* CHECK AT INTERMEDIATE STOPS

Entering Flight Compartment

Spare Hyd. & Equipment..... check
Circuit Breakers..... check
Heater..... as required
Doors & Hatch..... secured
* Master Switch or Ground Power.. on
* Warning Light..... off
Seat & Pedals..... adjusted
* Parking Brakes..... on
* Hydraulic Pressure..... check
* Seat Belt & No Smoking Sign. on
Radio Master Switch..... off
Light Switches.. check & as required
Pitot Heater..... off
Ignition..... off
Booster Pumps..... off
Inverter..... off
Static Selector..... normal
Fire Warning Light..... check
* Gas Tank Selectors..... on
* Quantities-Hyd. Fluid - Oil
Fuel - Alcohol..... check
* Cowl Flaps..... open
* Wing Flaps..... neutral
* Gear Lever..... neutral
Wing De-icer..... off
Prop. & W. Shield De-icer... check & off
Trim Tabs..... check & neutral
* Throttles..... closed
Propellers..... forward
Mixtures..... idle cut-off
Carb. Heat..... cold
* Controls..... free
* Pins..... on board
* Fire Guards & Props..... clear
* Fire Ext. Door..... open

START ENGINES

After Starting Engines Check

* Inverter..... on
* Oil Pressure..... check
* Hydraulic Pressure..... check
* Booster Pumps..... off
* Generators..... on
* Gyros..... uncaged
Flaps..... exercised & up
Wing De-icer Boots..... check
* Vacuum Pressure..... check
W. Shield Wipers... check & off
* Radios..... on & check
Landing Lights..... check

RUN-UP CHECK

Parking Brakes..... on
Temp. & Press..... check
Mixtures..... auto-rich
R.P.M..... 1600
Carb. Heat..... on & off
Propellers..... exercise
Feathering & Generators.. check
Dead Magneto & Ignition.. check

PRE TAKE-OFF CHECK

Flaps..... up
Hyd. Pressure..... up
Mixtures..... rich
Pitch..... forward
Trim Tabs..... set
Carb. Heat..... cold
Temp. & Press..... normal
Gyros..... set
Fuel, Selection & content. check
Boosters..... on
Ignition Switches..... on
Pitot Heat..... on
Cowl Flaps..... trail
Out Side..... check
Controls..... free
Tail Wheel..... locked

AFTER TAKE-OFF

Landing Gear..... up
Power 33" 2250..... adjusted
Temp. & Press..... normal
Landing Light 500'..... off
Booster Pumps 1000'..... off
Seat & No Smoking Sign... off

CRUISE CHECK

Temp. & Press..... check
Cowl Flaps..... as required
Power, use cruise chart. adjusted
Mixtures..... auto-lean
Out Side..... check
Fire Ext. Door..... closed

IN RANGE CHECK

Seat & No Smoking Sign... on
Alcohol Anti-icer.... as required
Wing De-icer..... as required
Tank Selector..... check
Carb. Heat.... hot then cold
Altimeter..... set

BEFORE LANDING CHECK

Mixtures..... rich
Carb. Heat..... cold
Boosters..... on
De-icer Boots..... off
Brakes..... check
Tail Wheel..... locked
Cowl Flaps..... as required
Landing Gear... down, locked,
green lights
Wing Flaps..... as required
Propellers (on the ground). forward

AFTER LANDING CHECK

Pitot Heater..... off
Fuel Boosters..... off
Landing Gear Press..... check
Cowl Flaps..... open & off
Wing Flaps..... up & neutral
Tail Wheel..... unlocked
Anti-Collision Beacon.... off
Trim Tabs..... neutral

RAMP CHECK

Parking Brakes..... on
Mixtures..... idle cut-off
Ignition Switches..... off
Inverter..... off
Radio..... off
Tank Selectors..... off
Instruments..... caged
Flap Selector..... up
Landing Gear Selector.... down
Controls..... locked
Master Switch..... as required

FIRE - ENGINE

(1)	Throttle	CLOSE
(2)	Propeller	FULL DECREASE RPM
(3)	Mixture	IDLE CUT-OFF
(4)	Propeller	FEATHER
(5)	Fuel Tank Selector	OFF
(6)	Oil & Hydraulic Firewall Shut-off Valve	CLOSE
(7)	Cowl Flaps	CLOSE, then OFF
(8)	Ignition Switch	OFF
(9)	Generator	OFF
(10)	Fuel Booster Pump	OFF
(11)	Engine Fire Extinguisher Switch	No. 1 BOTTLE - 4 secs.
	" " (IF REQUIRED)	~~No. 2 BOTTLE - 4 secs.~~
(12)	Seat Belt & No Smoking Sign	ON
(13)	DO NOT RE-START ENGINE	

SINGLE ENGINE - IN FLIGHT

(1)	Power operative engine - S.L. to 7500'	2550 rpm, 41.5" mp
	above 7500'	2550 rpm, 39.5" mp
(2)	Drag check	
	(a) Landing Gear	UP
	(b) Flaps	UP
	(c) Cowl flaps	AS REQUIRED
(3)	Inoperative Engine:	
	(a) Throttle	CLOSE
	(b) Propeller	FULL DECREASE RPM
(4)	Trim	AS REQUIRED
(5)	Check for fire: if any carry on	FIRE ENGINE PROCEDURE
(6)	(a) Check gas for	SELECTION, CONT, PRESS.
	(b) Ignition switches	ON BOTH
	(c) Mixture	RICH
	(d) Carburetor heat	HOT DEAD ENGINE
(7)	No smoking and safety belt sign	ON
(8)	If engine cannot be restarted:	
	(a) Mixture	IDLE CUT-OFF
	(b) Propeller	FEATHER
	(c) Ignition	OFF
	(d) Cowl flaps	CLOSE
	(e) FUEL booster pump	OFF

NOTE: If aircraft is gone to be flown for any lenght of time, use gas from tanks of dead engine side.

PROPELLER UNFEATHERING:

(1)	Ignition	ON
(2)	Fuel Tank Selector	DESIRED TANK
(3)	Oil & Hydraulic Firewall Shut-Off Valve	OPEN
(4)	Propeller	FULL DECREASE RPM
(5)	Throttle	CRACKED
(6)	Propeller	UNFEATHER
(7)	Oil Pressure	CHECK FOR INCREASE (Above 45 psi)
(8)	Mixture Control	TAKE-OFF & CLIMB
(9)	Generator	ON
(10)	Warm up gradually to minimum oil temperature 40°C, Min Head temp, 100°C (Throttles at 15 - 20" HG.)	

Q U E B E C A I R I N C.

CRUISE CONTROL CHART

PRATT & WHITNEY R1830-92/94 Cyl. engines in auto-lean mixture.

Press. Alt. & Std. Temp.	BHP/BMEP/ENG	
BHP	600	625
BMEP	127	133 lb/sq.in.
Sea level RPM	2050	2050
15°5 MP	30.25	30.75
Two Eng. Gal/HR	78	80
1000'	2050	2050
13°C	30.00	30.50
	78	80
2000'	2050	2050
11°C	29.75	30.25
	78	80
3000'	2050	2050
9.1°C	29.50	30.00
	78	80
4000'	2050	2050
7.1°C	29.25	29.75
	78	80
5000'	2050	2050
5.1°C	29.00	29.50
	78	80
6000'	2050	2050
3.1°C	28.75	29.25
	78	80
7000'	2050	2050
1.1°C	28.75	29.25
	78	80
8000'	2050	2050
-8°C	28.50	29.00
	78	80
9000'	2050	2050
-2.8°C	28.50	28.50
	78	80
10000'	2050	2050
-4.8°C	28.25	28.25
	78	80

Correction for Carburetor Air Temperature Difference from Standard.

If Carb. Air is above Standard.	Add. 0.5 in. Man. Press. for each 10°C above I.S.A.	Add. 25 RPM for each 10°C above I.S.A.
If Carb. Air is below Standard.	Subtract 0.5 in. Man. Press. for each 10°C below I.S.A.	Subtract 25 RPM for each 10°C below I.S.A.

NOTES:

1. To maintain constant climb or cruise powers above the altitude at which the engine reaches full throttle, increase engine speed 50 RPM for each 1000' above the full throttle altitude. (Critical altitude, the limit at which the engine(s) cannot develop any more manifold pressure).
2. Climb 2300 RPM, 35" Hg. Man. Press. No Temp. or Alt. correction required.
3. For descents or other low power manoeuvres as perhaps a simulated engine failure, it is well to remember that each 100 RPM required at least one inch Hg. manifold pressure. For example, 22 in. at 2200 RPM. Operation at high RPM and low manifold pressure should be kept to a minimum.

28/2/63

Q U E B E C A I R I N C.

CRUISE CONTROL CHART

PRATT & WHITNEY R1830-92 engines auto-lean mixture.-

Press. Alt. & Std. Temp.	BHP/ENG		
BHP	525	550	575
Sea Level RPM	2050	2050	2050
15°5 MP	27.75	28.50	29.25
Two Eng. Gal/HR	71	73	75
1000'	2050	2050	2050
13°C	27.50	28.25	29.00
	71	73	75
2000'	2050	2050	2050
11°C	27.25	28.00	28.75
	71	73	75
3000'	2050	2050	2050
9.1°C	27.00	27.75	28.50
	71	73	75
4000'	2050	2050	2050
7.1°C	26.75	27.50	28.50
	71	73	75
5000'	2050	2050	2050
5.1°C	26.50	27.25	28.25
	71	73	75
6000'	2050	2050	2050
3.1°C	26.25	27.00	28.00
	71	73	75
7000'	2050	2050	2050
1.1°C	26.00	27.00	28.00
	71	73	75
8000'	2050	2050	2050
-.8°C	25.75	26.75	27.75
	71	73	75
9000'	2050	2050	2050
-2.8°C	25.75	26.50	27.50
	71	73	75
10000'	2050	2050	2050
-4.8°C	25.50	26.25	27.50
	71	73	75

Correction for Carburetor Air Temperature Difference from Standard.

If Carb. Air is above Standard.	Add. 0.5 in. Man. Press. for each 10°C above I.S.A.	Add. 25 RPM for each 10°C above I.S.A.
If Carb. Air is below Standard.	Substract 0.5 in. Man. Press. for each 10°C below I.S.A.	Substract 25 RPM for each 10°C below I.S.A.

NOTES:

1. To maintain constant climb or cruise powers above the altitude at which the engine reaches full throttle, increase engine speed 50 RPM for each 1000' above the full throttle altitude. (Critical altitude, the limit at which the engine(s) cannot develop any more manifold pressure).

2. Climb 2250 RPM, 33" Hg. Man. Press. No Temp. or Alt. correction required.

3. For descents or other low power manoeuvres as perhaps a simulated engine failure, it is well to remember that each 100 RPM required at least one inch Hg. manifold pressure. For example, 22" at 2200 RPM. Operation at high RPM and low manifold pressure should be kept to a minimum.

RIMOUSKI, Quebec,
June 1st, 1961

EMERGENCY PROCEDURES

CONTENTS

EMERGENCY PROCEDURES

CHECK NOTES

FIRE - ENGINE

(1) Throttle.....CLOSE
(2) Propeller..... FULL DECREASE RPM
(3) Mixture.....IDLE CUT-OFF
(4) Propeller..... FEATHER
(5) Fuel Tank Selector.....OFF
(6) Oil & Hydraulic firewall shut-off valve. CLOSE
(7) Cowl Flaps.....CLOSE, then OFF
(8) Ignition Switch.....OFF
(9) Generator.....OFF
(10) Fuel Booster Pump..... OFF
(11) Engine Fire Extinguisher Switch..... No. 1 BOTTLE-4 SECS.
Extinguisher Switch..... No. 2 BOTTLE-4 SECS.
..... IF REQUIRED
(12) DO NOT RE-START ENGINE

FIRE - FUSELAGE

(1) Flight Compartment, Passenger Cabin, Cargo Compartment:
(a) Hand fire Extinguishers..... USE - AS REQUIRED
CAUTION: ~~Upon coming in contact with a hot surface, Pyreno fluid~~ (essentially carbon tetrachloride) gives off ~~very toxic phosgene gas. Care should be exercised not to breathe these fumes~~.
CO_2 fire extinguishers should also be used with great care, to avoid injuries to passengers and crew.
(b) When fire is definitely out, ventilate cabin.
GENERAL NOTE - SMOKE EVACUATION GOOD JUDMENT MUST BE USED.

FIRE - HEATER

(2) (a) Heater Switch..... OFF
(b) Operate Heater fire Extinguisher
(c) DO NOT RE-START HEATER.

SWITCH TYPE
SWITCH - OFF
PUSH EXTINGUISHER

EXHAUST TYPE
SHUT VALVE - CLOSED -

QUEBECAIR INC. REGULATIONS

SMOKE EVACUATION:

(1) Flight Compartment to Cabin Door..... CLOSE
(2) If the Flight Compartment is not filling with smoke it is preferable not to open Flight Compartment windows.
(3) If smoke becomes excessive in Flight Compartment:
  (a) Captain's fwd. Sliding Window..... OPEN - 3 INS.
  (b) First Officer's Side Window..... OPEN - 6 INS.

SMOKE OR FIRE FROM ELECTRICAL SOURCE:

(1) Master and Generator Switches..... OFF
(2) Generator Field Circuit Breakers..... OFF
(3) Attempt to locate source of burning - check Circuit Breakers, Electronic and Radio Racks, Electrical Panels; isolate defective circuits and resume normal electrical operation.

ENGINE FAILURE - TAKE-OFF:

(1) Power, operative engine - Airport level to 1000'.... 2700 RPM, 48" M.P.
  Above 1000'..... 2550 RPM, 41.5 M.P.
  ..... OR AS REQUIRED
(2) Landing Gear..... UP
(3) Trim..... AS REQUIRED
(4) Inoperative Engine:
  (a) Throttle..... CLOSE
  (b) Propeller..... FULL DECREASE RPM
  (c) Mixture..... IDLE CUT-OFF
  (d) Propeller..... FEATHER
  (e) Fuel Tank Selector..... OFF
  (f) Oil & Hydraulic firewall shut-off valve..... CLOSE
    (for practice purposes, simulate only)
  (g) Cowl Flaps..... CLOSE than OFF
  (h) Ignition Switch..... OFF
  (i) Generator..... OFF
  (j) Fuel Booster Pump..... OFF
(5) Charging rate of operative Generator..... NOT OVER 75 AMPS

QUEBECAIR

SCHOOL TRAINING NOTES

COURSE _____ SUBJECT _____

1 SIR FLIGHT THRUST

2 POWER

3 DRAG (WHEELS UP FLAPS UP)

4 FIRE — IF SO —

5 VITAL CHECKS (Memorized)

6 FEATHER - MIX ICO.

7 FUEL TANK VALVE OFF

ENGR SHUT OFF.

COWL FLAPS CLOSE OFF

— TOP RIGHT TO LEFT —

GENERATOR - OFF

FUEL BOOSTER PUMP - OFF

IGNITION SW - OFF -

SEAT BELT NO SMOKE - ON -

8 DECLARE EMERGENCY

CLIMB POWER

2300 - 35"

POWER 1. T/O POWER 2700 41" UP TO 1000'

2. IF ABOVE 1000' USE MCTO 2550 41.5"

NOTE

ABOVE T/O CLIMB POWER

REDUCE 40° T/O POWER

VITAL CHECKS — GAS SELECTOR, CONTEXT

BP PRESSURE - MIXTURE →

RICH, CARB HT

— NOT DEAD END.

IGNITION - BOTH.

QUEBECAIR

SCHOOL TRAINING NOTES

COURSE _____ SUBJECT _____

Single Eng Speed

90 - 95 K climb

105 both Speed climb

100 K approach

SINGLE ENGINE - IN FLIGHT

(1) Power operative engine - S L to 7500'..2550 rpm, 41.5" mp
above 7500'..2550 rpm, 39.5" mp
..OR AS REQUIRED

(2) Drag check:
(a) Landing Gear..... UP
(b) Flaps..... UP
(c) Cowl flaps AS REQUIRED

(3) Inoperative Engine:
(a) Throttle..... CLOSE
(b) Propeller..... FULL DECREASE RPM

(4) Trim..... AS REQUIRED

(5) Check for fire: if any carry on..... FIRE ENGINE PROCEDURE

(6) (a) Check gas for..... SELECTION CONT, PRESS.
(b) Ignition switches..... ON BOTH
(c) Mixture..... RICH
(d) Carburetor heat..... HOT DEAD ENGINE

(7) No smoking and safety belt sign..... ON

(8) If engine can not be restarted:
(a) Mixture..... IDLE CUT-OFF
(b) Propeller..... FEATHER
(c) Ignition..... OFF
(d) Cowl flaps..... CLOSE
(e) FUEL booster pump..... OFF

NOTE: If aircraft is gone to be flown for any lenght of time, use gas from tanks of dead engine side.

GROUND FIRES

AT BLOCKS

1. Evacuate Passengers
2. Notify control tower

AWAY FROM BLOCKS

1. Turn downwind to keep fire away from cabin.
2. Parking brakes..... ON
3. Follow Emergency Passenger Evacuation Procedures.
4. Notify control tower.

COMPARTMENT OR HEATER FIRE

1. Use appropriate CO_2 extinguisher system
2. Shut down engines

ELECTRICAL FIRE

1. Emergency Disconnect switch... OFF
2. Shut down engines

ENGINE OR NACELLE FIRE

1. Throttle CLOSED
2. Mixture..IDLE CUT-OFF
3. Firewall shutoff.... PULL
4. CO_2 Discharge..... PULL
5. Fuel Boost Pumps... OFF
6. Generator..... OFF
7. Ignition..... OFF
8. Tank Selectors..... OFF
9. Cross-feeds..... OFF

QUEBECAIR INC. REGULATIONS

PROPELLER UNFEATHERING: CHECK NOTES

(1) Ignition ..... ON
(2) Generator ..... ON
(3) Fuel Tank Selector ..... DESIRED TANK
(4) Oil & Hydraulic Firewall
Shut Off Valve ..... OPEN

QUEBECAIR

SCHOOL TRAINING NOTES

COURSE ______________________ SUBJECT ______________________

UN FEATHERING

1 FUEL SELECTOR ON —

2 EMERGENCY SHUT OFF VALVE – ON

3 COWL FLAPS – CLOSE

4 GENERATOR – ON –

5 FUEL BOOSTER – ON

6 IGNITION ~~NO SMOKING~~ – ON

7 NO SMOKING SEAT — AT YOUR DISCRESION.

8 THROTTLE — FULLY BACK —

8 ~~MIXTURE~~ PITCH — FULL COARSE –

9 MIXTURE IDLE CUT OFF

10 PROP – UN FEATHER – (BUTTON) AT 600 – 800 RPM
WATCH OIL PRESSURE WARN
LITE — WHEN OUT, MAY AUTO REC

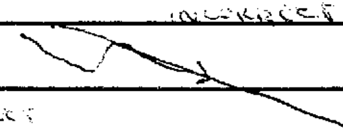
11 POWER – 1700 RPM ... INCH MAN. PRESS.

12 CHECK LIST

OVERSHOOT PROCEDURE

BELOW 400'	2 ENG	1 ENG	POWER
	T/O	T/O	DRAG
ABOVE 400'	2 ENG	1 ENG	WHERE TO
	CLIMB POWER	T/O	AFTER T/O CHECK

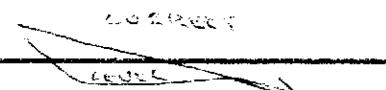
INCORRECT



UNDERSHOOT

ADD POWER + LEVEL OFF C.G.

CORRECT



With the throttle closed and prop pitch fully forward, the engine will windmill at 2100 RPM when aircraft speed is 110 knots
at 1900 RPM when aircraft speed is 100 knots
at 1700 RPM when aircraft speed is 90 knots

With one engine maintaining aircraft speed at 100 knots and the other engine windmilling at 1900 RPM the rate of descent was 400 ' minute.

By opening the test engine to 2300 RPM with the throttle the aircraft maintening it's altitude.

By opening the test engine to 2600 RPM with the throttle the aircraft climbed at 200' minute.

With one engine maintaining aircraft speed at 90 knots and throtteling the engine to 2600 RPM the aircraft climbed at 600' minute.

ELECTRICAL SYSTEM:

1. One Generator in-operative in Flight.
   (1) Electrical Load.....REDUCE
   switching off all non-essential electrical and radio services to reduce operative generator load to not over 50 amps.
2. Two Generators in-operative in Flight.
   (1) Electrical Load.....REDUCE
   to absolute minimum to conserve battery.
3. Generator Circuit Breakers Trip.
   (1) Electrical Load.....REDUCE
   to absolute minimum by switching-off all non-essential electrical and radio services.
   (2) Generator Switches..... OFF
   (3) Generator Circuit Breakers.....RE-SET
   (4) Generator Switches.....BOTH-ON
   simultaneously.
   If Generator Circuit Breakers trip again:
   (5) Battery Master Switch.....OFF
   (this disconnects low battery from main bus relieving generators of supplying a high charging current.)
   (6) Generator Switches.....OFF
   (7) Generator Circuit Breakers.....RE-SET
   (8) Generator Switches.....BOTH-ON
   simultaneously.
   (9) Master Switch..... LEAVE - OFF
   for remainder of flight.
   (10) On landing, taxiing, and when parked,.....
   Engine RPM.....1200-1500 MINIMUM
   as practical to ensure generators cut in to take electrical load.
4. Electrical or Radio Circuit Breakers Trips.
   (1) Circuit Breakers..... RE-SET - ONCE
   (2) If the Circuit Breaker Trips again it should normally be left "OPEN" for remainder of flight.

LOSS OF HYDRAULIC SYSTEM PRESSURE AND/OR FLUID:

(1) All Hydraulic Selectors.....NEUTRAL or OFF during enroute flight.

(2) Approach:

(a) Landing Gear Selector..... DOWN
Gear will extend under its own weight - pulling nose up sharply will lock gear in place.

(b) Landing Gear Selector..... NEUTRAL
To conserve all the fluid possible for flap and brake operation.

(c) Safety Latch Lever..... DOWN & LOCKED

(d) Check..... TWO GREEN - I HAVE A WHEEL & LOCKED

(e) Wing Flap Selector..... DOWN
Hand Pump Flaps..... DESIRED POSITION

(f) Wing Flap Selector..... RETURN - NEUTRAL
If flaps do not lower immediately by pumping, a leak in the flap down-lines is indicated and Wing Flap Selector should immediately be returned to NEUTRAL to conserve fluid and a "flaps-up" landing carried out.

(3) Landing:

(a) Plan to execute landing for minimum use of brakes with tail well down to shorten landing roll.

(b) The First Officer is to keep continuous pressure on the hand pump.

PREPARATION FOR PASSENGER EVACUATION

Accomplish the following preparations in flight when the situation indicates an emergency evacuation of passengers may be necessary upon landing. The procedures for EMERGENCY PASSENGER EVACUATION are listed next page.

CAPTAIN	FIRST OFFICER	STEWARDESS
When possible 1. Notify ground of emergency. 2. Advise Stewardess and issue necessary orders. 3. Avoid landing until emergency equipment and crew standing by. 4. In case of fire, make right turn to head downwind during final stage of landing roll if practical.	1. Secure loose equipment or baggage in forward cargo pits. 2. Operate Radio. 3. Upon order from Captain. A. Declare Emergendy(MAYDAY or PAN as situation requires). B. Aircraft Identification. C. Position. D. Nature of Emergency. E. Action being taken or planned. F. Any additional information that may be available to effect an efficient rescue or relief. 6 If time permits help stow in Back	1. Check all seat belts fastened tightly and all seats full upright. 2. Have passengers remove glasses, dentures, high-heel shoes, any sharp objects. 3. Instruct passengers in evacuating airplane and advise best protective positions. 4. Distribute pillows blankets, coats etc., for impact protection. 5. Secure all loose equipment and baggage. Place cabin baggage in lavatory. 6. Instruct passengers to open emergency exits. 7. Instruct two male passengers to assist in evacuation. 8. Open flight compartment door. 9. Advise Captain when preparations for evacuation are complete. Proceed to seat and fasten belt just prior to landing. NOTE: The stewardess is responsible for all duties listed above but may delegate some to passengers.

EMERGENCY PASSENGER EVACUATION

The following procedures apply when the airplane is on the ground, either in a normal attitude or with gear up or partially up. When an emergency condition is anticipated, the Preparations for Passenger Evacuation should be carried out prior to landing. Each crew member should be thoroughly familiar with the duties of other members so that he will be able to perform them if it is necessary.

CAPTAIN	FIRST OFFICER	STEWARDESS
Notify Control Tower if possible. Flaps.....~~150~~ All controls and switches in appropriate positions. Use CO_2 portable fire extinguisher(s) on existing fires. If no fire, assist passengers to ground Designate assembly point to account for all passengers and crew. If conditions permit salvage personal articles, first aid equipment, food, blankets etc. Arrange for passengers comfort.	After Plane comes to rest open flight compartment exit and leave through cargo door, side window or exit, with pyrene extinguisher and fire axe. If main cabin door used for evacuation: 1. Proceed to the door. 2. Request 2 male passengers to assist in evacuating. 3. Assist passengers sliding at trailing edge of wing. If front cargo door is used for evacuation (tail high position) direct and assist passengers out.	If airplane level: 1. Open main cabin door. 2. Direct passengers to exit. 3. Open emergency exits. 4. Divert some passengers to these exits if quick evacuation is required. NOTE If airplane is tail high, passengers may be evacuated via front cargo door. The stewardess is responsible for all duties listed above but may delegate some to passengers.

Woodall [illegible]

QUEBECAIR
SCHOOL TRAINING NOTES

COURSE DC-3 SUBJECT

4 lites, 3 exits

Emergency lites main pax door

2 batts 1 1/2 volt

automatic or manual

operate on 1 1/2 G.

CO_2 - electrical and fuel etc.

H_2O - fabric - anything that leaves ashes.

CO_2 fire extinguishers located

1. behind capt

2. under Stw seat

First aid kits

1. in cargo and by bulk head.

2. in some a/c in other places.

Axes.

Right behind capt seat.

FLARES

(1) DESCRIPTION

Two 3 minutes flares are installed in containers in the left side of the fuselage, just aft of the rear baggage compartment. The release switches are located at the top of the hydraulic panel. The flares have an intensity of 300,000 to 350,000 candle power.

(2) USE

The flares should be released in the order of AFT FLARE FIRST. There is the possibility of the aft flare fouling if released last.

a) Force cover open to expose switch panel.
b) Throw master switch down.
c) Right hand switch releases first 3 minute flare.
d) Left hand switch releases second 3 minute flare.

(3) Reduce Airspeed to 130 MPH drop first flare at 3,000 feet above terrain on an upwind heading if wind is known. The purpose of the first flare is to select the generally best spot for landing, the second flare will be to complete the approach and execute the landing. An 80° right 260° left reversement should now be made, directed to return under the descending flare. Since the flare drops at approximately 500 ft/min, the ship's descent should be about 700 ft/min to insure overhead illumination.

Use (Cont.)

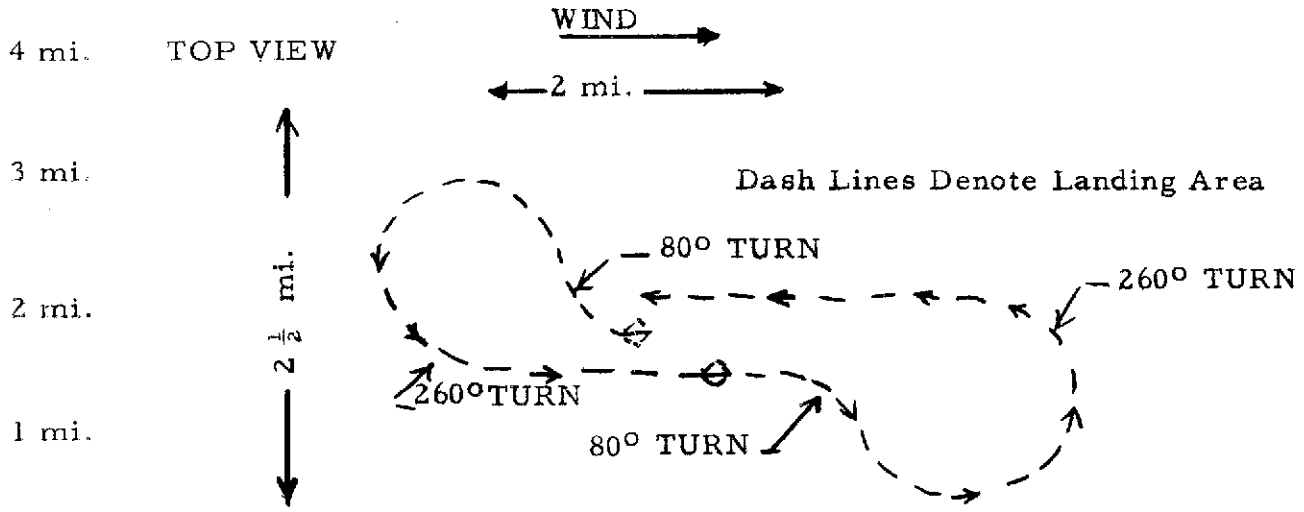
The second flare should be dropped at 2,000 feet in a position upwing of the intended landing spot and so estimated that the drift of the flare will bring it near or over the spot. The rate of descent should now be increased to 1,000 ft/min, a second 80° - 260° reversement executed to return to underneath the second flare. At the time of return toward the second flare, the flare will be approximately 1,000 feet overhead and the airplane will be in position near the ground for level-out-of descent for landing.

(4) A summary of the above recommendations:

a) Drop first flare at approximately 3 000 feet altitude.
b) Turn airplane back into cone of illumination.
c) Select landing site.
d) Drop second flare to windward of site not less than 2,000 feet altitude, landing before 3 minute flare time expires.

(5) DISCUSSION

It is realized that the above procedure may not be suitable for all emergency night landing conditions, and each flight officer will proceed as his judgment and the particular emergency dictate.



1 mi. 2 mi. 3 mi. 4 mi. 5 mi. 6 mi. 7 mi.

Flares descend approx. 550 ft./min. light duration 3 min.
aircraft speed 130 M.P.H. in descent approx. 700 ft/min.
landing speed near ground. Descent approx. 700 ft/min.
all turns 30° bank.

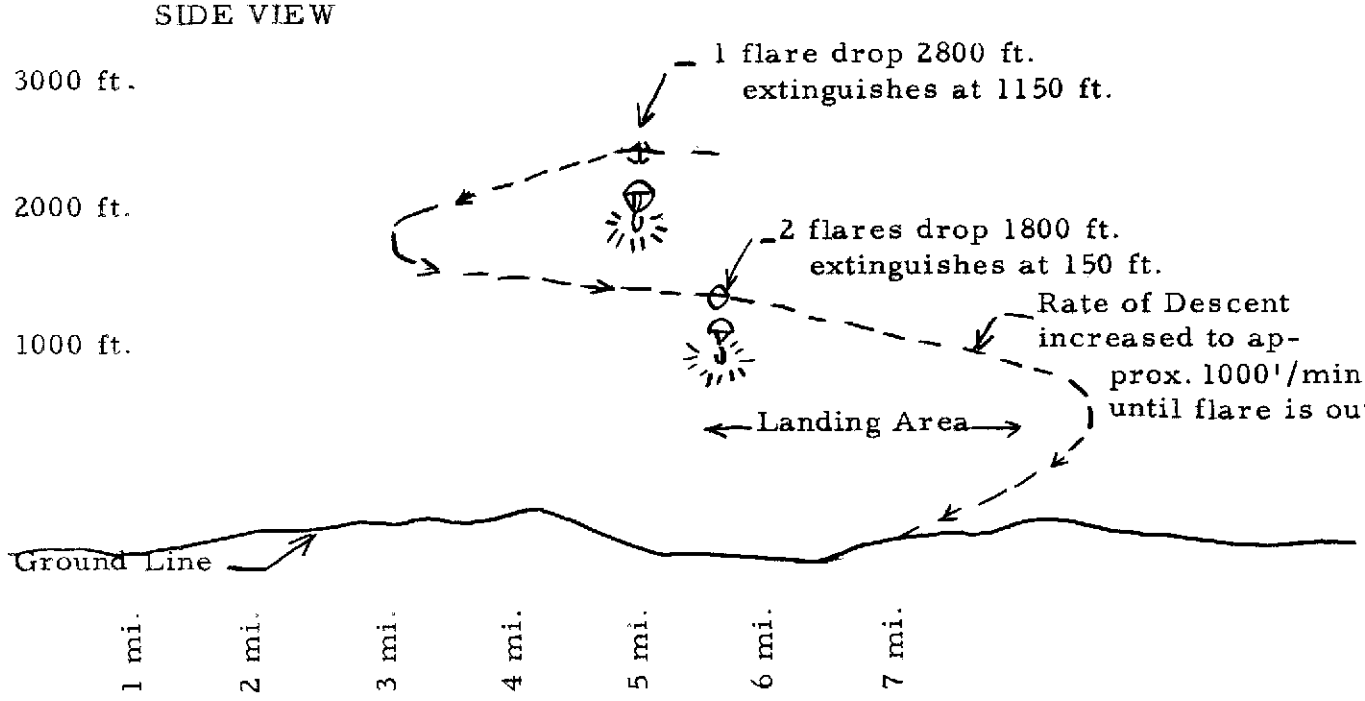


ILLUSTRATION OF RECOMMENDED CONTROLLED DESCENT USE OF FLARES

DITCHING PROCEDURE

In the event that a forced landing is necessary on water, the following points will be borne in mind:-

1. The Captain will advise all other crew members of the emergency. The stewardess, or flight agent, will ensure that all passengers have fastened their safety belts and that they are instructed to protect their heads as much as possible. (see page 9)

2. Retract landing gear.

3. Lower wing flaps to half down position to reduce contacting speed and assume a normal glide approach. This will ensure control and permit some margin of speed after levelling off.

4. If a choice is available landing should be made in shallow water, or if a ship is observed, landing should be carried out as near by it as possible.

5. If it is necessary to land with a heavy swell prevailing and the landing should be made along the swell; if the wind is higher or greater than 25 miles per hour, landing should be carried out as nearly into the wind as possible, angling along the up-slope of the swell.

6. If power is available a little may be used to flatten the approach. Do not apply power at final stage or making contact with the water; hold off the aircraft until all excess speed above stalling speed is lost and then strike the water in a three point attitude.

7. There will be a slight impact as the tail section strikes the water, followed by an extreme impact with extreme de-celeration.

8. As the aircraft comes to rest, the nose will submerge out, if the alighting has been accomplished correctly and without a bounce, this effect will be minimized.

9. Normally the aircraft can be expected to float for only a very few minutes so the crew will be required to take immediate action in order to safely evacuate passengers. (see page 10)

COCKPIT CHECK LIST

10. A cockpit check list will be carried in the Flight Compartment at all times, Flight crews will refer to it when making cockpit check in order no item will be overlooked.

FORCED LANDING PROCEDURE

In the event a forced landing is inevitable as the result of loss of both engines or other reasons, the following instructions will serve as a guide in directing the action of the Flight Officer. It is not considered advisable or feasible to set down definite rules or procedures in an effort to entirely cover such a grave situation, as circumstances and conditions will influence the decisions made by the Captain whose prime consideration will be the safety of his passengers.

The Captain will, as quickly as possible, select the most suitable area in which to effect the landing, providing the radio station, to which he has been tuned, with as much pertinent information as it is possible at the time.

2. The first Officer will, if time permits, make a survey of engine controls and instruments in endeavour to establish the cause of the engine failure - if this has not already been determined.

3. The first Officer will switch ON passenger warning light, advising Stewardess if possible. (page 9 Preparations for Passenger Evacuation).

4. Heater switch -off.

5. Captain should, if possible, get to the leeward of the area chosen for the landing.

6. For such emergency landings the undercarriage should be retracted unless the Captain has no doubt about being able to effect a normal safe landing with gear extended. Such action might be justified, for instance, in the event that a landing is to be made on the frozen surface of a lake familiar to the Captain as to thickness of ice-depth of snow, etc.

7. The importance of reducing drag as much as possible cannot be over-emphasized, and both flaps and undercarriage must be fully retracted until such time as they are required for landing.

8. When it is apparent that engines cannot be re-started, the CAPTAIN will order the First Officer to switch OFF ignition, generators and fuel selector valves.

9. The First Officer will be prepared to take over the operation of the radio, finally shutting off the master radio and electrical controls before landing is made.

10. The dumping of fuel from low altitude is to be avoided because of the danger of fire on making contact with the ground. The decision to dump fuel at any time must be left to the discretion of the Captain, but is not recommended.

11. Before landing the FIRST OFFICER will jettison the Pilot's emergency exit hatch and open fire extinguisher box cover in order that extinguisher controls are readily accessible if required after landing.

12. After landing it will be the Captain's responsibility to take whatever steps and action are considered best under the circumstances, bearing in mind that his principal concern is the well being of his passengers. Follow procedure for Emergency Passenger Evacuation.