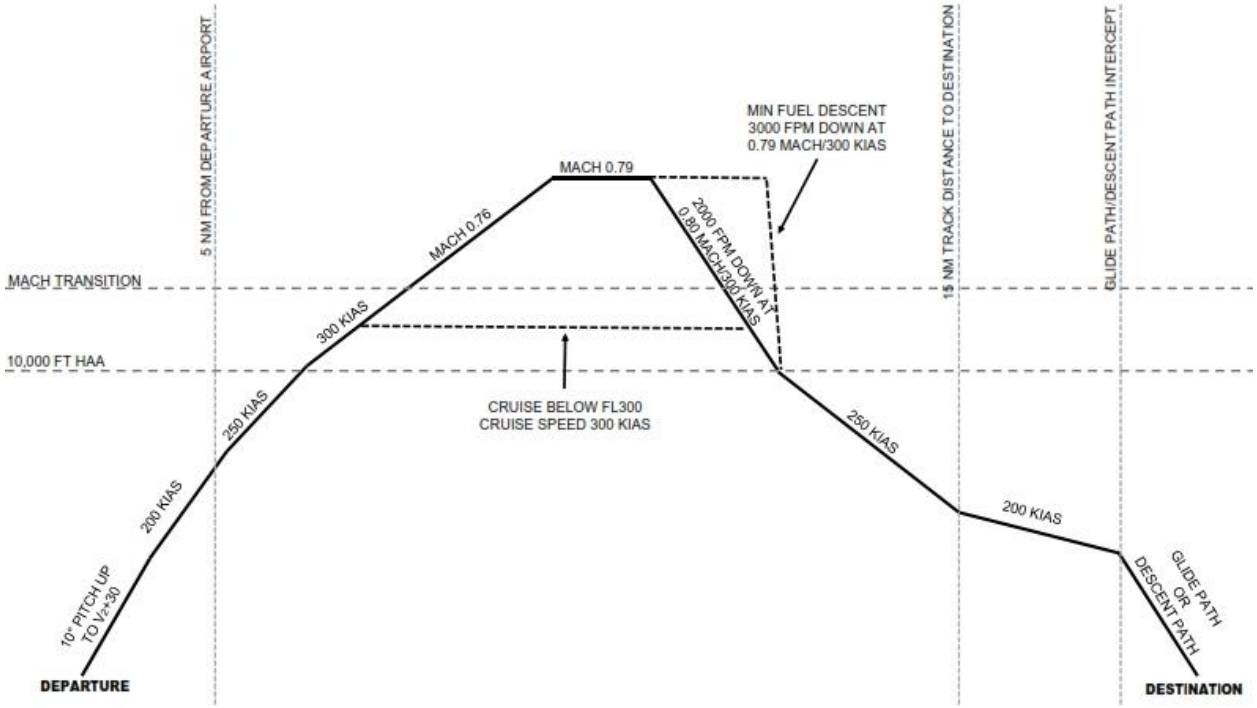
*Altitude, in thousands of feet, as it is assigned or set in the Altitude Alerter window.

3.1.1 – Aircraft Climb (Continued)

EVENT	PF	PNF
		LEAR 35A ONLY: Selects ALT HOLD. ALL AIRCRAFT: "Altitude captured".
Aircraft at assigned/armed altitude.	Verifies that the ALT HOLD has been selected and that the aircraft is holding its altitude. Reduces to cruise power. "Altitude captured, cruise power set".	
		Selects the assigned altitude in the Altitude Alerter window. In the Lear 31A, arms the selected altitude. LEAR 35A ONLY: "XXXX* set". LEAR 31A ONLY: "XXXX* set and armed".
Aircraft is assigned to climb.	Verifies that the proper altitude has been selected in the Altitude Alerter window. LEAR 35A ONLY: "XXXX* seen". LEAR 31A ONLY: "XXXX* seen and armed". ALL AIRCRAFT: Increases power to climb power setting and pitches the aircraft to the speed defined by the climb profile defined in Section 3.1.2 of this manual. When the aircraft is at the proper speed, select speed mode for climb schedule.	

*Altitude, in thousands of feet, as it is assigned or set in the Altitude Alerter window.

3.1.2 – Lear 35A/Lear 31A Vertical Profile



5.1.1 – Prior to Top of Descent (TOD)

Prior to TOD the flight crew shall make every effort to obtain the current weather report for the destination airport. All cabin service items such as dishware, catering trays, and other items that must be stowed for landing shall be properly secured in their appropriate locations. The flight deck shall be organized in such a manner that non-flight related items such as books or newspapers shall be stowed in such a manner as to not interfere with any flight deck operations. Crew catering trays shall be stowed in the proper receptacle and liquids shall be secured such that they will not spill or leak.

The flight crew shall prepare the appropriate airport and terminal area charts and set up the secondary communication radio for receipt of the destination's weather reporting and to call in-range to the corporate terminal or FBO. A review of the assigned arrival procedure will be conducted by both the Pilot Flying and Pilot Not Flying and the Pilot Not Flying will validate that the waypoints in the FMS or GPS match the waypoints defined by the applicable navigation chart. The flight crew shall enter all expected or mandatory crossing restrictions into the VNAV page as vertical waypoints.

Once the aircraft reaches its TOD point the flight crew shall mark the elapsed time, altitude from which they are descending, and fuel onboard. This will be the final entry into the aircraft's navigation log.

5.1.2 – Airport Weather and Information

Airport weather and information shall be obtained as soon as practical. While at some airports it will be possible to obtain weather and airport information well before TOD, at other airports it may require that the aircraft get into range of the radio signal or out of the range of a radio signal from another airport. The Pilot Not Flying shall record the reported weather and airport information on the Navigation Log and present it verbally to the PF.

WEATHER AND AIRPORT INFORMATION MUST BE OBTAINED PRIOR TO 35 NM ROUTE DISTANCE FROM THE AIRPORT OF INTENDED LANDING.

Once weather and airport information is received and the PF is briefed, the flight crew shall establish the approach they expect to use and the taxi plan from the active runway to the parking ramp. An approach briefing will be conducted in accordance with Section 5.1.6 of this manual.

5.1.3 – Aircraft Descent

If an aircraft is assigned a small descent prior to starting the final descent to the destination airport, the flight crew may elect to delay the Descent Checklist. If a second smaller descent is assigned then the flight crew must complete the Descent Checklist.

When a flight is cleared to descend at Pilot's Discretion (PD), the flight crew shall plan to descend in accordance with the vertical profile in Section 5.1.4 of this manual to the next cleared or expected crossing restriction on the arrival. If no arrival is present, or no mandatory or expected crossing restrictions exist, then the flight crew shall descend per the vertical profile to at the appropriate rate using the airport as the first VNAV point. The FMS/GPS VNAV page will provide estimated VNAV for set crossing restrictions.

5.1.3 – Aircraft Descent (Continued)

EVENT	PF	PNF
		Completes TOD report on Navigation Log, as defined by Section 5.1.1 of this manual. Selects the assigned altitude in the Altitude Alerter window. In the Lear 31A, arms the selected altitude. LEAR 35A ONLY: "XXXX* set". LEAR 31A ONLY: "XXXX* set and armed".
Aircraft is assigned to descend.	Verifies that the proper altitude has been selected in the Altitude Alerter window. LEAR 35A ONLY: "XXXX* seen". LEAR 31A ONLY: "XXXX* seen and armed". ALL AIRCRAFT: Reduce power as appropriate for descent and pitches the aircraft to the speed defined by the climb profile defined in Section 5.1.4 of this manual. When the aircraft is at the proper speed. Descent may be performed in VS or Pitch Mode, at the PF's discretion.	
Aircraft is established in descent.	"Descent Checklist".	Completes the Descent Checklist as a challenge and self-response checklist, holding at the Transition Altitude items. "Descent checklist complete, holding for transition items".

*Altitude, in thousands of feet, as it is assigned or set in the Altitude Alerter window.

5.1.3 – Aircraft Descent (Continued)

EVENT	PF	PNF
Aircraft within 1000 feet of assigned/armed altitude.	Slows rate of descent to 1200 FPM or less. "One to go".	Verifies correct assigned altitude is armed in the Altitude Alerter window. Reads the altitude set in the Altitude Alerter during the following call-out. In the Lear 31A, verify that the altitude is armed as well. LEAR 35A ONLY: "One to go, XXXX* set". LEAR 31A ONLY: "One to go, XXXX* set and armed".
Aircraft within 300 feet of assigned/armed altitude.	Slow rate of descent to 500 FPM or less.	LEAR 35A ONLY: Prepares to select ALT HOLD on the altitude selector.
Aircraft at assigned/armed altitude.		LEAR 35A ONLY: Selects ALT HOLD. ALL AIRCRAFT: "Altitude captured".
	Verifies that the ALT HOLD has been selected and that the aircraft is holding its altitude. Increase power to appropriate cruise setting. "Altitude captured, cruise power set".	
Aircraft reaches transition level.	"Transition Level items".	Completes the Descent Checklist items listed below the Transition Level line. "Descent Checklist complete, Approach Checklist next".
	Performs approach briefing.	Sets up navigation instruments in accordance with the expected instrument approach.
	Monitors primary communication radio.	Calls in-range to FBO or corporate terminal.

*Altitude, in thousands of feet, as it is assigned or set in the Altitude Alerter window.

Aircraft descent may, at the PF's discretion, be made using the Vertical Speed (VS) or Pitch setting for the FD. When utilizing Pitch Mode, the PF should be mindful that frequent adjustments will be required to maintain the proper descent profile. Setting aircraft pitch and letting the aircraft fly at its own speed and descent rate is not permitted. All descents must be in accordance with either the published profile, or a briefed profile determined by the PF (abnormal descent profiles may only be used as required by circumstances and must define a descent rate or a vertical waypoint).

5.1.5 – Approach Briefing

An approach briefing must be conducted for every approach and landing and may be completed any time prior to the aircraft reaching 10,000 feet HAA. Dictating "Standard Briefing" is not considered a proper briefing by Trans-Pacific Jets and shall not be used.

Approach Briefing

The following items should be addressed in a standard Trans-Pacific Jets approach briefing:

- Type of approach (approach chart page number and revision date).
- Impaired runway conditions.
- The use of anti-ice for approach.
- Approach navigation aids frequencies and identifying code, as defined by the approach chart.
- Initial and final approach course as defined by the approach chart.
- Intercept altitude or altitude stepdowns as defined by the approach chart.
- Expected altitude at the FAF.
- Airspeed restrictions, if applicable.
- The MAP, MDA and/or DA as defined by the approach chart.
- The missed approach procedure as defined by the approach chart.
- Weather conditions at the airport of arrival and any applicable alternate airports, verifying that adequate weather conditions exist to execute the approach.
- Runway exit point and expected taxi routing.
- Emergency contingencies.
- Any deviations from the SOP.
- Comments or input.

5.1.6 – Terminal Area

For the purpose of the Standard Operating Procedures, the Terminal Area is considered any airspace below 10,000 feet HAA and within 20 NM of the airport of intended landing. Flight crew in the terminal area shall maintain vigilant watch for conflicting traffic and shall adhere to any TCAS RA.

Operations defined in these SOPs are applicable to a standard approach and when abnormal routing is expected the flight crew shall brief any divergence from these SOPs.

5.1.6 – Terminal Area (Continued)

EVENT	PF	PNF
Aircraft passes through 10,000 feet HAA.	Aircraft passes 10,000 feet HAA at an indicated speed no greater than 250 KIAS.	Cycles the No Smoking/Fasten Seatbelt switch once, to notify the passengers that you have passed 10,000 feet HAA.
Aircraft is within 25 NM track distance to the destination airport.	Begin slowing the aircraft to be at 200 KIAS within 20 NM track distance to the destination airport.	
	Aircraft is stable at 200 KIAS. "Flaps 8, Approach Checklist".	Sets flaps to 8° down position. "Flaps 8 set". Observe that flaps have moved to the 8° position. "Flaps 8 indicating". Completes the Approach Checklist as a Challenge and Self-Response Checklist. "Approach Checklist complete, Before Landing Checklist next".

5.1.7 – Precision Approach

A precision approach is any instrument approach with vertical and lateral guidance. When a precision approach is accepted by the flight crew, these procedures shall be followed even if that precision approach is executed in VMC.

5.1.7 – Precision Approach (Continued)

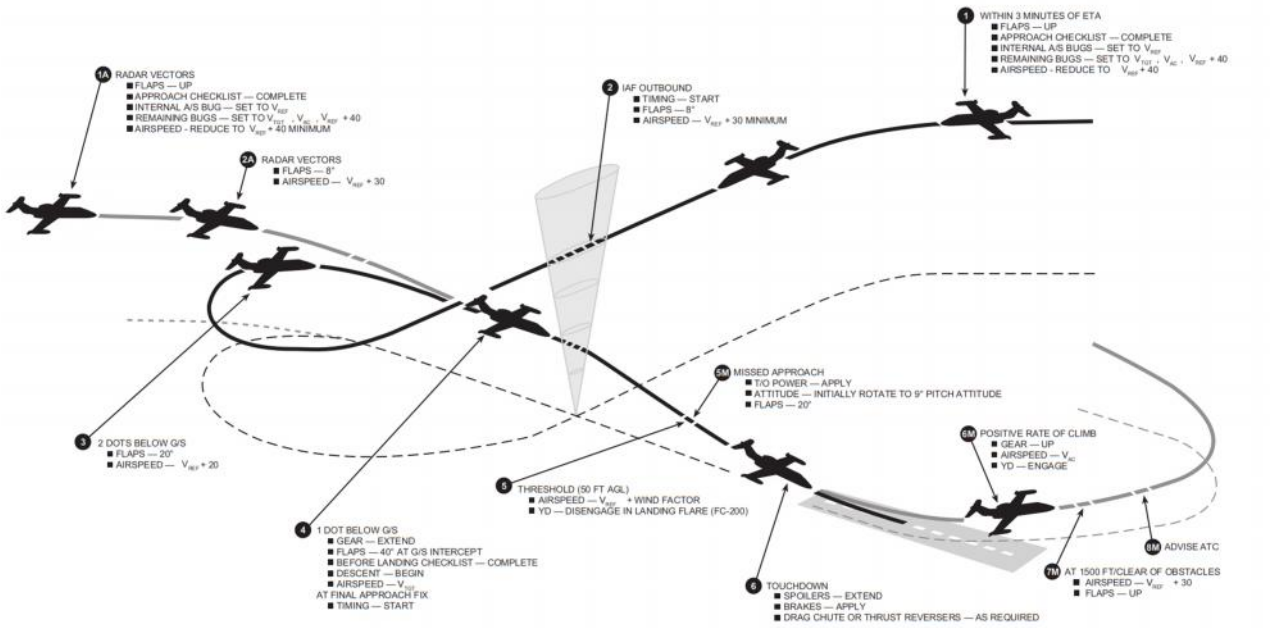
EVENT	PF	PNF
Aircraft is on vectors or expected to intercept the final approach course OR aircraft is on a feeder or initial approach point.	Selects Green Nav, verifies that the HSI is set to the proper inbound course and the navigation radio is set to the proper frequency. Reduce speed to VREF+30. "Green Nav selected".	Identifies the navigation radio to ensure the proper navigation aid is transmitting. Identifies the navigation aid. "Nav 1/2 identified".
Cleared by ATC for a precision approach.		Arms the approach mode for the FD. "Approach armed".
	Verifies that approach mode is armed and all navigation radios and LNAV are properly set in Green Nav. "Approach set".	
Localizer captured.	"Loc captured".	Verify both course indicators concur. "Loc captured".
Two dots below glideslope.	"Flaps 20".	Sets flaps to 20° down position. "Flaps 20 set". Observe that flaps have moved to the 20° position. "Flaps 20 indicating".
One dot below glideslope.	"Gear down, Before Landing Checklist".	Select landing gear handle to the down position. "Gear selected down". Verify that three green lights indicate that all landing gear have deployed to the down position and locked. "Three green, no red".
	Verify three green, no red lights indicating for landing gear. "Three green, no red".	Performs Before Landing Checklist as a challenge and self-response checklist, holding on flap movement. "Before Landing Checklist holding on final flaps and yaw damper".
	Slow aircraft to VREF+20.	

5.1.7 – Precision Approach (Continued)

EVENT	PF	PNF
Glideslope intercept.	"Glideslope capture, Flaps 40".	Verify that both glideslope indicators concur. Sets flaps to 40° down position. "Glideslope capture, flaps 40 set". Observe that flaps have moved to the 40° position. "Flaps 40 indicating".
	Slow aircraft to VREF+10.	
Aircraft is 1000 feet above DH.		"1000 above mins".
	"Continuing".	
Aircraft is 100 feet above DH.		"100 above mins".
	"Continuing".	
Runway environment is sighted.		"Runway in sight".
	"Landing".	
Aircraft reaches DH and runway environment is not in sight.		"Mins, runway not in sight".
	Initiate missed approach procedure. "Going missed".	Perform missed approach items as defined by Section 5.1.12 of this manual. Notify ATC of missed approach.
Aircraft reaches DH and approach light system is in sight.		"Mins, approach lights in sight".
	Continue to 100 feet above TDZE. "Continuing".	
50 feet AGL.	Begin gradual landing flare. As aircraft reaches 20 feet AGL: "Yaw away".	Disengage yaw damper. "Yaw away".

5.1.7 – Precision Approach (Continued)

Precision Approach/Missed Approach and Landing



5.1.9 – Visual Approach

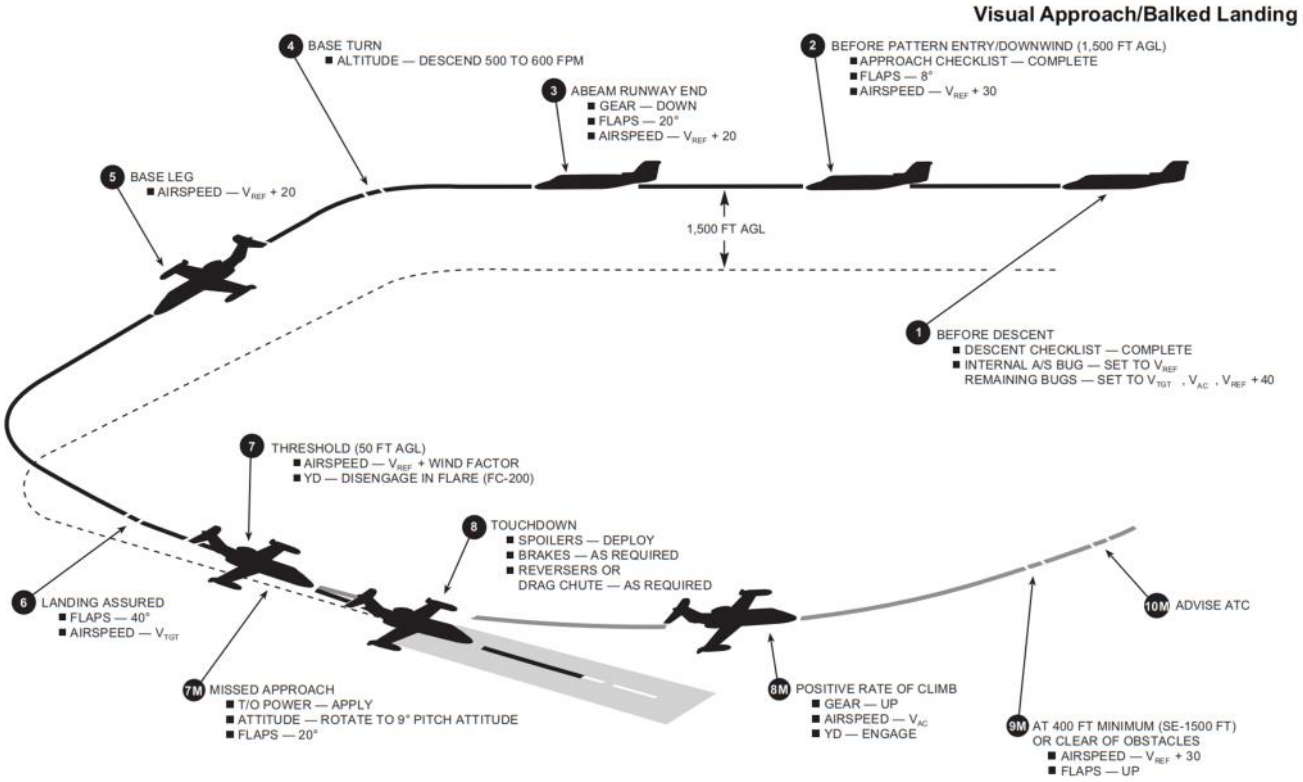
A visual approach may only be accepted if both flight crewmembers have positive visual identification of the airport landing surface. Visual approaches shall be conducted in accordance with the restrictions and requirements defined by Operations Specifications C077.

EVENT	PF	PNF
Aircraft has been cleared the visual approach and approaches the traffic pattern.	Reduce speed to VREF+30.	
Aircraft enters traffic pattern at 1500 feet AGL and abeam the landing runway.	"Flaps 20".	Sets flaps to 20° down position. "Flaps 20 set". Observe that flaps have moved to the 20° position. "Flaps 20 indicating".
	"Gear down, Before Landing Checklist".	
	"Gear down, Before Landing Checklist".	Select landing gear handle to the down position. "Gear selected down". Verify that three green lights indicate that all landing gear have deployed to the down position and locked. "Three green, no red".
	Verify three green, no red lights indicating for landing gear. "Three green, no red".	Performs Before Landing Checklist as a challenge and self-response checklist, holding on flap movement. "Before Landing Checklist holding on final flaps and yaw damper".
	Slow aircraft to VREF+20.	

5.1.9 – Visual Approach (Continued)

EVENT	PF	PNF
Aircraft is established on final approach to landing runway.	"Flaps 40".	Sets flaps to 40° down position. "Flaps 40 set". Observe that flaps have moved to the 40° position. "Flaps 40 indicating".
	Slow to VREF+10.	
50 feet AGL.	Begin gradual landing flare. As aircraft reaches 20 feet AGL: "Yaw away".	Disengage yaw damper. "Yaw away".

5.1.9 – Visual Approach (Continued)



5.1.10 – Alerting Callouts

Alerting callouts are designed for the Pilot Not Flying to alert the Pilot Flying to deviations from the approach profile. It is mandatory that the Pilot Flying acknowledge the alerting callout. If the Pilot Not Flying initiates an alerting callout and receives no response from the Pilot Flying, then a second alerting callout will be made. If no response is received from the second altering callout, the Pilot Not Flying shall take control of the aircraft.

EVENT	PF	PNF
Glideslope deviation of greater than ½ dot.		"Glideslope".
	Corrects aircraft descent path to maintain glideslope within ½ dot. "Correcting".	
Localizer deviation of greater than 1 dot.		"Localizer".
	Corrects lateral path of the aircraft to re-intercept the localizer centerline. "Correcting".	
Speed deviation of greater than 10 KIAS.		"Airspeed".
	Reduces or increases airspeed as necessary. "Correcting".	
Altitude deviation of greater than 50 feet during a nonprecision approach.		"Altitude".
	Returns aircraft to correct altitude. "Correcting".	
In the event that a previous alerting callout was not acknowledged or that the problem is now twice the error than previously.		Announce in a loud, commanding voice (not yelling): "Caution XXXXX*".

*XXXX indicates the appropriate alert, such as "airspeed" or "glideslope".

5.1.11 – Missed Approach

The missed approach shall be initiated when the aircraft reaches the DH/DA or MDA and the runway environment is not in sight. The Pilot Flying shall initiate the missed approach when the callout for minimums is made by the Pilot Not Flying and the runway environment cannot be visually identified.

The balked landing or go-around may be initiated without a callout from the Pilot Not Flying.

EVENT	PF	PNF
Aircraft reaches DH, MAP or missed approach time and runway environment is not in sight.		"Mins, runway not in sight".
	Initiate missed approach procedure. "Going missed".	
Missed approach executed.	Pitch aircraft to 9° nose up. Apply takeoff power. "Flaps 20".	Sets flaps to 20° down position. "Flaps 20 set". Observe that flaps have moved to the 20° position. "Flaps 20 indicating".
Aircraft indicates a positive rate of climb.		"Positive rate".
	"Gear up, yaw on".	Selects gear to the up position. Engages yaw damper. Verifies that the landing gear is indicating as retracted. "Gear up, yaw damper on".
	Maintain V2.	
Aircraft climbing through 400 feet AGL on missed approach.	Fly the published missed approach procedure.	Set or verify that the initial level off altitude for the missed approach is set in the altitude alerter. Set the missed approach heading. Set the nav radio and course indicator to the first nav aid and intercept radial associated with the missed approach. "Missed approach set".

EVENT	PF	PNF
		"1500 feet".
Aircraft reaches 1500 feet HAA and clear of all obstacles.	Reduces aircraft pitch to approximately 9° nose up and accelerates the aircraft to V2+30. Reduces power to Climb Power setting. "Speed checks, flaps up".	Retract flaps and completes the After Takeoff flow as defined by the aircraft checklist. "Flaps up".

6.1.1 – Stabilized Approach

All flights will be stabilized by 1000 feet HAA unless the criteria defined in this section as "stabilized" cannot be met due to approach considerations or abnormal aircraft conditions. An approach is stabilized by meeting the following criteria:

- On the correct vertical and lateral flight path.
- Requiring only small changes to pitch and heading.
- Within ten knots of target speed as defined by the approach briefing.
- Aircraft configured for landing.
- Sink rate of no greater than 1200 FPM, unless required by the approach.
- Appropriate power settings for the approach without need for drastic changes.
- Aircraft aligned with the runway for straight-in landing by no less than 500 feet HAA.
- All briefings and checklists complete.

If, in the opinion of either flight crew member, the stabilized approach criteria as defined above cannot be met then a go-around must be executed.

6.1.2 – Landing and Rollout

When landing the aircraft, it must be on the runway centerline and touch down in the runway TDZ. The flight crew shall refrain from "floating" the aircraft in an attempt to smooth the landing touchdown, but will set the aircraft onto the TDZ in a firm but not rough manner.

Directional control shall be maintained by the Pilot Flying throughout the landing rollout until such time as the aircraft has reached a speed safe for runway clearance. Clearing the runway shall be accomplished at a speed not to exceed a brisk walk and turning the aircraft in such a manner that excessive lateral forces are placed on the main landing gear is strictly prohibited. If the Second-in-Command was acting as Pilot Flying, the flight controls shall transfer after the aircraft has slowed to less than 45 KIAS.

EVENT	PF	PNF
Main landing gear touches down.	Hold nosewheel off the ground for a reasonable time and gently lower onto the runway surface.	Deploy spoilers. "Spoilers deployed".
Nosewheel touches down.	Engage reverse thrust at idle.	
		Observe both thrust reversers have deployed completely. "Two deployed".
	Increase reverse thrust as needed.	
Aircraft slows to 45 KIAS.	Engage NWS.	

THE FLIGHT CREW IS PROHIBITED FROM PERFORMING ANY AFTER LANDING ITEMS UNTIL SUCH TIME AS THE AIRCRAFT HAS CLEARED THE RUNWAY.