Circling and Missed Approach Traps in PAPUA NEW GUINEA

Air Niugini

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OBECTIVE

- To briefly describe some of the strategies adopted by Air Niugini in conducting Circling and Missed Approaches on domestic flights.

PAPUA NEW GUINEA

Air Niugini's Current Fleet Composition

Boeing 767-300	3

Fokker 100	6

Dash 8 Q400	3

Dash 8 Q300	3

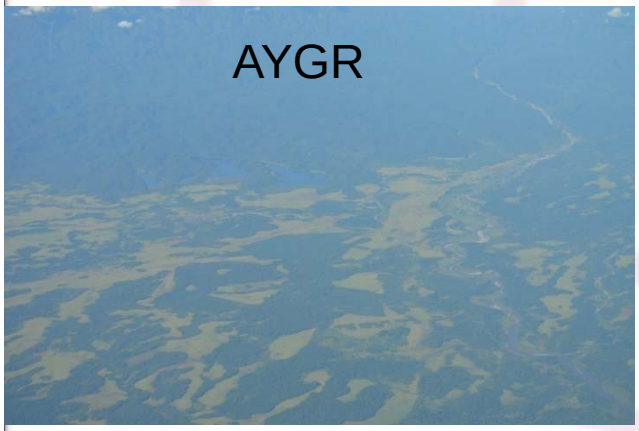
Dash 8 Q200	3

Dash 8 Q100	2
Total	**20**

Air Niugini's 3-Strategy Approach to Circling and Missed Approach Traps

Strategy 1	Strategy 2	Strategy 3
• Documentation	• Training	• Assessment

Strategy 1 Documentation



STRATEGY 1
Documentation
"Part 119 Manuals"

- Standard Operational Procedures Manual (SOPM)
- Route Guide Manual
- Flight Crew Operations Manual (FCOM)

STANDARD OPERATING PROCEDURES MANUAL

- Company standards
- Pre Flight Briefing
- Cross checking and confirmation of critical actions
- Stabilized Approach
- Standard Calls
- VFR/IFR procedures
- Visual approach slope guidance
- Low visibility approaches

ROUTE GUIDE MANUAL

- Airports specific to aircraft type
- Special Procedures
- Committal Height
- Miss Approach Special Procedures
- Manoeuvring
- Fuel to hold
- Alternates
- Route Drift Down

FLIGHT CREW OPERATING MANUAL

- Fleet specific information
- Performance
- Normal Operating Procedures
- Abnormal Procedures
- Weight and Balance
- Port Arrival Procedures
- Port Departure Procedures

STRATEGY 2
Training

GROUND TRAINING

- Two weeks aircraft-specific technical training
- Two weeks job-specific training
- 10 Sectors Supernumerary Flights

SIMULATOR TRAINING

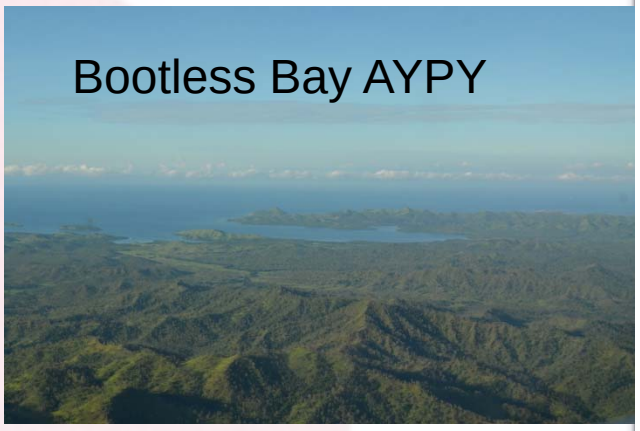
- Ten sessions for an initial endorsement
- Covering
  - Aircraft handling
  - Instrument Approaches
  - Visual approaches
  - Miss Approaches
  - Single Engine Approach and Landing
  - Single Engine Miss Approaches
  - Minimum Weather Circuits and Landing

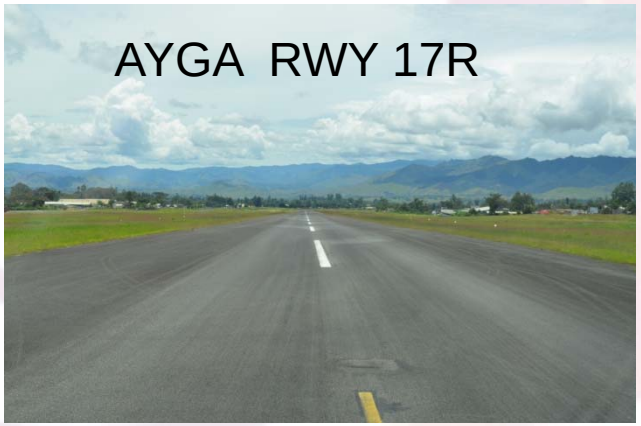
LINE TRAINING

Crew must demonstrate:

- Published instrument approaches into ports
- Visual approaches
- Minimum weather circuits
- Knowledge of escape procedures
- Knowledge of miss approach procedures
- Single Engine Procedures

STRATEGY 3 Assessment





GROUND ASSESSMENT

- Aircraft Technical
- Performance
- Weight and Balance
- Dangerous Goods
- Emergency Procedures
- Crew Resource Management

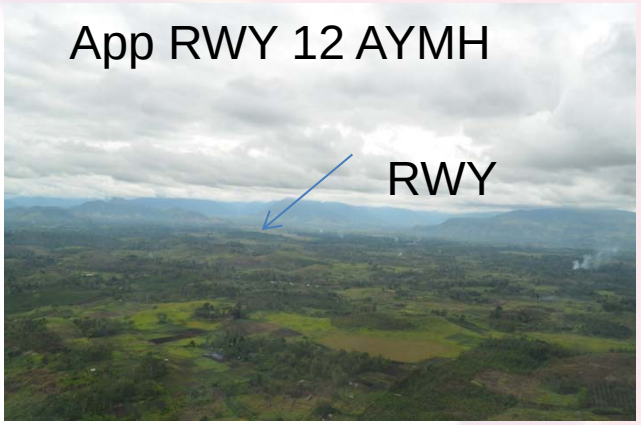
SIMULATOR ASSESSMENT

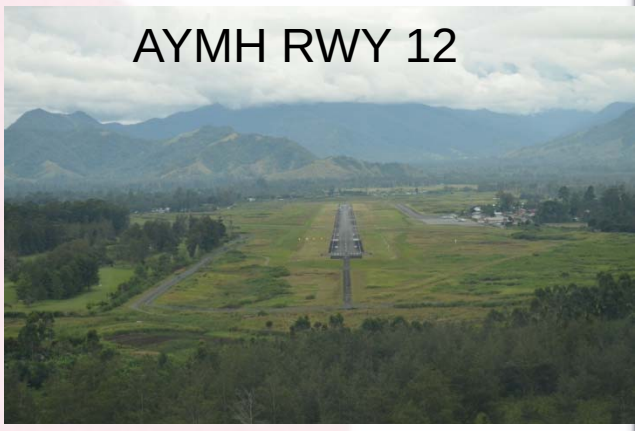
- Emergency Procedures
- Aircraft Handling
- Instrument Approaches
- Visual Approaches
- Minimum Weather Circuits
- Two Engine Missed Approaches
- Single Engine Missed Approaches

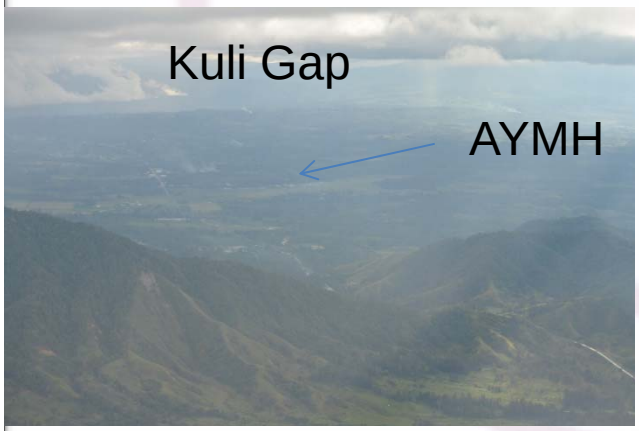
LINE CHECKS

- Emergency Procedures
- Aircraft Handling
- Instrument Approaches
- Visual Approaches
- Minimum Weather Circuits
- Two Engine Missed Approaches
- Escape Procedures

CASE STUDY
Mount Hagen AYMH







Documentation

- Route Guide Information - Drift Down, Port Details Etc...
- SOPM – Standard calls and procedures.
- Airport Information – This is also found in the Jepp charts, and VTC charts.
- FCOM Manuals -Caution and Restrictions with regards to aircraft type specific.


Mt Oga AYMH

Route Guide Information

Port Moresby – Mt Hagen (via SFI–SAP–KRM–PRV		Highest LSALT
Stage 1	Btn. PY and 60 DME/GPS MH: ➢ Rtn. to PY via PRV-KRM-SAP- SFI-298° R PY (Sector 'A' Arrival)	15,800'
Stage 2	BTN. 60 DME/GPS MH and 20 DME /GPS MH: ➢ Rtn. to PY via MFV-KRM-SAP- SFI-298° R PY (Sector 'A' Arrival)	15,800'
Stage 3	Btn. 20 DME/GPS MH and MH: ➢ Proceed to MH (Visual Arrival) If unable to land at MH: ➢ Proceed MH-MD via Ramu. (Adelbert Arrival)	15,800' 11,500'

Mt Hagen – Port Moresby (via IVORI–KUB–PY)		Highest LSALT
Stage 1	Btn. MH and 20 DME/ GPS MH: ➢ Right turn. Rtn. to MH via DCT. track or via KUTA Ridge (Visual Procedure) **Option 1:** ➢ Right turn. DTO Kikori – Moro (Moro NDB/DME Rwy 27) Note: Once Past 20 DME/GPS MH, Maintain Visual Separation with Terrain until through 9000'.	15,800' 15,800'
Stage 2	Btn. 20 DME/GPS MH and IVORI: ➢ Proceed to PY via DTO. KRM-SAP-SFI (Sector 'A' Arrival)	15,800'
Stage 3	Btn. IVORI and 100 DME PY: ➢ Proceed to PY via DTO. KRM-SAP-SFI (Sector 'A' Arrival)	14,000'
Stage 4	Btn. 100 DME PY and PY: ➢ Proceed to PY via KUB (Kubuna Arrival)	14,000'

Air Niugini
The National Airline of Papua New Guinea

Documentation

4.12 Mount Hagen, Papua New Guinea

1. Airport Details and Requirements

ICAO / IATA Designator [Elevation]	AYMH / HGU [5363 feet AMSL]
Runway: QDM / Approach Profile	12: 118° / 3x +5000 30: 298° / 3x +5400
Length / Surface / Slope	2190 metres / Seal, Groove / 0.7% down to SE
Requirements:	Use full length of runway on landing and execute max radius turns on threshold or prepared nodes

- Refer to AIP AGA & AIP Flight Supplement SAP for full details.

2. Nav / Com Frequencies

MH DME	115.0
MH NDB	1689
ATIS	128.4
HAGEN TOWER	120.5
AIR NIUGINI HAGEN	129.5 3836 7350 11092

- Refer to AIP Flight Supplement COM for applicable remarks.

3. General Information

- Aerodrome Traffic Zone: Hours of Operation 2000 – 0800 UTC.
- Approach Lighting – PAPIS: Manual switching by ATC during hours of operation (available with 5 stages of brightness).
- Rescue Fire Fighting Service: Category 5.
- Engine start clearance is required.
- To enhance timely dissemination of traffic information, details previously transmitted prior to taxi, including preferred initial outbound track through the ATZ, shall be included with the engine start request.
- Preferred runway for landing is Rwy 30, due uphill slope.
- Preferred runway for take-off is Rwy 12, due downhill slope.
- If brakes are hot after landing, release the parking brake after ensuring that chocks are in place.

4. Alternate Airport

- Nadzab is the primary designated alternate for Mount Hagen.

Documentation cont...

5. Special Take-Off Procedures

- Rwy 12 – Refer *AOPES*. Acceleration Altitude: 6300'.
- Rwy 30 – Refer *AOPES*. Acceleration Altitude: 6300'.

6. Cautions and Restrictions

- Bird hazard exists.
- Unauthorised movement of pedestrians and animals in and around the vicinity of the aerodrome.
- Rwy 30: Expect significant windshear 100 feet on approach when surface wind is S/SW above 15 knots.
- Rwy 30 AT-VASIS: Terrain clearance below the on-slope not guaranteed in the vicinity of Mount Yara (approx 3nm from threshold).
- Highlands operating procedures apply as follows:

Highlands Arrival

- Do not descend below 11,000 ft AMSL until within the Control Zone boundary, for light aircraft traffic separation. This requirement may be adjusted for weather or traffic.
- Maximum airspeed within 10 nm of the aerodrome is 230 KIAS.
- Avoid ducking under cloud cover on descent until aircraft is positively established with visual reference to the aerodrome.
- All circuits ideally flown at 7,000 ft on aerodrome QNH.

Highlands Departure

- ATZ and OCTA traffic advice must be received prior to take off.
- All climbs will be as required to achieve 11,000 ft AMSL by Control Zone boundary.

SPECIAL TAKE-OFF PROCEDURE

MT. HAGEN RWY 12 VISUAL

***** DAY VISUAL DEPARTURES ONLY *****

ONE ENGINE INOPERATIVE CONTINUED TAKE-OFF

*Procedures to be followed in the event of a **One Engine Inoperative** Continued Take-Off :*

1. **Maintain** and **TRACK** Runway Heading **118° M**.
2. At **0.8 DME** TURN **LEFT (20° AOB & V2+5)** & TRACK **298° M**.

   *Maintain Obstacle and Terrain Clearance/Avoidance **Visually**.*
3. LEVEL-OFF HEIGHT **6300 ft** QNH.
4. **VISUAL RETURN** and **LANDING -** Climb and Manoeuvre ***Visually*** as required for a Visual Return and Landing.

ALL ENGINES OPERATING

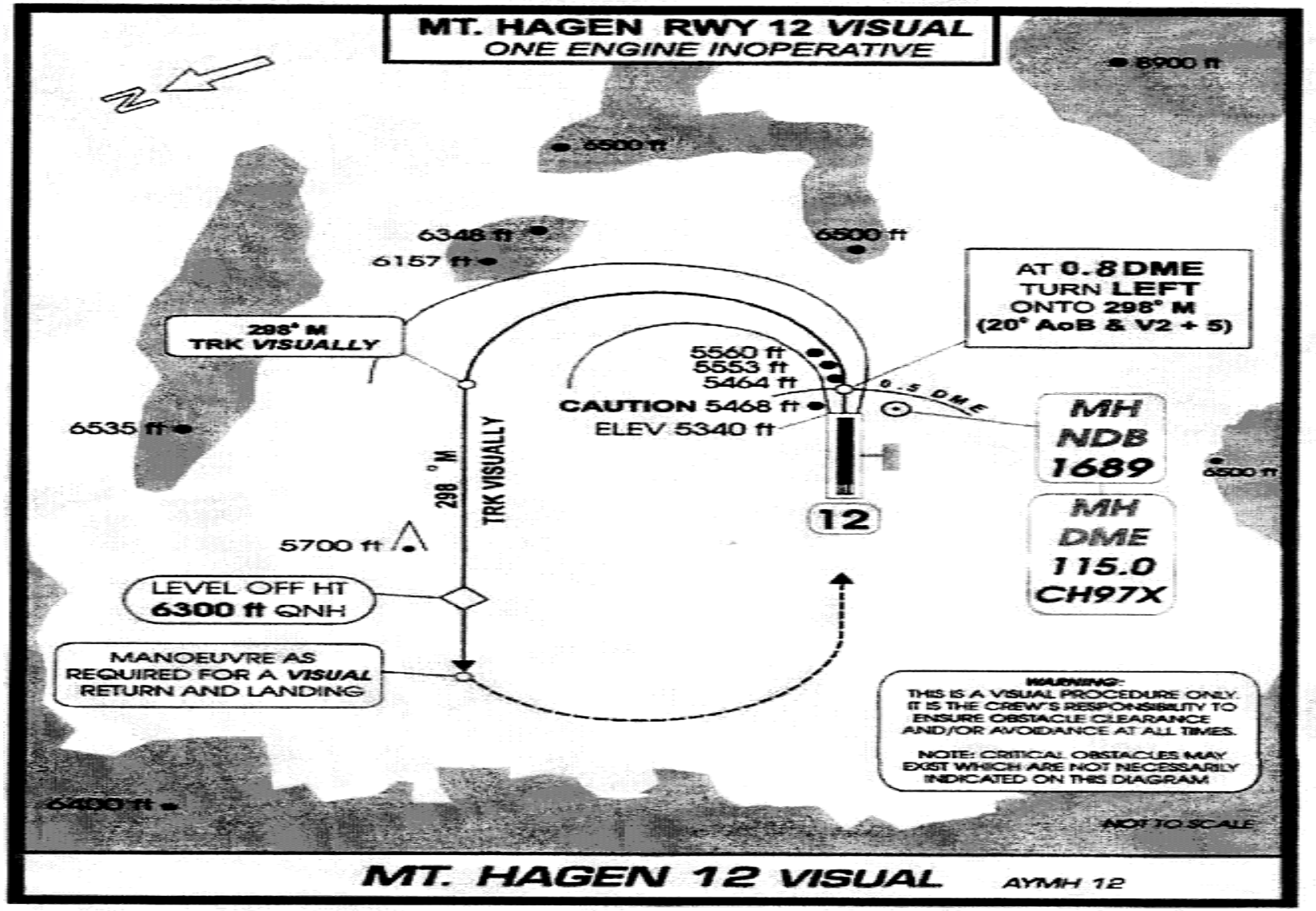
1. Maintain and TRACK Runway Heading 118° M.
2. After passing 6300 ft QNH proceed to Intercept Departure Track.

   ***Requirement** - Reach 6300 ft QNH by 0.8 DME and comply with all Specified Departure Climb Steps.*

   ***NOTE:** If **unable** to achieve 6300 ft QNH by 0.8 DME, commence a climbing **LEFT** TURN at 0.5 DME onto **330° M**, after passing 6300 ft QNH proceed to Intercept Departure Track.*
3. Minimum Flap Retraction Altitude 6300 ft QNH.

CAUTION - At all times visual minima specified for visual returns must be met and maintained. This is a ***Visual*** procedure, and as such has a visual return and landing phase which allows ***visual manoeuvring*** as required to achieve a safe and efficient return and landing. Responsibility for obstacle clearance and/or avoidance during this phase of flight rests entirely with the operating crew. Aircraft performance may be insufficient to ensure adequate clearance of all obstructions encountered during the visual manoeuvring phase and landing.

MT. HAGEN 12 VISUAL


MT. HAGEN RWY 12 VISUAL
ONE ENGINE INOPERATIVE
N
8900 ft
5500 ft
6348 ft
6157 ft
6500 ft
AT 0.8 DME
TURN LEFT
ONTO 298° M
(20° AoB & V2 + 5)
298° M
TRK VISUALLY
5560 ft
5553 ft
5464 ft
CAUTION 5468 ft
ELEV 5340 ft
0.5 DME
MH
NDB
1689
6535 ft
298 °M
TRK VISUALLY
6500 ft
12
MH
DME
115.0
CH97X
5700 ft
LEVEL OFF HT
6300 ft QNH
MANOEUVRE AS
REQUIRED FOR A VISUAL
RETURN AND LANDING
WARNING:
THIS IS A VISUAL PROCEDURE ONLY.
IT IS THE CREW'S RESPONSIBILITY TO
ENSURE OBSTACLE CLEARANCE
AND/OR AVOIDANCE AT ALL TIMES.
NOTE: CRITICAL OBSTACLES MAY
EXIST WHICH ARE NOT NECESSARILY
INDICATED ON THIS DIAGRAM
6400 ft
NOT TO SCALE
MT. HAGEN 12 VISUAL
AYMH 12

Conclusion

Air Niugini adopts three fundamental strategies to reduce the risk of a serious events while conducting circling and miss approaches on domestic flights within PNG. These strategies are:

- Documentation
- Training
- Crew Assessment

Questions or Suggestions?