INTRODUCTION

PURPOSE

The B-727 Flight Manual applies to all Federal Express Corporation B-727 airplanes and contains information required to operate the airplane. The manual provides the reader with a general knowledge of the airplane, its characteristics, and specific normal and emergency operating procedures. The pilot's flying experience is recognized; therefore basic flight principles are avoided. Instructions contained in this manual shall govern the conduct of flight and the handling of the B-727 airplane on all flights. However, multiple emergencies, adverse weather, terrain, or other extenuating circumstances may require modification of any procedures presented in this manual.

PUBLICATION DATA

CONTENT RESPONSIBILITY AND AUTHORITY

The B-727 Flight Manual has been developed exclusively by the Flight Technical Support and Systems & Operations Publications departments of Federal Express Corporation for the cargo version of the B-727 airplane. The content of this manual is the responsibility of the B-727 Fleet Manager, Flight Technical Support, who coordinates its revision and review and is listed on the Publications Sign-off Authority matrix as having approval authority.

Authority for the manual is provided under FAR Part 121.141(b) in accordance with FAR Part 121.133.

The following chapters of this manual are approved by the FAA as containing information equivalent to the appropriate chapters of the FAA Approved Flight Manual.

CHAPTER 1 — LIMITATIONS

CHAPTER 2 — EMERGENCY AND ABNORMAL PROCEDURES

CHAPTER 3 — NORMAL PROCEDURES

CHAPTER 5 — PERFORMANCE

The B-727 Airport Performance Manual is approved by the FAA as containing the remaining performance information equivalent to that included in the FAA Approved Airplane Flight Manual.

FAR 121.141 requires that the FAA Approved Airplane Flight Manual, or an equivalent manual, be carried on board each airplane. This manual, in conjunction with the B-727 Airport Performance Manual, satisfies the requirement of an equivalent manual. A copy of this manual and the B-727 Airport Performance Manual must be carried on board the airplane for each flight.

This manual incorporates all required procedures and limitations (normal, abnormal, and emergency) required by Supplemental Type Certificates (STC's) issued and installed on Federal Express B-727 airplanes.

Unusual operations or configurations are prohibited unless specifically approved and provided herein. Except as provided under Parts 91/121 of the Captain's emergency authority, no crewmember may deviate from the provisions of this manual. Approval shall be obtained from the Fleet Manager when questionable operations are contemplated and where not specifically permitted by this manual.

APPLICABILITY

Where information applies to the B-727-100 series (101-199 and 501-599) aircraft, the notations "-100" and "-100's" are used. Where information applies to the B-727-200 series (201-299 and 410-499) aircraft, the notations "all 200's" or "-200" are used. Where information applies to specific aircraft, tail numbers are used (i.e.; "243-246," etc.). Where the procedures in this manual differ from those contained in the FAA Approved Airplane Flight Manual for this airplane, Federal Express Corporation has determined that equivalent safety is provided by such alternate procedures and assumes full responsibility for this determination

The airplane must be operated in compliance with the limitations contained in the LIMITATIONS chapter of the FAA Approved Airplane Flight Manual. All pertinent limitations imposed upon the operation of the airplane, its systems, and equipment by the FAA Approved Airplane Flight Manual have been included in this manual.

When operations are scheduled with certain airplane system components unserviceable, the airplane must be operated in accordance with the limitations stated in this manual and as amended by the Minimum Equipment List (MEL). Maintenance shall install placards at appropriate locations in the airplane advising of unserviceable equipment. Under some circumstances, crew members may be required to install inoperative placards.

B-727 NORMAL CHECKLIST

BEFORE START (C&R)–F

AIRCRAFT LOG	REVIEWED	C
PARKING BRAKE	SET	C
	HYD PRESSURE _____#	F
FUEL QUANTITY	_____#	S
	RELEASED WITH _____#	C
FUEL USED COUNTERS	RESET	S
ANTISKID	ON/LIGHTS OUT	C
AUTOBRAKES	OFF	C
WINDOW HEAT	LOW/ON	C
AUTOPILOT TRANSFER SWITCH	AS REQ	C
RADIOS	SET FOR DEPARTURE	C/F
OXYGEN MASKS & REG	CHECKED/100%	ALL
	PRESSURE _____#	S
ALTIMETERS	CHECKED/SET_____	ALL
TAKEOFF DATA CARD	BRIEFED	C
AIRSPEED BUGS	SET	C/F
TRIM	ZERO/ZERO/_____ NOSE UP	C
COCKPIT BRIEFING CARD	REVIEWED	ALL
CUSTOMS/FLIGHT FORMS	ON BOARD	S
GROUND INTERCONNECT	CLOSED	S
HYD PUMPS QTY & PRESS	2A OFF/	
	1B ON & CHECKED	S
S/O PANEL	SET FOR START	S
BEACON	ON	F

AFTER START (C&R)–S

▶ START VALVE ARMING SW	CLOSED	S
▶ IGNITION	OFF	S
▶ BLEED AIR SWS	SET	S
TOW BAR	DISCONNECTED	C
▶ ESS PWR	CHECKED	S
▶ GEN BRKRS	CLOSED	S
▶ FUEL PANEL	SET	S
"STANDING BY A PUMPS"	A PUMPS ON	C/S
▶ HYD B PUMPS	ON	S
HYD & BRAKE SYS	CHECKED	F/S
▶ LEFT PACK	ON	S
ENGINE ANTI-ICE	OPEN/CLOSED	C/S
PITOT HEAT	ON/LIGHTS OUT	F

BEFORE TAKEOFF (C&R)–S

FLAPS	____/____/GRN LIGHT	F
	CHECKED	C
SPEEDBRAKE LEVER	CHECKED/ DETENT	F
AUTOSPOILERS	DISARMED/LIGHT OUT	F
FLIGHT CONTROLS	CHECKED/ LIGHTS OUT	F
	RUDDER CHECKED	C
YAW DAMPERS	CHECKED	C
FLIGHT INSTRUMENTS	CHECKED	C/F
COMPASS	____° ALIGNED	C/F
RADAR	CHECKED	F
ISI/ON INS SWITCH	OFF	S/F

DELAYED START (C&R)–S

▶ A/C PACKS	OFF	S
▶ BLEED AIR SWITCHES	OPEN	S
▶ DUCT PRESSURE	_____#	S
"READY ON____"	"START NO._____"	S/F
▶ BLEED AIR ENGINE #2	CLOSE	S
▶ ESS POWER	#3 GEN	S
▶ GEN BRKRS	CLOSED	S
▶ LEFT PACK	ON	S
ENGINE ANTI-ICE	OPEN/CLOSED	C/S

▶ IGNITION	FLT/CONTINUOUS	S
▶ FLT RECORDER SWITCH	FLT/ON	S
▶ FUEL PANEL	SET FOR T.O.	S
▶ FUEL HEAT	AS REQ/OFF	S
▶ HYD PANEL	CHECKED	S
▶ GRND VENTURI - FLT/GND SW	NORM/FLT	S
▶ PRESSURIZATION	SET	S
▶ OUTFLOW VALVE OVERRIDE SW	ARMED	S
▶ APR	CHECKED	S
▶ APU MASTER SW & LIGHT	OFF & OUT	S
▶ WING ANTI-ICE	CHECKED/OFF	S
SEAT BELT & HARNESS	FASTENED	ALL
IGNITION	FLT/CONTINUOUS	F
PDCS	SET	C
EPR BUGS	MAXIMUM	C
START LEVERS	IDLE	F
BRIEFING	COMPLETE/RUNWAY_____	C
	RUNWAY_____	S

WARNING LIGHTS	OUT	F/S
RADAR	SET	F
TRANSPONDER	ON	F
LIGHTS	AS REQ	F
▶ GSD OIL COOLER SW	GROUND OFF	S
▶ AUTO PACK TRIP	NORMAL/LIGHT ON	S
▶ APR	NORMAL/LIGHT ON	S

AFTER TAKEOFF–S

LANDING GEAR	UP/OFF/LIGHTS OUT	PNF
FLAPS	UP/ LIGHTS OUT	PNF
ANTI-ICE	AS REQ	S
OUTBOARD/TAXI LIGHTS	OFF	PNF
FUEL PANEL	SET	S
HYDRAULIC PANEL	CHECKED	S
OUTFLOW VALVE OVERRIDE SW	DISARM	S
AIR COND & PRESSURIZATION	SET	S
PACK COOLING DOORS	SET	S
AUTO PACK TRIP	CUT OUT	S
APR	LIGHT OUT	S
CLIMB POWER	SET	S
IGNITION	AS REQ	S

ALTIMETERS (C&R)–S

(ABOVE TRANSITION ALTITUDE)

ALTIMETERS	SET 29.92"	ALL
▶ LIGHTS	AS REQ	PNF
▶ BLEED AIR SWS	SET	S

LEGEND

(C&R) CHALLENGE AND RESPONSE CHECKLIST. ALL CHALLENGE AND RESPONSE ITEMS WILL BE READ ALOUD. IF THE EQUIPMENT IS NOT INSTALLED, THE RESPONSE SHALL BE "NOT INSTALLED". ALL OTHER CHECKLISTS ARE SILENT VERIFICATION CHECKLISTS BY THE SECOND OFFICER.

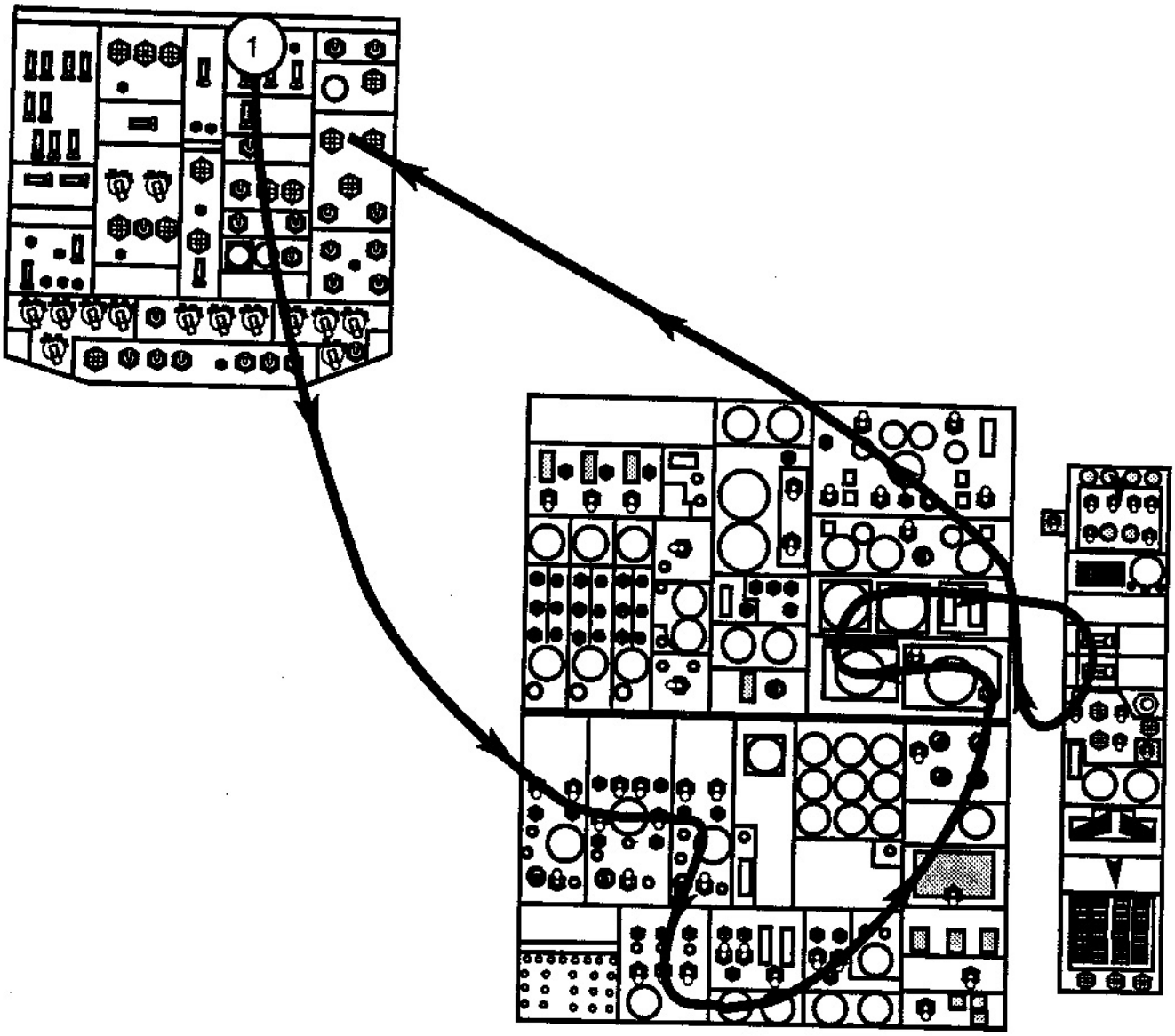
SHADED ITEMS MAY OR MAY NOT BE INSTALLED.

▶ SECOND OFFICER ASSURES COMPLETION - CHALLENGE & RESPONSE NOT REQUIRED.

☐ MANDATORY CHECKLIST ITEMS FOR DELAYED STARTS AND TOW-INS.

FedEx B-3118 7/91

BEFORE TAKEOFF — S — FLOW PATTERN



AMPLIFIED BEFORE TAKEOFF CHECKLIST (C&R)

(SECOND OFFICER READS)

Procedures contained in this checklist must not be accomplished until the aircraft is clear of congested areas. Checklist procedures will be initiated only after the Captain calls "CLEARED TO CONFIGURE." All items should be completed prior to the checklist being read. The checklist will be read when the Captain calls "BEFORE TAKEOFF CHECKLIST." In the event of a delayed engine start, the S/O will announce "STANDING BY FOR DELAYED START CHECKLIST."

When a delayed start is planned the S/O must wait until completion of the DELAYED START checklist to perform the silent items on the BEFORE TAKEOFF checklist.

When the BEFORE TAKEOFF checklist has been completed down to the line, the Second Officer will report "DOWN TO THE LINE."

Flaps ..... ____ / ____ / GREEN LIGHT F
CHECKED C

- Takeoff flaps will be set to 5°, 15°, 20°, or 25°, as shown on TAKEOFF DATA card. Check FLAPS indicators for proper indication, green LE FLAPS light on, and flap handle is seated in the proper detent.

Speed Brake Lever ..... CHECKED/DETENT F

- First Officer holds FLT CONTROL WARNING TEST switch in the SAFETY RELAY BYPASS position.
- Captain raises SPEED BRAKE lever out of detent, moves lever aft, and notes warning horn sounds intermittently.
- The Captain places SPEED BRAKE lever into detent and notes warning horn silences.
- First Officer releases FLT CONTROL WARNING TEST switch.
- Accomplish this check prior to each takeoff.

Autospoilers
(If Installed) ..... DISARMED/LIGHTS OUT F

Flight Controls ..... CHECKED/LIGHTS OUT F
RUDDER CHECKED C

- After flaps have reached takeoff position, check free and full travel of all controls.
- Check rudders, elevators, and ailerons receiving hydraulic power with lights out.
- The Captain checks rudder travel, holding nose wheel steering, while the First Officer checks the ailerons and elevators. Observe rudder and elevator position indicator for proper response.
- Second Officer will observe pressure bumps in hydraulic Systems A&B as controls are tested.

Yaw Dampers ..... CHECKED C

- Check that either UPPER and LOWER RUDDER yaw damper green ENG lights are on (some aircraft), or orange YD flags are out of view. While aircraft is moving, hold rudder pedals neutral and turn aircraft with nosewheel steering. Observe UPR RUD and LWR RUD pointers moving in direction opposite to turn, but not farther than the inside white indices.

Flight Instruments ..... CHECKED C /F

- Check flight instruments are operating properly with no flags in view.

NOTE

The TAT indicator may display either an OFF flag indicating that the heated TAT probe is hotter than the TAT indicator can indicate (digital face) or will read off scale (dial face). This condition will remedy itself during takeoff roll.

Compass Indicators ..... _____°ALIGNED C/F

- Observe HSIs and RMIs agree within 4° and reflect changes in aircraft heading. Observe synchronization indicator for proper alignment.

Radar ..... CHECKED F

- First Officer will tune and check radar after aircraft is clear of line area and large reflective objects. During taxi, antenna will be set to full UP position except for the check (refer to Supplementary Procedures Chapter).
- This check is required on originating flights only.
- Position radar to STANDBY or OFF after check, as required.

HSI on INS Switch (If Installed) ..... OFF C/F

DELAYED START

(SECOND OFFICER READS)

The Captain shall call for the starting of any engine(s) in sufficient time prior to takeoff to allow for completion of checklists, and APU cool-down. When called for by the Captain, Second Officer and First Officer will start remaining engine(s), leaving the Captain free to taxi the aircraft.

▶**A/C Packs** .....OFF S
- Observe KW decrease (after short time delay) and increase in duct pressure.

▶**Bleed Air Switches** .....OPEN S
- Open all BLEED AIR switches to ensure sufficient air sources for engine start.

▶**Duct Pressure** ....._____ PSI S
- Second Officer will check duct pressure between 30 and 45 psi. Pressure may vary below 30 psi (1/2 psi per 1000 feet of pressure altitude above sea level).

"READY ON _____" ....."START _____" S/F
- Second Officer will announce when ready to start appropriate engine(s), and First Officer will respond by giving start command. Start remaining engine(s) as appropriate using normal start procedures.

▶**Bleed Air Engine No. 2** .....CLOSED S

▶**Essential Power** .....NO. 3 GEN S
- Rotate ESSENTIAL POWER SELECTOR, pausing in each generator position, and observe essential power failure light out. If operating, leave ESSENTIAL POWER selector in GEN 3 position. If not operating, select GEN 1 or GEN 2 in that order of priority.

▶**Generator Breakers** .....CLOSED S
- Close open GEN breaker of the started engine(s). Observe synchronized lights flashing simultaneously and check the generator's frequency and voltage normal before closing its GEN breaker. Observe appropriate generator lights extinguished and APU GENERATOR breaker light illuminated. Leave AC meter selector in BUS TIE position.

▶**Left Pack** .....ON S

Engine Anti-Ice .....OPEN/CLOSED C
OPEN/CLOSED S

WARNING

Do not continue with the BEFORE TAKEOFF checklist unless all engines are operating.

BEFORE TAKEOFF
(continued)

▶**Ignition** .....FLIGHT/CONTINUOUS S

▶**Flight Recorder Switch (If Installed)** FLIGHT/ON S

▶**Fuel Panel** .....SET FOR T/O S

▶**Fuel Heat** .....AS REQUIRED/OFF S
- If fuel heat is required (fuel tank temperature less than 0°C), use fuel heat for one minute, then OFF.

NOTE

(–200) Applying Fuel heat on the ground with all crossfeeds OPEN is permissible.

WARNING

Do not take off with fuel heat on as multiple engine failures could occur due to fuel pump cavitation.

▶**Hydraulic Panel** .....CHECKED S

▶**Ground Venturi or Flt/Ground Switch** .....NORMAL/FLT S

▶**Pressurization** .....SET S
- (–100) When thrust levers are in IDLE position, move GROUND VENTURI switch to NORMAL.
- If cabin rate of descent exceeds 600-700 FPM after moving GROUND VENTURI switch to NORMAL, return switch to GROUND VENTURI until rate of descent stops, then return it to NORMAL.
- When cabin rate of CLIMB indicator stabilizes, slowly move CABIN ALTITUDE selector on the automatic CABIN PRESSURE CONTROLLER to an altitude of 200 feet below field elevation. Observe an initial rate of descent indicated and then cabin pressure stabilized at approximately .100 pressure differential. Cabin altimeter should indicate field elevation minus 200 feet.
- If field conditions (high pressure altitude or temperature) or prudence dictate, Captain may elect to make a packs-off takeoff, in which case the LEFT PACK may be turned ON after a minimum altitude of 1000 feet AGL has been attained.
- (–200s) Ensure the outflow valve is NOT in the

full open position and check for maximum cabin differential of .125 psi.

►**Outflow Valve Override Switch (If Installed)** ..... ARMED S

- In the ARM position the aircraft will automatically depressurize in the event of a main cargo door warning inflight.

►**APU Master Switch and Light** .... OFF & OUT S

- The APU annunciator light should extinguish within one minute after shutdown.
- Normally, allow one minute of APU operation with no airload before APU shutdown. If unable to allow one minute of no-airload operation because takeoff is imminent, APU may be shut down when EGT indicates 375°C or less.

►**Wing Anti-Ice** ..... CHECKED/OFF S

- Rotate VALVE POS selector to WING and observe both VALVE POS lights illuminate. Hold both WING anti-ice switches to GRD TEST and observe both VALVE POS lights extinguished and then illuminate. Release both WING anti-ice switches to CLOSE and observe both VALVE POS lights extinguish and then illuminate. Rotate VALVE POS selector to OFF.
- (–100) APU must be off to conduct this test.
- (–200) If wing anti-ice was previously checked during cockpit setup, a re-check at this point is not required.

Seat Belt and Harness ..... FASTENED ALL

- S/O will check ACMs for proper belt/harness fastening.

Ignition ..... FLIGHT/CONTINUOUS F

- S/O is responsible for placing the START switches to FLIGHT, or placing the Continuous Ignition switch to ON. First Officer responds to the checklist.

PDCS (If Installed) ..... SET C

- Review takeoff information for accuracy and engage the desired takeoff mode. Set the mode selector to the CLB position, but do not press the ENGAGE button.

EPR Bugs ..... MAXIMUM C

- EPR bugs are always set to maximum EPR for takeoff.

Start Levers ..... IDLE F

Briefing ..... COMPLETE/RUNWAY ____ C
COMPLETE/RUNWAY ____ S

- The Captain's briefing shall include, but not be limited to, the following items:
  - Standard Procedures (except....)
  - Designation of pilot flying the leg
  - Confirmation of takeoff runway which both the Captain and S/O shall verify
  - Emergency return /Engine Out procedures.
  - Additional items that may be necessary for the specific takeoff such as anti-ice usage, MEL restrictions, windshear precautions, or other abnormal conditions
  - The Pilot Flying (PF) shall brief ATC area departure procedures.
- The term Standard Procedures includes the following:
  - Standard callouts (80 kts, V_1, rotate, positive rate, malfunctions prior to V_1).
  - The Captain will make the decision to reject the takeoff and take control of the airplane to perform the RTO. If the takeoff is rejected, the S/O will back up ground spoiler deployment and advise of reverse thrust capability by announcing the number of reverser lights and associated EPR: i.e. 3 lights, 1.6".
  - With the loss of one engine after V_1, the S/O will, at an appropriate time, remind the Captain of the dump time required to achieve landing weight and await fuel dump instructions.
  - With the loss of two engines, the S/O will automatically commence fuel dump and advise the Captain that dump is in progress.
  - The PNF will notify ATC in the event of an emergency, as appropriate.
  - In the event of an emergency, the PF will continue to fly the airplane and the PNF will work with the S/O, unless the Captain directs otherwise.

- If required, the Captain may deviate from standard procedures but must brief deviations in sufficient detail to ensure all crewmembers understand their responsibilities.
- At the completion of the Captains briefing, the S/O shall announce "Down to the Line".
- Prior to taking the active runway, the Captain will scan the S/O panel to check for warning lights, ensure electrical panel integrity, fuel boost pumps ON, fuel heat OFF, hydraulic pumps ON, and door lights out. When taxiing onto the runway, the Captan will call for the remainder of the BEFORE TAKEOFF checklist as "Below the Line".

Warning Lights .....OUT F/S

- The First Officer scans forward instrument panel and Second Officer scans all panels. Observe all warning lights out.

Radar.....SET F

Transponder.....ON F

- Check transponder set to assigned code, ALTITUDE REPORTING switch ON and ADC switch set when applicable.

Lights .....AS REQUIRED F

- Turn on landing lights, runway turnoff lights, strobes, and taxi light when cleared for takeoff and the aircraft is aligned with runway, unless reduced visibility causes scatterback. Maximum use of inboard landing lights and runway turnoff lights is encouraged below FL 180 when visual meteorological conditions exist.

►**CSD Oil Cooler (if installed)** ...GROUND OFF S

- CSD OIL COOLER switch is placed to GROUND OFF when thrust levers are advanced for takeoff.

►**(-200) Auto Pack Trip** ....NORMAL/LIGHT ON S

- The Auto Pack Trip shall be used and armed for all takeoffs. The ARMED light will not illuminate until throttles are advanced to 1.5 EPR. If the AUTO PACK TRIP ARMED light fails to illuminate at 1.5 EPR, the S/O shall announce "NO GREEN LIGHT" and the throttles shall not be advanced beyond the vertical position (see Power Plant Emergency and Abnormal Procedures, Chapter 2-1).

WARNING

Do not attempt to takeoff if the intermittent takeoff warning horn sounds early in the takeoff roll. Discontinue the takeoff and correct the condition. Should the takeoff warning horn sound when the airplane is committed to takeoff, a rotation speed greater than V_R is recommended.

NOTE

With the completion of the last applicable checklist item, the S/O will announce "Before Takeoff checklist complete."

TAKEOFF PROCEDURES: CAPTAIN FLYING

Complete the Before Takeoff checklist while taxiing into position on the runway. Use nosewheel steering for initial alignment, then revert to rudder steering and shift the left hand to the control wheel.

Advance all thrust levers to a vertical position (approximately 1.5 EPR). This permits the engines to accelerate to a point beyond which uniform acceleration to takeoff EPR will occur on all engines. When the engines have stabilized, the Captain will smoothly advance the thrust levers to approximate takeoff power and call "Set MAX/STD Power." The First Officer will follow through and set the planned takeoff EPR setting, making the final adjustment prior to 60 KIAS and call "MAX/STD Power Set." The First Officer will ensure the desired takeoff thrust is properly set. The Second Officer will position the oil cooler CSD switch to GROUND OFF and/or position the Auto Pack Trip switch to NORMAL when thrust levers are advanced for takeoff. The Second Officer will monitor engine instruments and annunciator panels during the takeoff roll and initial climb. The Captain will keep one hand on the thrust levers until the V_1 call so that he can respond quickly to a rejected takeoff situation.

TAKEOFF PROCEDURES: FIRST OFFICER FLYING

When cleared for takeoff, the Captain will align the aircraft with the runway centerline and call "You Have The Airplane" while advancing the thrust levers to a vertical position (approximately 1.5 EPR). When all engines have stabilized, the First Officer will call "Set MAX/STD Power," and the Captain will then advance the thrust levers to the planned takeoff EPR setting, making the final adjustment prior to 60 KIAS, and will call "MAX /STD Power Set." The Captain will ensure the desired takeoff thrust is properly set. The Captain will keep his hand on the thrust levers until the V_1 call so he can quickly respond to a rejected takeoff situation. The First Officer will keep both hands on the control wheel until after gear retraction. The duties of the Second Officer are the same as those described under TAKEOFF PROCEDURES: CAPTAIN FLYING when the First Officer is making the takeoff. If the takeoff is to be rejected, it is the Captain's responsibility to take control of the aircraft and reject the takeoff.

TAKEOFF ROLL

Static or rolling takeoffs are permitted; however, the rolling procedure is recommended. The entire crew should monitor ATC and cross-check instruments to ensure compliance with the clearance and standard procedures.

NOTE

If conditions require V_1 speed to be lower than V_R (cluttered runway), the speed markers will be set to the V_1 and V_R speeds on both air speed indicators. The remaining speed markers will be set to flaps 0° MMS, 2° MMS, and 5° MMS. The first flap retraction, flaps 15° takeoff, will be at BUG+10 KIAS. The first flap retraction, flaps 5° takeoff, will be at BUG+30 KIAS per Boeing Airplane Company restriction; then use the MMS speeds as in a normal takeoff.

Maintain appropriate taxi speed until aligned with the runway centerline. During takeoff, use rudder pedal steering and rudder for directional control.

As this aircraft has a relatively light nosewheel loading, apply positive forward control wheel pressure to keep the nose wheel rolling firmly on the runway. The PNF will call out "80 KIAS," "V_1," and "Rotate." The PF will acknowledge the 80 KIAS call by responding with "CHECK."

ROTATION

Takeoff and initial climb performance depends on rotation at the correct airspeed and proper rate to the correct attitude. Early, rapid or over-rotation may cause tailskid contact with the runway. Late, slow, or under-rotation increases takeoff ground run. Any improperly handled rotation decreases initial climb performance. Approaching V_R, move the control wheel aft to the neutral position. This will avoid a long control wheel movement when rotating to the takeoff attitude. The pilot making the takeoff is responsible for checking his own airspeed and starting rotation at V_R. At V_R, smoothly exert back pressure using both hands to produce about a 2 degree per second rotation to approximately 10 degrees nose up. This should result in achieving V_2 at about 35 feet. After gear retraction is initiated, continue rotation to the pitch attitude for climb. This procedure should prevent the tailskid from contacting the runway.

CAUTION

UPON REACHING V_R, EACH ONE-SECOND DELAY IN ROTATION OR LIFTOFF WILL USE APPROXIMATELY 200 ADDITIONAL FEET OF RUNWAY.

INITIAL CLIMB

With a positive rate of climb indicated by the IVSI and electric altimeter, the PNF will call, "Positive Rate." The PF will confirm a positive rate of climb and call, "Gear Up."

CAUTION

DO NOT APPLY BRAKES AFTER TAKEOFF AS THIS COULD RESULT IN DAMAGE TO TIRE AND WHEEL ASSEMBLIES. BRAKING AT REDUCED PRESSURE IS AUTOMATICALLY APPLIED WHEN THE LANDING GEAR LEVER IS PLACED IN THE 'UP' POSITION.

Increase pitch to maintain V_2 +10 (20 degrees of pitch maximum). Under certain conditions, (light gross weights, cold ambient temperatures, etc.) airspeed may continue to increase even with 20 degrees of pitch. If this situation occurs, maintain 20 degrees of pitch and accept the higher airspeed.

During initial climb, the Second Officer will continue to monitor forward engine instruments, hydraulic indications, and annunciator panels. After landing gear retraction, he will check for tailskid retraction, gear and gear door lights extinguished, and landing gear handle in the OFF position.

Obstruction clearance, special noise abatement, or departure procedures may require an immediate turn after takeoff. Initiate the turn at the appropriate altitude, but do not exceed 15 degrees of bank until V_2+10 has been attained. Climb performance is slightly reduced while turning, but this is accounted for in the airport analysis.

NOTE

Boeing Company procedures state that, for a flaps 5° takeoff, maximum maneuvering capability (30 degrees of bank) is available at an airspeed of V_2+10. This speed will be less than the FEC flaps 5° MMS.