CRUISE POWER SCHEDUE 1500 BHP/ENG

1 April 1957

MIXTURE : AUTO-RICH

PRESSURE ALTITUDE	MANIFOLD PRESSURE / CARBURETOR AIR TEMPERATURE						BLOWER	RPM	TOP (PSI)	MIN FUEL FLOW (PPH)	DES FUEL FLOW (PPH)
	-10°C	0°C	+10°C	+20°C	+30°C	+38°C					
12,000	37.9	42.2	42.9	43.5			HIGH	2400	90	1040	1045
10,000	38.1	38.8	39.5	43.7							
8,000	38.4	39.0	39.8	40.5	41.2						
6,000	38.7	39.5	40.2	40.9	41.6						
4,000	39.1	39.8	40.5	41.3	41.9		LOW	2400	99	980	1030
2,000	39.5	40.2	40.9	41.6	42.7						
Sea Level	39.9	40.6	41.4	42.1	42.7						

CRUISE POWER SCHEDULE 1600 BHP/ENG

1 April 1957

MIXTURE : AUTO-RICH

PRESSURE ALTITUDE	MANIFOLD PRESSURE / CARBURETOR AIR TEMPERATURE						BLOWER	RPM	TOP (PSI)	MIN FUEL FLOW (PPH)	DES FUEL FLOW (PPH)
	-10°C	0°C	+10°C	+20°C	+30°C	+38°C					
12,000	40.3	45.4	46.2				HIGH	2500	101	1210	1230
10,000	40.5	41.2	42.0								
8,000	40.8	41.5	42.3	43.0							
6,000	41.0	41.8	42.6	43.3							
4,000	41.4	42.2	42.9	43.7			LOW	2500	101	1110	1170
2,000	41.9	42.7	43.4	44.2							
Sea Level	42.4	43.2	44.0	44.7							

1 April 1957

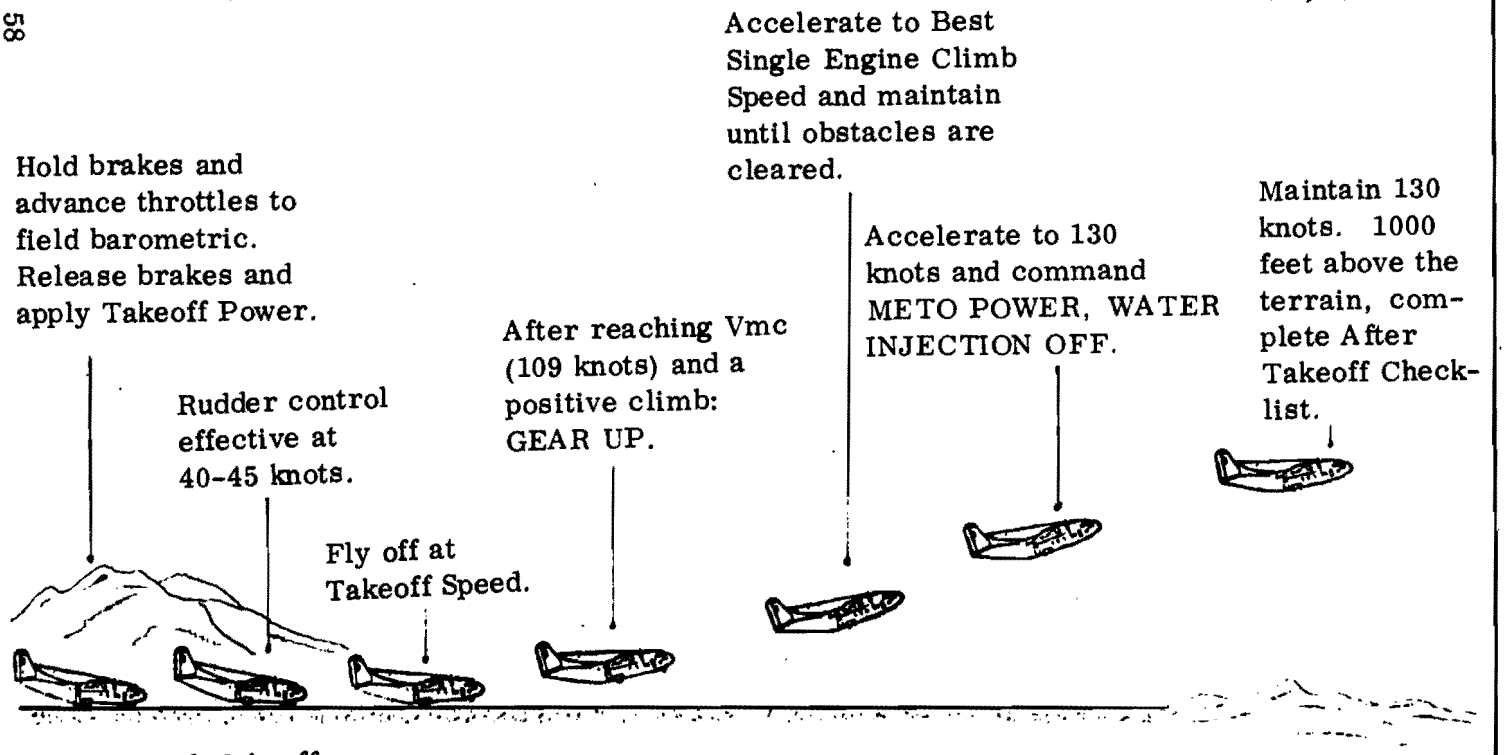
CRUISE POWER SCHEDULE 1700 BHP/ENG

MIXTURE : AUTO-RICH

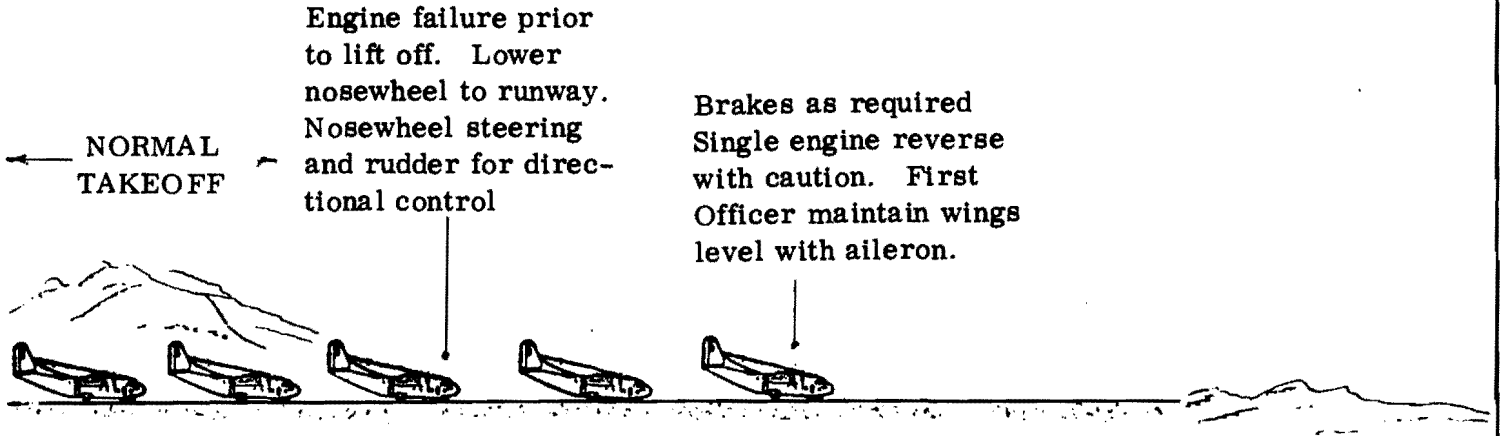
PRESSURE ALTITUDE	MANIFOLD PRESSURE CARBURETOR AIR TEMPERATURE						BLOWER	RPM	TOP (PSI)	MIN FUEL FLOW (PPH)	DES FUEL FLOW (PPH)
	-10°C	0°C	+10°C	+20°C	+30°C	+38°C					
12,000	43.2	43.6	F.T.	F.T.							
10,000	43.3	43.8	44.7	45.3							
8,000	43.4	44.2	44.9	45.7							
6,000	43.6	44.5	45.2	46.0							
4,000	43.8	44.7	45.4	46.2			LOW	2500	108	1220	1270
2,000	44.1	44.9	45.8	46.5							
Sea Level	44.5	45.3	46.2	46.9							

STANDARDS CRITERIA

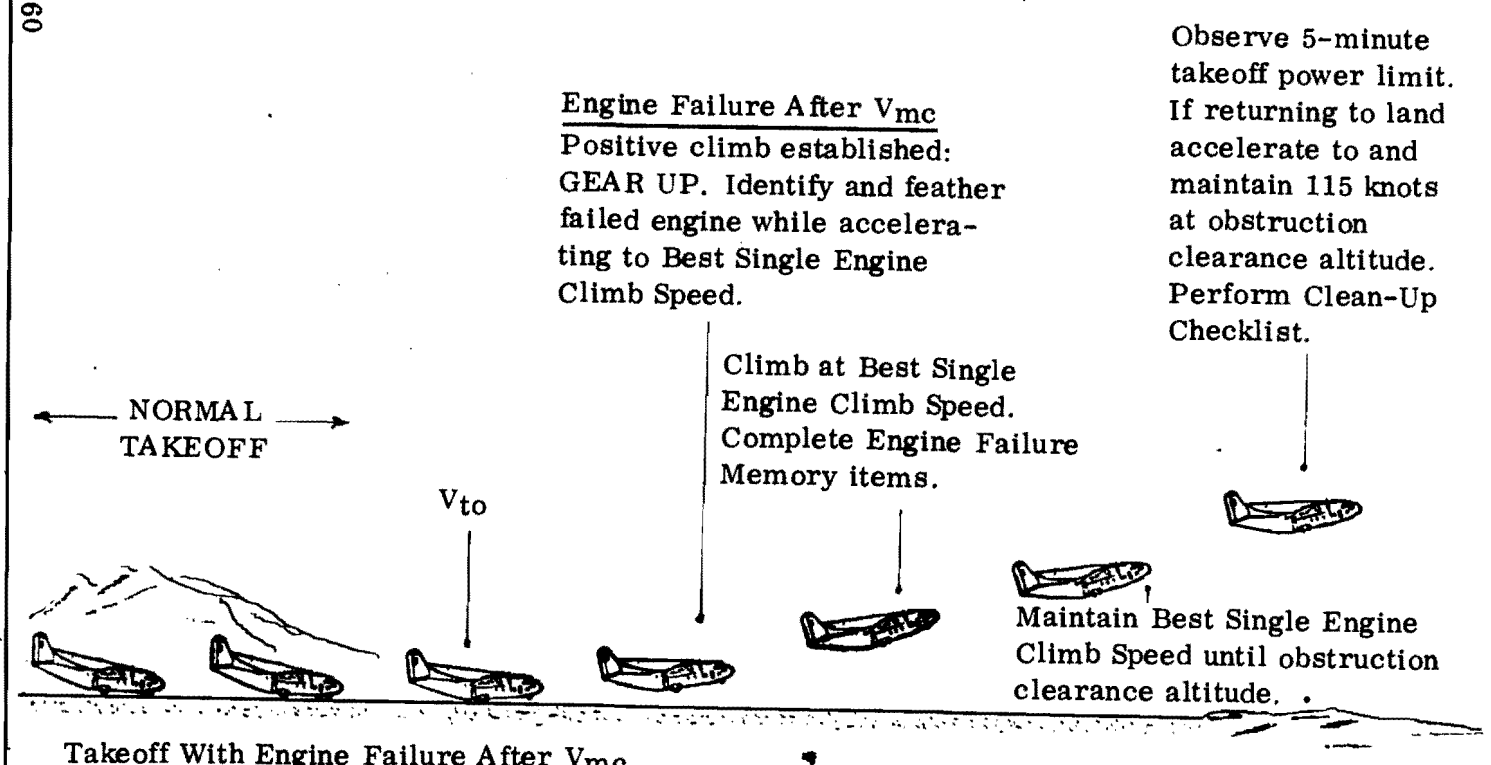
Steep Turns	Angle of bank	± 10°
	Airspeed	± 10 Kts.
	Altitude	± 100 Ft.
	Roll out	± 10°
Slow Flight	Airspeed	± 5 Kts.
	Altitude	± 50 Ft.
	Heading	± 5°
Approach to Stalls	Altitude	± 50 Ft.
		± 100 Ft.
	Heading	± 5°
Normal Turns and Holding	Angle of bank	± 5°
	Airspeed	± 5 Kts.
	Altitude	± 50 Ft.
Level Flight	Altitude	± 50 Ft.
	Heading	± 5°
Tracking	Altitude	± 50 Ft.
	Track	± 5°
	Localizer	± 2°
Instrument approaches (including rapid descent and pull up)	Airspeed	+ 5 Kts.
	Glide path	Within 50 Ft.
	Altitude	± 50 Ft.
	(except at minimum:	+ 50 - 0 Ft.)



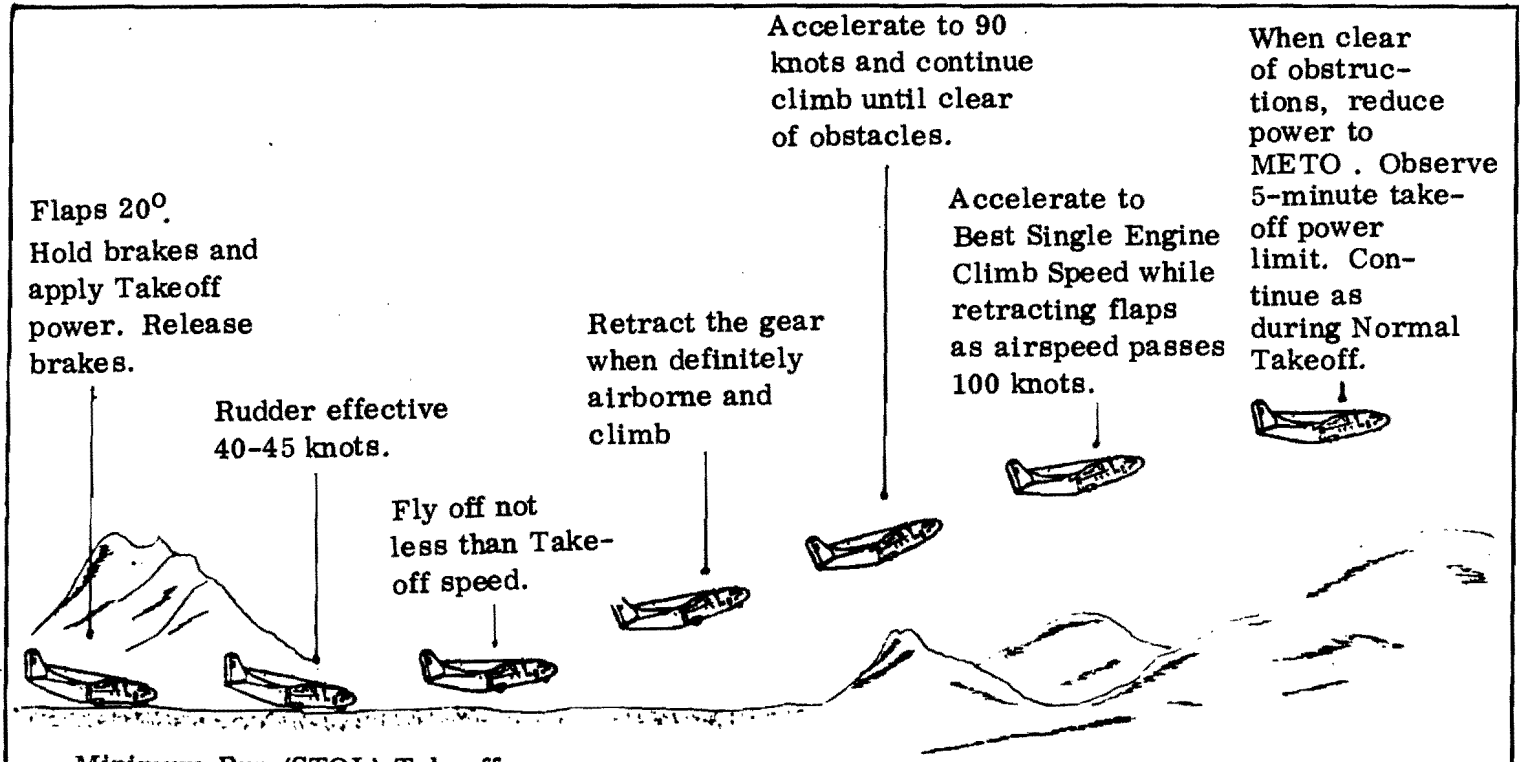
Normal Takeoff



Rejected Takeoff



Takeoff With Engine Failure After V_{mc}



Minimum Run (STOL) Takeoff

CLIMB AND CLIMBING TURNS

RPM : 2600
AIRSPEED : 130 Knots
MAP : 51.5 (1900 BHP) or
2400 RPM, 42.0 MAP
(1500 BHP)

STEEP TURNS

RPM : 2100
AIRSPEED : 130 Knots
MAP : 27-31 (34 Maximum)

APPROACHES TO STALL

See diagram. Note: It is not necessary to complete the Pre-Landing Checklist prior to performing this maneuver; however, to avoid possible fuel starvation turn boost pumps to LOW.

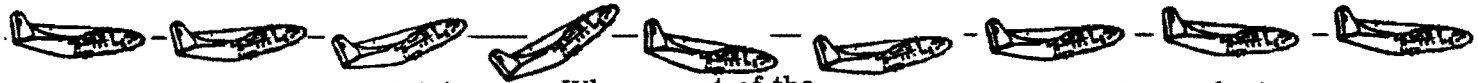
APPROXIMATE STALL SPEEDS - IAS

Weight	Flaps 0	20	40	60
54,000	89	84	75	NO
50,000	85	81	73	C
46,000	82	78	70	H
42,000	79	75	67	A
40,000	77	73	66	N
				G
				E

SLOW FLIGHT

RPM : 2400
AIRSPEED : 95 Knots
MAP : Clean - 25
Gear Down - 26
Flaps 20 - 29
Flaps 45 - 38

Takeoff Configuration



RPM 2400, MAP 12
Flaps up, Gear up.

Maintain heading and altitude.

When onset of the initial buffet is felt, lower nose to the horizon, level the wings, and simultaneously command MAX POWER.

Regain any lost altitude while accelerating.

Accelerate to 100 Knots.

Approach Configuration

RPM 2400, MAP 12, Flaps 20, Gear down.

Maintain heading and altitude.

When onset of the initial buffet is felt, lower nose to the horizon, level the wings, and simultaneously command MAX. POWER.

Regain any lost altitude while accelerating.

Positive rate of climb, GEAR UP

Accelerate to 100 knots and retract flaps.

Landing Configuration

RPM 2400, MAP 12,
Flaps 45°, Gear Down.

Positive rate of climb, GEAR UP.

Accelerate to 100 knots and retract flaps.

Maintain heading and altitude

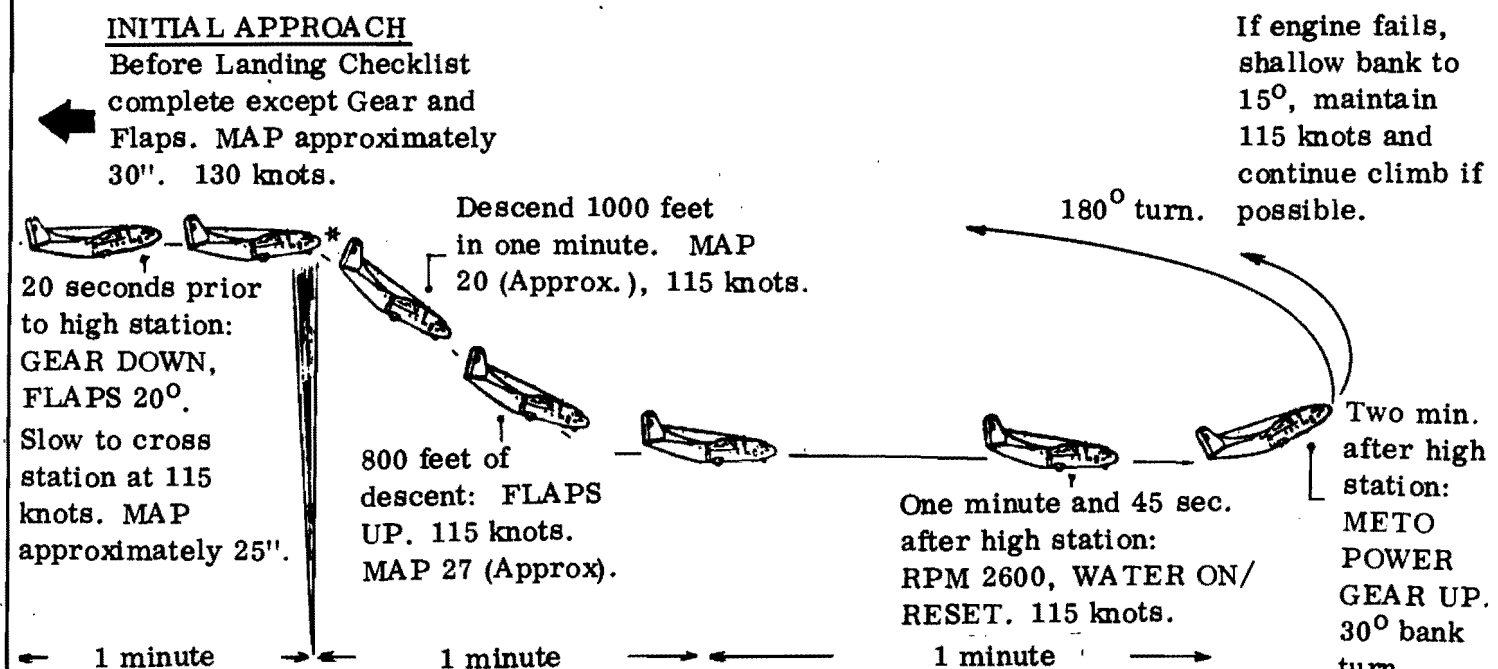
When onset of the initial buffet is felt, lower nose to the horizon, simultaneously command MAX POWER and while accelerating, retract flaps to 20°.

Regain any lost altitude while accelerating.

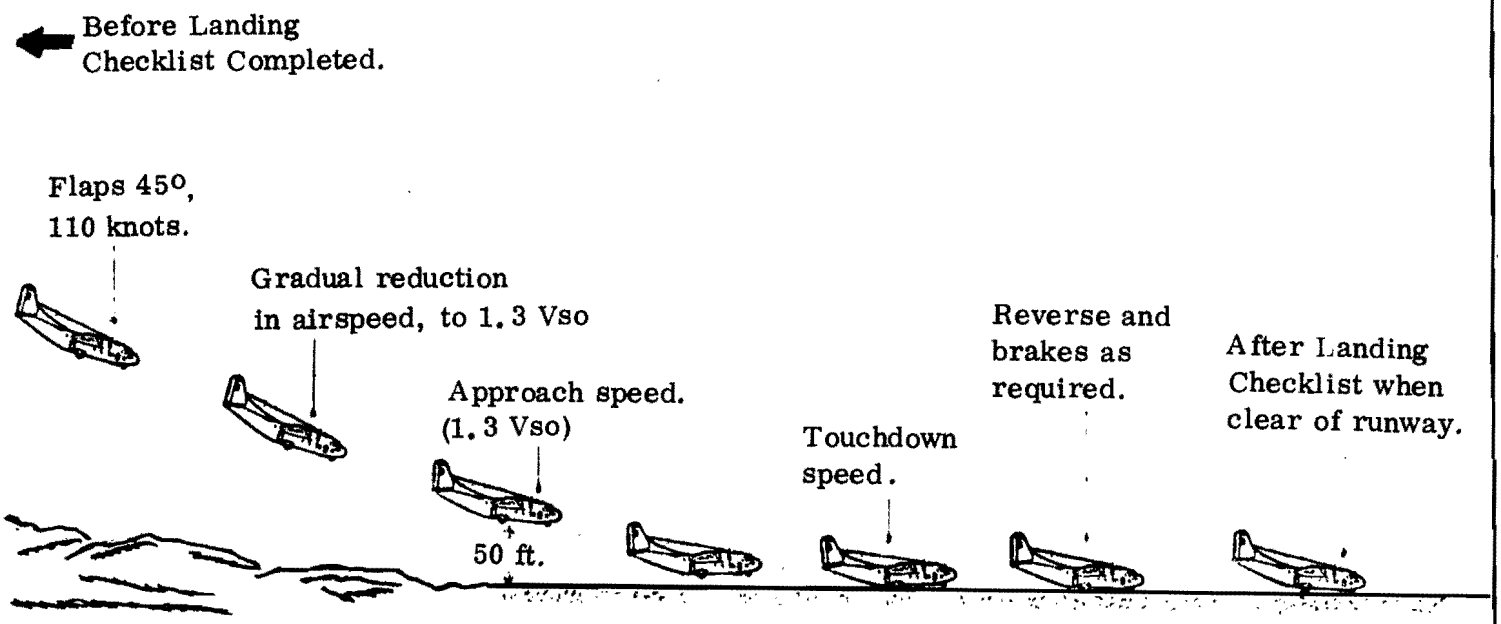
NOTE: For stall recovery 1500 BHP will be used during training; however, if a full stall is encountered the pilot will use maximum power for recovery.

Approaches to Stall

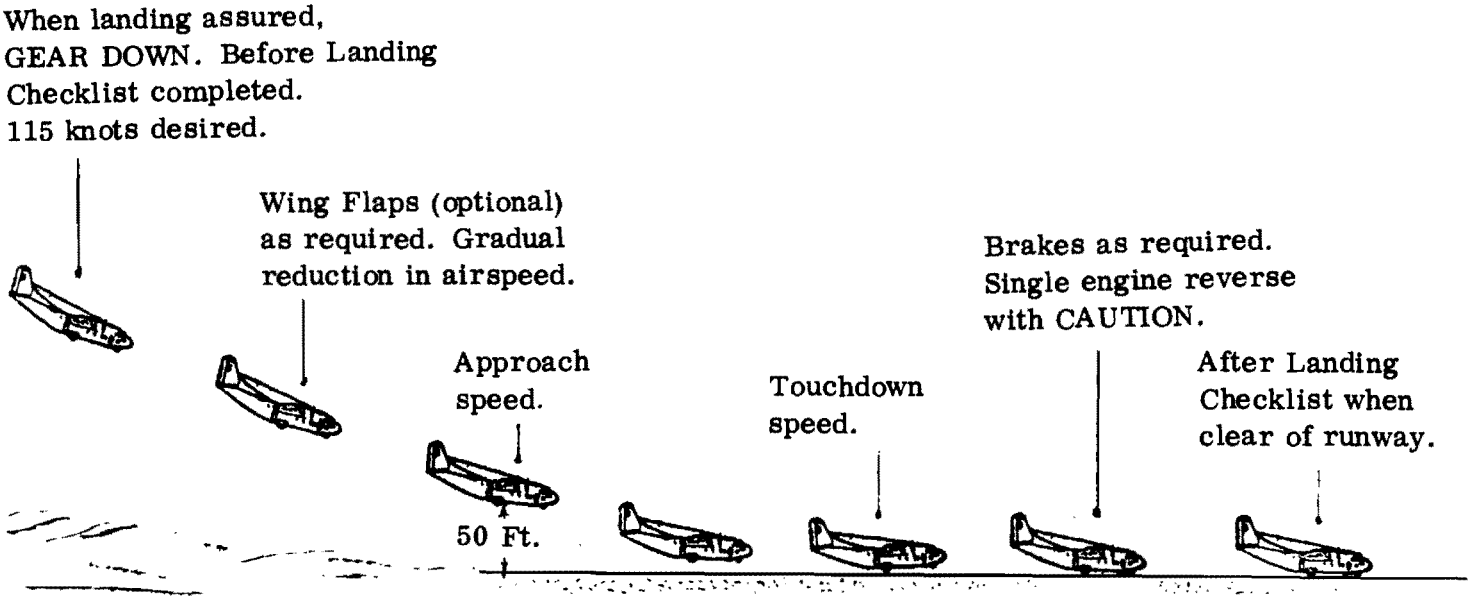
* Instructor/Check pilot will assign time for simulated high station passage.



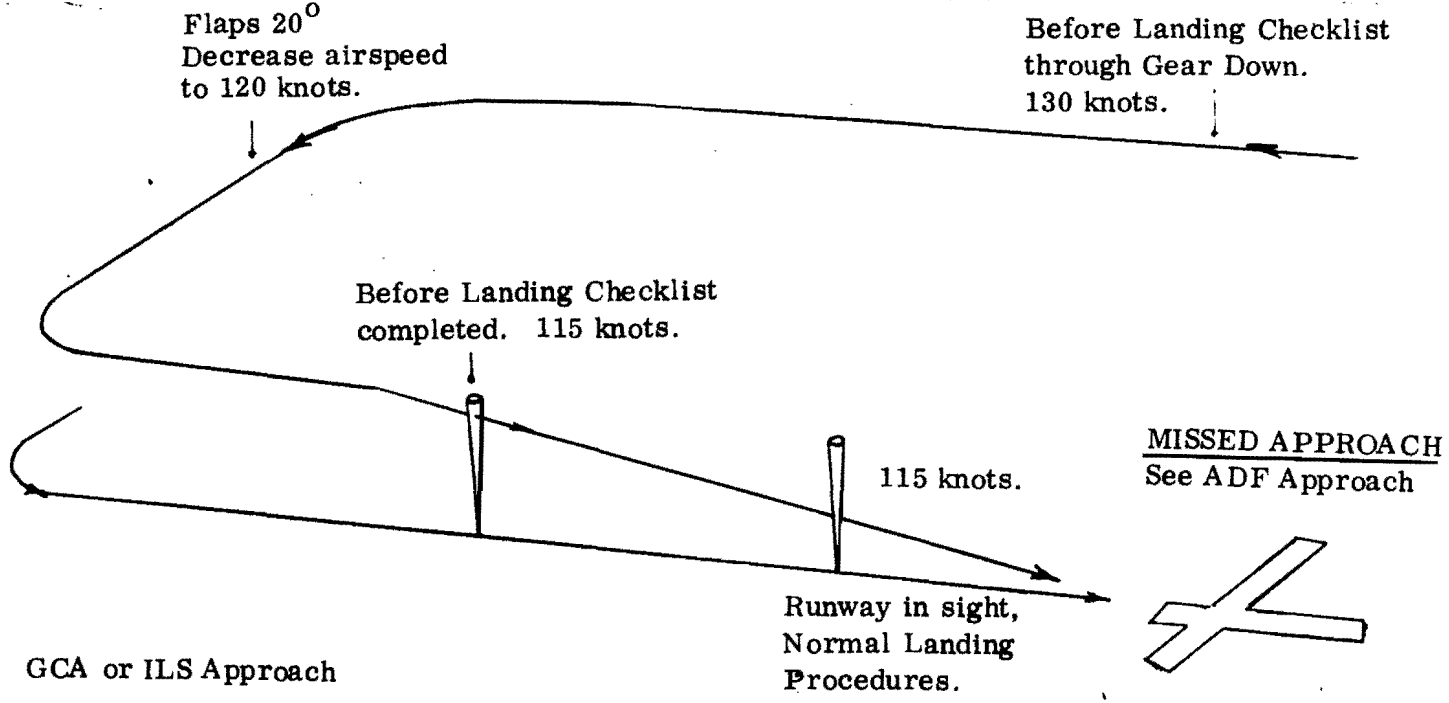
Rapid Descent and Pull Up (Canyon Approach)

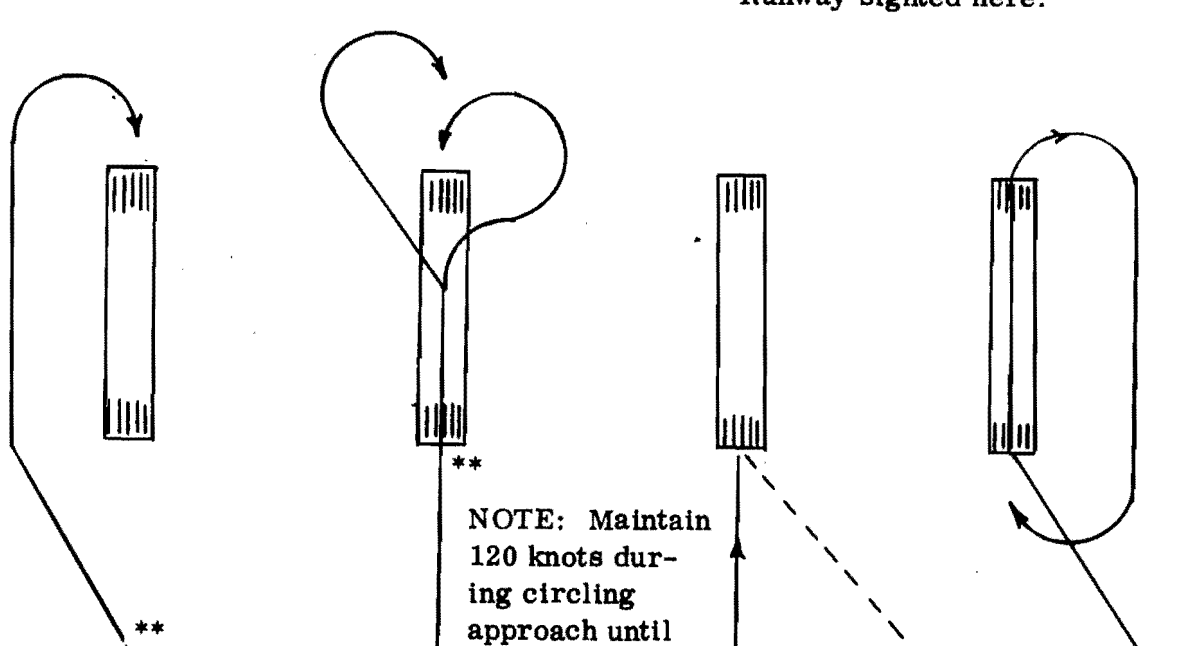


Normal Landing (Final approach segment)



Single Engine Landing (Final Approach)


Flaps 20°
Decrease airspeed
to 120 knots.
Before Landing Checklist
through Gear Down.
130 knots.
Before Landing Checklist
completed. 115 knots.
115 knots.
MISSED APPROACH
See ADF Approach
Runway in sight,
Normal Landing
Procedures.
GCA or ILS Approach



73 Circling Approaches

3 December 1968

LIMITATIONS

Powerplant:

BHP	RPM	MP	LIMITATION
2500 WET	2800	62	5 Minutes
2300 DRY	2800	63	5 Minutes
1900 DRY	2600	51.5	Maximum Continuous

RPM:

Takeoff	2800
High Pitch	1100 - 1300
Ignition Check	2200 ± 50
Max RPM Drop	100
Max Differential	40
Idle	650 ± 25
Minimum	1400
Auto or Manual Lean	1400 - 2300
Auto Rich Required Above	2300
Overspeed	
Inspection required	3100 - 3350
Engine change required over	3350

Manifold Pressure

Auto or Manual Lean Permitted (Except 1300 BHP)	14.0 - 38.5
Auto Rich Required Above	38.5

Starter

One minute ON, one Minute OFF.

Torque Pressure

Maximum WET (5 minutes)	141
Maximum DRY (5 minutes)	130
Maximum Continuous	115.5
Auto or Manual Lean Permitted	50 - 87
Auto Rich Required	Above 87.

Center of Gravity

Takeoff	20.6% - 32.0%
In Flight	18.0% - 32.0%
Landing:	
Gross Wt. Less Than 51,350	18.0% - 32.0%
51,350 - 54000	20.1% - 32.0%

Weight Limits (Company)

Takeoff	54,000	
Landing (20.1%-32.0% C.G.)	54,000	660 FPM contact Sink rate
Landing (18.0%-32.0% C.G.)	51,350	660 FPM Contact Sink rate
Zero Fuel Weight	None	
Basic Operating	34,500 (Approximate.)	

Flight Load Acceleration Limits - 3.0G

Fluid Servicing

			Fully Serviced Gallons	Pounds
Fuel: (115/145)	Nacelle	LH	728.5	4371
		RH	728.5	4371
			Usable (2° Nose Up)	
			Gallons	Pounds
		LH	724	4344
		RH	724	4344
			Fully Serviced	
			Gallons	Pounds
	Drop	LH	441	2646
		RH	441	2646
			Usable (2° Nose Up)	
			Gallons	Pounds
		LH	436	2616
		RH	436	2616

		Fully Serviced Gallons	Pounds
Engine Oil: (MIL-L6082, Grade 1100, or MIL-L-22851)	LH	40	300
	RH	40	300

	Normal Service Gallons	Pounds
LH	40	262.5
RH	40	262.5

Hydraulic Oil: (MIL-H-5606) Reservoir Capacity 3.0 gal. Total system capacity 11.5 gal.

APP Oil: (MIL-L-8383)

Propeller Oil: (60% MIL-H-5606) (40% MIL-H-6083 Type 1) System capacity 3.3 gal.

Aileron Deicing Pressure

Minimum	13 PSI
Automatic Range	15-26 PSI
Maximum	28 PSI

Air Speed (Maximum)

Jettisoning Nacelle Tank	115 Knots
Jettisoning Ext-Drop Tank	120 Knots
Cargo Door or Ramp Operation	130 Knots
Extending Wing Flaps	132 Knots
Extending Landing Gear	135 Knots
Use Windshield Wipers	140 Knots
Never Exceed	245 Knots

Air Brake Pressure

Normal Range	1600 - 2000 PSI
Maximum	2000 PSI

Anti-Icing Air Temperature	
Minimum	76°C
Normal	76°C - 150°C
Overheat	150°C
Brake Accumulator	
Preload	600 PSI
Minimum for Braking	850 PSI
Normal Range	1350–1600 PSI
Maximum	1750 PSI
Carburetor Air Temperature	
Danger of Icing	-10°C to +15°C
Normal Operation	+15°C to +38°C
Maximum with Heat	+38°C
Cylinder Head Temperature	
Auto or Manual Lean Permitted	150°C-232°C
Desired	200°C
Auto Rich Required	Above 232°C
Maximum Permitted	260°C
De-Icing Ammeter	
Normal	0.65 - 0.85
Fuel Pressure	
Minimum	21 PSI
Normal	21-23 PSI
Maximum	38 PSI
High Boost Range:	
High Pressure Pump	26-38 PSI
Low Pressure Pump	20-27.5 PSI

Hydraulic Pressure

Minimum	1350 PSI
Normal Range	1350-1600 PSI
Maximum	1750 PSI
Accumulator Preload	1000 PSI

Oil Pressure

Minimum at 1400 RPM	50 PSI
Normal Operation	60-100 PSI
Maximum	110 PSI

Oil Temperature

Minimum for Flight	40°C
Normal Operation	60°C - 75°C
Desired	70°C
Maximum	100°C
Permitted During Climb	100°C

C123K SPECIAL LIMITATIONS

Jet Powerplant Systems

Fuel Flow

Minimum Idle	350 PPH
Normal Operation	550-3000 PPH

Fuel Pressure (Normal) 10 - 50 PSI

Tachometer

Maximum Power (100%)	30 min.
Normal Continuous	46-97.9%
Overspeeds (Report to maintenance)	
a. 106.7% or more	10 seconds
b. 104%	Steady State

C123K LIMITATIONS (Cont'd)

Oil Pressure

Minimum Idle	5 PSI
Minimum Takeoff	25 PSI
Normal	25-50 PSI
Maximum continuous	60 PSI

(May be exceeded for 5 min. just after start, but not over 185 PSI)

Exhaust Gas Temperature

Normal	400° - 676°C
Maximum (30 Min. Limit)	692°C
Maximum for Start	900°C for one sec.
Maximum for Start	704°C for 60 sec.

Air Inlet Door Actuator

10 min. between complete cycle

Weight Limits

Take off	60000 lbs
Landing (Normal sink rate)	60000 lbs
Basic Operating (Approximate)	37500 lbs

Braking

After Maximum Braking at high gross weights airborne cooling of the brakes must be at least 15 min. (Gear extended) or 30 min. on the ground.

C-123 Minimum Equipment GO/NO-GO List

ITEM	EQUIPMENT	NUMBER INSTALLED	MINIMUM OPERATIONAL REQUIRED FOR FLIGHT TO MAINTENANCE BASE
1.	ADI SYSTEMS		
1.	ADI System	2	0 - Reduce weights in accordance with aircraft flight manual performance data.
2.	ADI Pressure Warning Lights	2	0 - Not required if an ADI take-off is to be made and both ADI systems are operating as indicated by engine torque meters.
	ANTI-ICING, DE-ICING		
1.	Windshield Heat Control	1	0 - Not required if icing conditions are not anticipated.
2.	Propeller De-Icing	2	0 - Not required if icing conditions are not anticipated.

ITEM	EQUIPMENT	NUMBER INSTALLED	MINIMUM OPERATING REQUIRED FOR FLIGHT TO MAINTENANCE BASE
3.	Wing and Tail Anti-Icing	1	0 - Not required if icing conditions are not anticipated.
4.	Heater Ground Blower	1	0 - Required only if icing conditions are anticipated on take-off.
	MISCELLANEOUS EQUIPMENT		
1.	Windshield Wiper	2	1 - Required. Captain's must be working.
2.	Emergency Air Brake System	1	1 - Required.
3.	Auxiliary Hydraulic Pump	1	0 - Not required.
4.	Flap Position Indicator	1	0 - Not required.

ITEM	REQUIRED	NUMBER INSTALLED	MINIMUM OPERATIONAL REQUIRED FOR FLIGHT TO MAINTENANCE BASE
5.	Landing Gear Position Indicators	3	0 - Not required provided that the audible warning system is operative and pins installed.
6.	First Aid Kit	1	1 - Required.
7.	Oxygen System	0	
8.	Landing Gear Up-Lock System	3	3 - Required - one time ferry flight authorized.
9.	Safety Belts	-	- - Required. One for each person aboard.
10.	Portable Oxygen Bottle	0	

ITEM	EQUIPMENT	NUMBER INSTALLED	MINIMUM OPERATIONAL REQUIRED FOR FLIGHT TO MAINTENANCE BASE
11.	Fire Detector System, Each Engine	2 (Loop)	1 - Loop required, for each engine.
12.	Fire Detector System, APU	1	1 - Required if APU is being used.
13.	Fire Extinguisher, Portable	3	1 - One required (CB).
14.	Fire Extinguisher, Each Engine	1	1 - Required. Must be fully charged.
	ELECTRICAL		
1.	Spare Fuses	-	- - Required. One spare set of fuses of 3 spare fuses of each kind required.
2.	Instrument Lights	-	- - Required, for night flights only.

ITEM	EQUIPMENT	NUMBER INSTALLED	MINIMUM OPERATING REQUIRED FOR FLIGHT TO MAINTENANCE BASE
3	Position Lights	3	- Required for night flights only.
4	Anti-Collision Beacon	1	0 -
5	Landing Lights	2	1 - One required, for all night flights.
6	3-Phase Inverter	3	2 - Required. (Flight may be made with either co-pilot's or spare inoperative.
7	Single Phase Inverter	2	1 - One required. Must be repaired on over-night service.
8.	Engine Driven Generator	2	1 - One required, if APP operable.
9.	Inverter Power Warning Lights	-	- Required, for single and three phase inverter system.

ITEM	EQUIPMENT	NUMBER INSTALLED	MINIMUM OPERATIONAL REQUIRED FOR FLIGHT TO MAINTENANCE BASE
10.	Door Warning System	1	0 - Not required, provided crew member functionally checks each door and the cargo ramp pins.
11.	Pitot Heater	2	2 - Required, if flight is to be conducted under IFR conditions at any time.
12.	Voltmeters, DC	1	1 - Required.
13.	Ammeter, DC	3	3 - Required. For engine driven generator and for APP if being used.
14.	Fuel Boost Pumps	2	2 - Required.
15.	Battery	1	1 - Required.

ITEM	EQUIPMENT	NUMBER INSTALLED	MINIMUM OPERATIONAL REQUIRED FOR FLIGHT TO MAINTENANCE BASE
	FUEL, OIL, HYDRAULIC		
1.	Fuel Quantity Indicators	2	2 - Two required. One time ferry flight authorized if one operable, provided crossfeed system functioning.
2.	Hydraulic Pressure Indicator	2	1 - Required.
	ENGINE SECTION		
1.	Cowl Flaps	2	2 - Required. Must be operative.
2.	Oil Cooler Door Control	2	2 - Required. Must be operative in manual. auto not required.
3.	Hydraulic Pump, Engine	2	1 - Required, providing Aux Hydraulic pump is operable.

ITEM	EQUIPMENT	NUMBER INSTALLED	MINIMUM OPERATIONAL REQUIRED FOR FLIGHT TO MAINTENANCE BASE
4.	Engine Blower Actuator	2	0 - Not required, unless high blower operation anticipated.
5.	Fire wall Shutoff	2	2 - Required, all must be operative.
	ENGINE INSTRUMENTS		
1.	Tachometer	2	1 - One required, providing that manifold pressure and TOP gauges for the engine on which the tachometer is inoperative are operating normally.
2.	TOP Indicator	2	0 - Not required, provided manifold pressure gauge and tachometer are indicating properly.

ITEM	EQUIPMENT	NUMBER INSTALLED	MINIMUM OPERATIONAL REQUIRED FOR FLIGHT TO MAINTENANCE BASE
3.	Oil Pressure Indicator	2	2 - Two required.
4.	Manifold Pressure Indicator	2	2 - Two Required.
5.	Oil Temperature Indicator	2	2 - Two required.
6.	Cylinder Head Temp. Indicator	2	2 - Two required, one may be inoperative if oil temperature indicator operative on same engine.
7.	Fuel Pressure Indicator	2	2 - Two required.
8.	Carburetor Air Temperature Indicator	2	2 - Two required. One may be inoperative if cylinder head and oil temperature indicator operative on same engine.

ITEM	EQUIPMENT	NUMBER INSTALLED	MINIMUM OPERATIONAL REQUIRED FOR FLIGHT TO MAINTENANCE BASE
	FLIGHT INSTRUMENTS		
1.	Airspeed Indicator	2	1 - One required, VFR
2.	Altimeter	2	1 - One required, VFR
3.	Magnetic Compass	1	1 - Required.
4.	Turn and Bank Indicator	2	1 - One required, IFR, Captain's Instrument
5.	Rate of Climb Indicator	2	1 - One required, nite and IFR.
6.	Clock with Sweep Second Hand	2	1 - One required, IFR
7.	Gyro Compass	2	1 - One required, IFR
8.	Attitude Indicator	2	1 - One required, IFR

ITEM	EQUIPMENT	NUMBER INSTALLED	MINIMUM OPERATIONAL REQUIRED FOR FLIGHT TO MAINTENANCE BASE
	COMMUNICATIONS AND RADIO NAVIGATION EQUIPMENT		
1.	ADF, VOR, or TACAN	-	- - Required (as suitable to ground facilities enroute.)
2.	Marker Beacon Receiver	1	0 - NOT required.
3.	VHF Transmitter and Receiver or UHF Transmitter/Receiver	-	- - Required (as suitable to ground facilities enroute.)
4.	HF Transmitter/Receiver	-	- - Required (unless both UHF and VHF operative and suitable to ground facilities enroute.)

ITEM	EQUIPMENT	NUMBER INSTALLED	MINIMUM OPERATIONAL REQUIRED FOR FLIGHT TO MAINTENANCE BASE
5.	Radio Altimeter	1	1 - Required for Nite Airdrops.
6.	Headset and Microphone	4	2 - Required; cockpit