

RNP APPROACH - BRIEFING REFERENCE

RNP DEPARTURE

PRE-DEPARTURE REQUIREMENTS

Required Equipment VERIFY

Wind and temperatures (if applicables) WITHIN CHARTED LIMITS

RNP AVAILABILITY FORECAST VERIFY

PRE-DEPARTURES PROCEDURES

CDU

RNP Departure procedure SELECT

RNP SET/VERIFY

DME/RADIO UPDATING INHIBIT

DISPLAYS

Terrain on ND AS RQRD

ND Mode Map range ADJUST TO MONITOR PATH

LNAV VERIFY

RNP DEPARTURE BRIEFING

PF : Brief departure procedure including speed and altitude restrictions.

PM : Verify LEGS page as briefed, verified, no modifications.

MAXIMUM DEVIATIONS

Vertical : maintain required speed/configuration and thrust.

Lateral : callout when XTK error is half of RNP.

RNP APPROACH

PRE-APPROACH REQUIREMENTS

Required Equipment VERIFY

Wind and temperatures (if applicables) WITHIN CHARTED LIMITS

RNP AVAILABILITY FORECAST VERIFY

PRE-APPROACH PROCEDURES

CDU

RNP Departure procedure SELECT

DME/RADIO UPDATING INHIBIT

RNP SET/VERIFY

DISPLAYS

Terrain Mode ON

ND Mode Map

RANGE ADJUST TO MONITOR PATH

RNP APPROACH BRIEFING

PF : Brief approach procedure including speed and altitude restrictions and missed approach.

PM : Verify LEGS page as briefed, verified, no modifications.

PRIOR TO FAF

GPS INOP LIGHT EXTINGUISHED
ALTIMETERS SET/CHECK

Verify current altimeters settings and cross-check within 75' at FAF.

AT FAF

FMA VNAV PATH ANNUNCIATED
Go-Around altitude SET GO AROUND ALTITUDE

MAXIMUM DEVIATIONS

Vertical : callout when vertical deviation +/- 50 feet. Go Around when Vertical deviation reaches +/- 65'.

Lateral : callout when XTK error is 1/2 RNP. Go-Around when error reaches 1 RNP.

Missed approach

LNAV engaged 400' AGL VERIFY

RNP EQUIPMENT FAILURES

Condition : inflight failure prior to FAF.

Single CDU or EFIS or FMC FAILURE EVALUATE/CONTINUE
GNSS (GPS) Left or GNSS (GPS) Right INVALID EVALUATE/CONTINUE
Loss of EGPWS terrain data EVALUATE/CONTINUE
VNAV DISCONNECT EVALUATE/CONTINUE
Altimeters disagree >>> DISCONTINUE PROCEDURE
Dual FMC failure >>> DISCONTINUE PROCEDURE
FMC disagree >>> DISCONTINUE PROCEDURE
EGPWS terrain inconsistencies >>> DISCONTINUE PROCEDURE
Unable Required navigation performance RNP >>> DISCONTINUE

>>> DISCONTINUE PROCEDURE

Missed approach INITIATE
LNAV engaged 400' AGL Verify
EGPWS (if available) MONITOR
GPS POSITIONING VERIFY
 ◆ If GPS positioning is not valid and EGPWS is not available :
 Ground-bases nav aids (if available) MONITOR
 Radar Ground Map MONITOR

Dual AutoPilot Failure

FD USE
LDEV AND VDEV MONITOR

ND MONITOR
PATH MAINTAIN

. Choose one :

- ◆ ACFT before FAF or Approach requires RNP 0,3

Approach procedure CONTINUE

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- ◆ ACFT after FAF or Approach requires < 0,3

Go-Around EXECUTE

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LOSS OF LNAV

Xtk Error and VDEV USE

ND MONITOR

LATERAL PATH MAINTAIN

. Choose one :

- ◆ ACFT is before FAF on approach

Opposite autopilot ENGAGE

NAV/APPR Mode SELECT

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- ◆ ACFT is after FAF

Go-Around EXECUTE

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BIOLOGICAL OR CHEMICAL HAZARD /THREAT

Condition: suspected biological or chemical hazard / threat to the flight.

Inflight:

Consideration should be given to landing as soon as practical based on analysis of the situation and coordination with SOCC.

If the material is airborne within the aircraft, the following procedures will minimize particulate flow into the flight deck and should be utilized.

1. Oxygen Masks & Regulators (Smoke Goggles, If Required) ON, 100%

2. Crew Communications ESTABLISH
 Press crew interphone receiver down and set volume arrow at 12 o'clock or greater. Set **MASK/BOOM** selector to **MASK**. Use I/C toggle on audio selector panel or bottom position on **YOKE ROCKER** switch when speaking to other pilot.

3. Flight Deck Door CLOSED
 Prevents material from penetrating onto the flight deck.

4. Choose one :

◆ Packs ON And Material Confirmed On Flight Deck Or Main Cabin:

L & R Pack Switches HIGH

Recirculation Fan Switch(s) OFF

Digital Controller Land ALT 10,000'

No. 1 & No. 2 Bleed Air Switches VERIFY ON

This assures maximum ventilation.

Engine Thrust (Max Practical) ABOVE 45% N1

During descent / approach, it is desirable to maintain thrust as high as practical to supply maximum bleed air for ventilation.

Flight Deck Air Cond & Gasper Outlets OPEN

This assures adequate flow of ventilating air on flight deck.

Caution: Do not open the flight deck window. Keep the flight deck door closed.

→ If Smoke / Fumes Are Uncontrollable:

→ Aircraft Altitude MEA/MORA OR 10,000 FEET, WHICHEVER IS HIGHER

→ At 14,000 feet or below:

→ Pressurization Mode Selector MAN

→ Outflow Valve Switch OPEN

→ The outflow valve can be take up to 20 seconds to open.



◆ Packs OFF And Material Confirmed On Flight Deck:

Airspeed NORMAL HOLDING SPEED

Caution: Window should not be opened unless the source is confirmed to be originating on the flight deck. High airspeed may prevent opening the window.

F/O's Sliding Window OPEN

Due to resulting high wind noise level, headsets should be on and volume adjusted accordingly.

Land at Nearest Suitable Airport.



VOLCANIC ASH

The following can be expected when flying into volcanic ash:

- Smoke or dust appearing in the cockpit.
- An acrid odor similar to electrical smoke.
- Multiple engine malfunctions, such as compressor stalls, increasing EGT, torching from tailpipe, and flameouts.
- At night, St. Elmo's fire or other static discharges accompanied by a bright orange glow in the engine inlets.
- **EQUIPMENT COOLING OFF** light may illuminate.

Exit volcanic ash as quickly as possible Consider a 180-degree turn

Oxygen Mask And Smoke Goggles (If Required) ON

Crew Communications (If Required) ESTABLISH

Autothrottle (If Engaged) DISENGAGE

Allows thrust levers to remain where manually positioned.

Throttles (Terrain Permitting) IDLE

Reduces possible engine damage and/or flameout by decreasing EGT.

Engine Start Switches FLT

Pack Switches HIGH

Wing & Engine Anti-Ice ON

Increases bleed air extraction to improve engine stall margin.

APU (If Available)START

Provides backup electrical and pneumatic source if required.

Land at nearest suitable airport.

◆ IF Engines Flamed Out Or Stalled, Or EGT Rapidly Approaching Or Exceeding Limit:

Accomplish the **ENGINE START – INFLIGHT** or **TWO ENGINE FLAMEOUT** checklist, as appropriate.



EMERGENCY EVACUATION - PREPARATION

Advise cabin attendants of emergency and type of landing to be made. The cabin attendants will expect the following information :

- T** Type of emergency expected.
- E** Evacuation, will it be necessary?
- S** Signals for brace evacuation and non-evacuation.
- T** Time available for preparation.

ATC And Company NOTIFY
 Burn off Fuel AS REQUIRED

BELOW 5000 FEET AGL

Pack Switches OFF
 Outflow Valve OPEN
 Flight Deck Items SECURE
 Flight Deck Door SECURE OPEN
 Emergency Exit Lights ON

Approach & Landing Checklists ACCOMPLISH

30 seconds prior to touchdown, make a PA "BRACE FOR LANDING."

AFTER AIRCRAFT COMES TO A COMPLETE STOP

. choose one :

- ◆ Evacuation is not required:
 Immediately make a PA: "REMAIN SEATED, REMAIN SEATED."

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- ◆ Evacuation is required:
 Refer to EMERGENCY EVACUATION checklist, this section.

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EMERGENCY EVACUATION

Preparation : refer to EMERGENCY EVACUATION - PREPARATION checklist, this section.

FO is calling items, Captain responding.

Captain	CA	First Officer	FO
Standby Power	BAT		
Tower or Ground	CONTACT		
Speed Brake Lever	DOWN DETENT		
		Flaps	40
		Pressurisation	MAN & OPEN

Parking Brake SET
 Tower/GroundNOTIFY

Passenger Evacuation "EASY VICTOR, EASY VICTOR"
 Start Levers CUTOFF
 Emergency Exit Lights ON
 Engine & APU Fire Handles OVERRIDE & PULL

Crew evacuation duties ACCOMPLISH

Captain : Direct and assist passenger evacuation. Ensure all passengers and crew have evacuated the aircraft.

F/O : Assist Flight Attendant as necessary to ensure forward door(s) open and escape slide activated. Proceed to ground without delay. Circle exterior of aircraft as necessary to coordinate and assist with evacuation. Direct passengers to assembly point.

DITCHING

Send Distress Signal

Advise Crew And Passengers

WARNING: Do not inflate life vest until after exiting the aircraft.

Burn Off Fuel As Required

>>>> Accomplish **IN RANGE** and **APPROACH CHECKLISTS**.

Plan a flap 40 landing unless other configuration is required.

BELOW 5,000 FEET :

Ground Proximity Gear Inhibit Switch GEAR INHIBIT
 Ground Proximity Terrain Inhibit Switch TERR INHIBIT
 Pack Switches OFF
 Engine Bleed Air Switches OFF
 Pressurization Mode Selector MAN
 Outflow Valve Switch CLOSE
 APU Switch OFF
 Flight Deck Loose Gear SECURE
 Flight Deck Door SECURE OPEN
 Life Vests ON
 Shoulder Harnesses & Seatbelts ON
 Passenger Cabin Preparation COMPLETE
 Radio TRANSMIT FINAL POSITION
 Emergency Exit Lights ON

ON FINAL APPROACH :

Landing Gear UP & OFF
 Flaps 40, GREEN LIGHT

30 SECONDS PRIOR TO TOUCHDOWN :

Landing Announcement "BRACE FOR LANDING"
 Maintain airspeed at VREF and 200 to 300 fpm descent rate to start of flare. Flare aircraft to achieve minimum rate of descent at touchdown. Plan to touch down on upwind side and

parallel to waves or swells if possible. To accomplish flare, rotate smoothly to touchdown attitude of 10o-12o.

ON THE WATER :

- Flight Deck Windows OPEN
- Start LeversCUTOFF
- Engine Fire Handles OVERRIDE AND PULL
- Passenger Evacuation "EASY VICTOR, EASY VICTOR"
- After Landing Duties ACCOMPLISH

Captain : Proceed to forward cabin area. Evaluate escape potential. Supervise and assist cabin crew in evacuation of aircraft. **First Officer :** Assist Captain and cabin crew in evacuation of aircraft.

Caution : after landing crew duties are specific when ditching



TAILSTRIKE ON TAKEOFF

Caution: do not pressurize aircraft due to possible structural damage.

- Pressurization Mode Selector MANUAL
- Outflow Valve Switch OPEN

Hold outflow valve switch in the OPEN position until outflow valve position indicator shows valve full open.

Plan to land at nearest suitable airport.

