

NORMAL OPERATING PROCEDURES

DESCENT - IN RANGE - NOTES CTD

- 70/ Radar is to be turned off prior to landing, and not used on the ground while at the ramp or when in close proximity to other airplanes, metal objects, fuel trucks, etc. As an added safety precaution, prior to putting RADAR function to OFF position, the radar antenna TILT control should be positioned to the full "up tilt" position, to minimize possibility of harmful radiation in event radar inadvertently turned on in close proximity to persons, other airplanes, fuel trucks, etc.
- 71/ Landing weight should be determined by subtracting weight of fuel used from take-off weight, in order to determine appropriate approach air speed. Flight Engineer will compute landing weight and fuel remaining in tanks, enter these on a slip of paper and give it to the Captain.
- 72/ Captain, being advised of landing weight, will determine landing speed (over the fence speed), by inspection of chart placarded in ceiling over his head.
- 73/ The Captain should check that the anti-icing and de-icing panels are as desired, remembering that airfoil de-icers, if ON during a missed approach may cause a drain of as much as 32% of the power available. Engine and prop de- and anti-icers being ON at such a time will not cause an appreciable loss of power.
- 74/ When using the auto pilot, the Captain or Pilot must be in his seat with safety belt fastened so that if the auto pilot malfunctions, he can regain control of the airplane immediately.

Auto pilot may be used through a coupled approach. At break-out, or on reaching minimum altitude, disconnect the auto pilot by depressing the switch on the outboard horn of the control wheel and land or execute a missed approach procedure.

BEFORE LANDING - FINAL - NOTES

- 75/ The NO SMOKING sign should be turned on in sufficient time to allow passengers who may be smoking to extinguish their cigarettes, and for flight attendants to take their seats, but in no case later than beginning of Final Approach.
- 76/ Landing gear should be extended, and position checked by indicating lights. Each green light will indicate that its respective gear is properly positioned. Hydraulic system pressure, after gear extension, should be approximately 3000 PSI. Maximum speed for extending gear, 190 knots.

AFTER LANDING - NOTES

- 77/ **CAUTION:** ENGINE DECOUPLING MAY OCCUR IF THE THROTTLE IS MOVED BELOW FLIGHT IDLE ON THE GROUND AT SPEEDS OF 130 KNOTS OR MORE. IF A REVERSE SETTING IS USED, IT SHOULD BE INITIATED AT AS HIGH A GROUND SPEED AS PRACTICABLE (BELOW 130 KNOTS) TO DERIVE THE GREATEST BRAKING EFFECT.
- 78/ Oil coolers should be set to keep the oil at desired temperature while on the ground, remembering that if it is quite hot oil cooler switches should be held to OPEN position for 10 to 15 seconds after oil cooler flaps reach OPEN position, to cause inducers to open for proper oil cooler air flow on ground.

NORMAL OPERATING PROCEDURES

CAPTAIN	PILOT	ENGINEER
AFTER LANDING CTD		
79/RPM SWITCHES.....LOW		
	80/FLAPS.....UP	
		FUEL PUMPS.....OFF
	81/AC HYD. PUMP SYS. #2.....OFF	
PITOT HEATERS.....OFF		
WINDSHIELD & AIRFOIL HEAT...OFF		
ANTI-COLLISION LIGHT.....OFF		FIRE WARNING.....CHECKED (TERMINAL STATION)
LANDING LIGHTS.....AS REQD.		
82/THROTTLES.....START POSITION		
83/NTS ON SHUT-DOWN.....CKD.		83/NTS ON SHUT-DOWN.....CKD.

NORMAL OPERATING PROCEDURES

AFTER LANDING - NOTES CTD

79/ RPM switches will not be downshifted while propellers are in reverse pitch or until after the airplane has cleared the active runway. As there is a possibility of an overtemp, with consequent engine damage in the event the 5th and 10th stage bleeds do not open during a downshift; the Captain, before downshifting, will advise the Engineer in a clear voice, "Downshifting #4". The Engineer will closely watch #4 T.I.T. and RPM thereafter to detect a possible overtemp. (If any engine overtemps above 877°C, on the downshift, he will advise the Captain and cut the fuel and ignition switch of that engine.) After #4 has stabilized at approximately 10,000 RPM, he will check the voltage output of the #4 generator, and advise the Captain, "#4 voltage OK" (115V). The Captain will then downshift engines 1, 2 and 3 to LOW RPM and the F/E will monitor their T.I.T. and RPM to guard against overtemps. After they have downshifted, he will note the generator advisory lights to see that bus loads have shifted to #4 generator.

80/ Because of vibrational characteristics, and possible resultant damage, flaps will not be retracted from the full down position until after propellers have been brought out of reverse thrust.

When landing on runways covered with snow and slush, extra care must be taken to prevent damage to wing flaps. If it is suspected that there is slush or ice on flaps which could damage structure when flaps are retracted, airplane should be taxied to ramp with flaps raised only to TAKE-OFF position for visual inspection before fully retracting flaps.

81/ Pump #2, or "Spare" turned off while airplane on ground to reduce electrical load on No. 4 generator when engines not operated at LOW GROUND IDLE RPM.

82/ This puts propellers at the minimum torque blade angle, in preparation for restarting engines.

83/ Captain will hold NTS Check Switch to 1 & 4 position while Engineer cuts #1 Fuel and Ignition Switch. Captain will note NTS light, and both will carefully watch T.I.T. and RPM as they decrease. Captain will hold NTS Check Switch to 2 & 3 while Engineer cuts Fuel & Ignition Switches on these two engines, Captain noting NTS lights and both carefully watching T.I.T.'s and RPM's as they die down. After Engines 1 and 2 have come to a complete stop the Captain will turn off the seat belt sign as a signal to the flight attendant for the latter to open the door and let down the steps. #4 will be handled in a similar manner after door has been opened or ground power has been plugged in. #4 is held till last as it is source of electrical energy for lights, etc., until ground power is available.

There is more danger of overheat damage during shut-down than at any other time. Should the electrical fuel shut-off not be complete, or should a Fuel & Ignition Switch be inadvertently turned back on after having been cut, the fuel may ignite in the turbine section, not giving an overtemp. indication, but causing the engine to keep rotating rather than coasting to a stop. As the fire is aft of the T.I.T. thermocouples, T.I.T. will not appear unusually high, but it, together with the RPM, will not decay at the usual rate.

In such an event, cut the engine with the Emergency Handle and call for maintenance. It will be noted in the airplane log that the required NTS check was accomplished, with a remark as to whether or not the check was satisfactory.

NORMAL OPERATING PROCEDURES

CAPTAIN	PILOT	ENGINEER
SECURING		
<u>84</u> /PARK. BRAKES.....SET		
	AC HYD. PUMPS.....OFF	
	HYD. COOLING SW.....OFF	
POSITION LIGHTS.....AS REQD.		
	<u>85</u> /RADIO SWITCHES.....OFF	
	INVERTER.....OFF	
	<u>86</u> /EXT. POWER SW.....ON	
	<u>87</u> /BATTERY SEL. SW....AS REQD.	
<u>88</u> /AIR COND. SWS.....AS REQD.		AIR COND. SWS.....AS REQD.

NORMAL OPERATING PROCEDURES

SECURING - NOTES

84/ Many instances have been experienced in taxiing with the Electra in which the plane started backing up without knowledge of the flight crew. This was caused by the extreme twist of the blade which, at very low blade angles, give a reverse thrust. IT IS EXTREMELY IMPORTANT THAT THE CAPTAIN SET THE PARKING BRAKES AT ANY TIME ON THE GROUND WHEN HE DESIRES THE PLANE NOT TO BE IN MOTION. CARELESSNESS IN THIS RESPECT MAY RESULT IN INADVERTENTLY BACKING INTO ANOTHER PLANE OR SOME OTHER OBJECT.

85/ Radio Master Switches (NONESSENTIAL LOAD RADIO BUS-1 and RADIO BUS-2), plus ADF Function Switches and HF-1/HF-2 switch, should be put to OFF position.

86/87/ Ground operations will normally plug in an AC External Power source at originating and intermediate stations, but will plug in a DC External Power source at terminating stations; however, a DC External Power source may, for some reason, be used when the crew is anticipating an AC power plug in. The table following shows how the flight deck crew can determine which kind of power source is plugged in, and how the External Power and Battery Selector Switches should be used.

<u>POWER SOURCE BEING USED</u>	<u>INDICATION</u>	<u>EXTERNAL POWER SWITCH</u>	<u>BATTERY SELECTOR SWITCH</u>
<u>86/</u> AC EXTERNAL POWER	CONN LITE ON. POWER LITE ON.	ON	GROUND
<u>87/</u> DC EXTERNAL POWER	DC RAMP POWER LITE ON. CONN & POWER LITES OFF.	ON OR OFF	ON

88/ Captain sets air conditioning panel overhead, the Flight Engineer sets panel above radio rack.