

- (3) The Certificate of Release to Service shall also relate to the task specified in the manufacturer's maintenance manuals and publications, in conjunction with approved company Maintenance Programme and schedules.
- (4) The Certificate of Release to Service shall be issued before the flight at the completion of any maintenance.
- (5) New defects or incomplete maintenance identified during the above maintenance (4), shall be brought to the attention of the CEO for the specific purpose of obtaining agreement to rectify such defects or completing the missing elements of the maintenance. In the case where the CEO declines to have such maintenance carried out under this paragraph, paragraph (7) is applicable.
- (6) The person issuing the Certificate of Release to Service should use his/her full signature, and preferably a certification stamp. In addition, the certifying person should use his/her License number and/or company authorisation number.
- (7) By derogation to paragraph (1), when the organisation is unable to complete all maintenance ordered, it may issue a certificate of release to service within the approved aircraft limitations. The organisation shall enter such fact in the aircraft certificate of release to service, before the issue of such certificate.
- (8) By derogation to paragraph (1) and Part 5.6 & 5.7 of this MOE, when an aircraft is grounded at a location other than our maintenance facility in Kimbe, due to the non-availability of a component with the appropriate release certificate, it is permissible to temporarily fit a component without the appropriate release certificate for a maximum of 30 flight hours or until the aircraft first returns to Kimbe, whichever is the sooner, subject to the CEO agreement and said component having a suitable release certificate but otherwise in compliance with all applicable maintenance and operational requirements. Such components shall be removed by the above prescribed time limit unless an appropriate release certificate has been obtained in the meantime under paragraph (1) and Part 5.6 & 5.7 of this MOE.

5.12 Authorised Release Certificate Procedures

Rule reference

Part 145.119(a)(8)(xi) & Part 145.109(b)(7)

Responsibility

CE

Part 21.71 requires that, all products new or overhauled, or products last installed on an aircraft possessing a valid standard or restricted airworthiness certificate and is fit for release to service, must be issued and supplied with an "Authorised Release Certificate" when exported to a Part 145 Maintenance Organisation.

5.3 Appendix C: Flight Operations

5.3.1 Engine failure procedure

TC APPROVED

BHT-427-FM-2

Section 3

EMERGENCY/MALFUNCTION PROCEDURES

3-1. INTRODUCTION

Following procedures contain indications of failures or malfunctions which affect safety of crew, helicopter, ground personnel or property, use of emergency features of primary and backup systems, and appropriate warnings, cautions, and notes. Table 3-1 lists fault conditions and corrective actions for warning lights. Tables 3-2 and 3-3 list fault conditions and corrective actions for caution/advisory lights. MASTER W/C light flashes and a single audio tone occurs when any warning or caution message on IIDS is triggered.

Exceedance letter "E" will disappear when acknowledged by depressing MASTER W/C light. EXCEEDANCE message is latching and will extinguish after memory is cleared through maintenance action or both engines are started. IIDS RCL button may be used to recall last unacknowledged message. Last unacknowledged message is stored until shutdown of the IIDS. All procedures listed herein assume pilot gives first priority to helicopter control and a safe flight path.

Helicopter should not be operated following any emergency landing or emergency shutdown until cause of malfunction has been determined and proper corrective maintenance action taken.

3-2. DEFINITIONS

Following terms indicate degree of urgency in landing helicopter:

LAND AS SOON AS POSSIBLE	Land without delay at nearest suitable area (i.e., open field) at which a safe approach and landing is reasonably assured.
---------------------------------	--

LAND AS SOON AS PRACTICAL	Landing site and duration of flight are at discretion of pilot. Extended flight beyond nearest approved landing area is not recommended.
----------------------------------	--

Following terms are used to describe operating condition of a system, subsystem, assembly, or component.

Affected	Fails to operate in intended or usual manner.
Normal	Operates in intended or usual manner.

3-3. ENGINE

3-3-A. SINGLE ENGINE FAILURE

WARNING

IF 30 SECOND POWER IS INSUFFICIENT, SELECTION OF OEI LIMIT OVRD SHOULD ONLY BE UTILIZED AS A LAST RESORT. RETURN TO NORMAL OPERATING LIMITS IN LESS THAN 20 SECONDS. LAND AS SOON AS POSSIBLE.

NOTE

Failure of an engine causes operating engine to assume all power requirements. Normal control system overshoot allows good engine MGT, NG, or engine torque to exceed OEI 30 second limits transiently. This transient overshoot does not damage good engine.

ECCN EAR99

24 MAY 2012 Rev. 11

3-3

NOTE

- OEI LIMIT switch operation is inhibited during AEO conditions.
- 2 MIN POWER or LIMIT OVRD message illuminates when FADEC OEI limiter is not at 30 second limit setting.

Selection of 2 MIN position (2 minute OEI limit setting) is enabled only when within 30 second power range. Subsequent reduction in power to maximum continuous OEI power automatically resets FADEC OEI limiter to 30 second limit setting without repositioning OEI LIMIT switch. To reinvoke 2 MIN FADEC OEI limiter, OEI LIMIT switch must be positioned to 30 SEC and back to 2 MIN while within 30 second power range.

All bleed air systems automatically shut down following an engine failure. Heater may be regained by positioning HTR/OVRD switch to OVRD.

● INDICATIONS:

- ENG OIL PRESS message illuminated.
- ENG OUT light illuminated.
- FUEL PRESS light illuminated.
- GEN message illuminated.
- IIDS displays OEI mode.
- N_G below 50%.
- N_P below 50%.
- MGT decreasing.
- Q decreasing.

3-3-A-1. HOVERING IN GROUND EFFECT

● PROCEDURE:

1. Maintain heading and landing attitude.
2. Collective — Adjust to control rate of descent and landing. Upon ground

3-4 Rev. 11 24 MAY 2012

contact, collective shall be reduced smoothly while maintaining cyclic in neutral or centered position.

3-3-A-2. HOVERING OUT OF GROUND EFFECT

● PROCEDURE:

1. Maintain heading and landing attitude.
2. Collective — Adjust to control N_R .

If insufficient power to fly away:

3. Collective — Adjust to control N_R , rate of descent, and landing. Upon ground contact, collective shall be reduced smoothly while maintaining cyclic in neutral or centered position.

If sufficient power to fly away:

4. Collective — Adjust to begin climb.
5. Airspeed — Increase to V_Y , 60 KIAS.
6. Follow inflight procedure, [paragraph 3-3-A-3](#).

3-3-A-3. INFLIGHT

● PROCEDURE:

1. Collective — Adjust to control N_R and desired power.
2. Airspeed — Maintain V_Y (60 KIAS) or higher.

NOTE

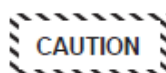
If cause of failure is known and restart is to be attempted, refer to [paragraph 3-3-B, ENGINE RESTART INFLIGHT](#).

3. Throttle (affected engine) — IDLE, then OFF (closed).
4. FUEL INTCT switch — FUEL INTCT, as desired.

ECCN EAR99

5. INTCT BUS switch — INTCT BUS as desired.
6. AMPS — Maintain within limits.
7. HTR/OVRD switch (if installed) — As desired.
8. Land as soon as practical.
8. Oil pressure (affected engine) — Pressure indication above 40% N_G .
9. HTR/OVRD switch (if installed) — As desired.
10. PART SEP switch — As desired.

3-3-B. ENGINE RESTART INFLIGHT



IF CAUSE OF ENGINE FAILURE IS OBVIOUSLY MECHANICAL, AS EVIDENCED BY ABNORMAL SOUNDS, DO NOT ATTEMPT RESTART.

3-3-B-1. ENGINE RESTART, FADEC AUTOMATIC MODE

● PROCEDURE:

NOTE

If time does not permit checking for proper switch and throttle position, pilot may attempt inflight restart by simply engaging START switch to affected engine after N_G has dropped below 20%.

1. Throttle (affected engine) — FLY.
2. FUEL VALVE switch (affected engine) — ON.
3. FADEC mode switch (affected engine) — AUTO.
4. HTR/OVRD switch (if installed) — OFF.
5. PART SEP switch — OFF.
6. START switch (affected engine) — START.
7. Engine instruments (both engines) — Monitor.

3-3-B-2. ENGINE RESTART, FADEC MANUAL MODE



DURING STARTS IN MANUAL MODE THERE IS NO AUTOMATIC MGT LIMITING

● PROCEDURE:

NOTE

Prior to attempting a MANUAL restart, perform an electrical reset by cycling affected engine FADEC circuit breaker. If FADEC faults are cleared, restart should be attempted in AUTO mode. If faults are not cleared, restart should be attempted in MANUAL mode.

1. Throttle (affected engine) — FLY.
2. Fuel valve switch (affected engine) — ON.
3. FADEC mode switch (affected engine) — MANUAL.
4. HTR/OVRD switch (if installed) — OFF.
5. PART SEP — OFF.
6. START switch (affected engine) — START.
7. Engine instruments (both engines) — Monitor.

5.3.2 Company Exposition Matrix and Section 5

Ballina Limited – Company Exposition

3. Maintenance Requirements			119.51(b)(1)(vi)	3.1.5(c)	3.16
91.603(1-9)	5.1	5.3	119.51(b)(2)	3.1.5(c)	3.16
91.605(a)(1)(2)(3)	5.2	5.4	119.51(d)	3.1.5(c)	3.16
91.607	5.14	5.12	119.51(e)	3.1.5(c)	3.16
91.609	5.15	5.13	119.53(a)(1)	3.1.5	3.16
91.611	5.3	5.5	119.53(a)(2)	3.1.5	3.16
91.612	5.6	5.6	119.53(b)(1)	3.1.5	3.16
91.613	5.10	5.9	119.53(b)(2)	3.1.5	3.16
91.615	5.11	5.10	119.53(b)(3)	3.1.5	3.16
91.616(1-4)	5.17	5.16	119.55(a)(1)	2.6	2.11
91.617(a-c)	5.16	5.14	119.55(a)(2)(i)	2.6	2.11
91.619	5.17	5.16	119.55(a)(2)(ii)	2.6	2.11
91.621(a)(b)	5.20	5.21	119.55(b)(1)(ii)	2.6	2.11
91.623(a)(b)	5.18	5.17	119.63(a)	2.9	2.17
91.623(c)	5.18	5.17	119.63(b)(1)	2.9(b)	2.17
91.625	N/A	N/A	119.63(b)(2)	2.9(a,b)	2.17
91.627(a)(1,2)	N/A	N/A	119.63(b)(3)	2.9(b)	2.17
91.629(a-c)	N/A	N/A	119.63(b)(4)	2.9(b)	2.17
91.631	N/A	N/A	119.63(b)(5)	2.9(b)	2.17
91.633	N/A	N/A	119.65(1)(i)	2.8	2.15
119.59(a)(b)	5.21	5.21	119.65(1)(ii)	2.8	2.15
119.59(c)(1-5)	5.21	5.21	119.65(1)(iii)	2.8	2.15
119.59(c)(6-10)	5.21	5.21	119.65(2)(i)	2.8	2.15
119.59(c)(11-15)	5.21	5.21	119.65(2)(ii)	2.8	2.15
119.61(a)	5.22	5.22	119.65(2)(iii)	2.8	2.15
119.61(b)(1)	5.22	5.22	119.65(2)(iv)	2.8	2.15
119.61(b)(2)(i)	5.22	5.22	119.65(3)(i)	2.8.2	2.16
116.61(b)(2)(ii)	5.22	5.22	119.65(3)(ii)	2.8.2	2.16
119.61(b)(3)	5.22	5.22	119.67(1)	2.6	2.11
119.61(b)(4)	N/A	N/A	119.67(2)	2.6	2.11
119.61(b)(5)	N/A	N/A	119.71	3.1	3.3
119.61(b)(6)	N/A	N/A	119.73	3.2	3.31
119.61(b)(7)	N/A	N/A	119.75(a)(1)(i)	2.2	2.4
119.61(c)	N/A	N/A	119.75(a)(1)(ii)	2.2	2.4
136.603(b)	5.23	5.24	119.75(a)(2)	2.3	2.7
136.605(a,b,c)	5.24	5.25	119.75(a)(3)	3.1.5(c)	3.16
			119.75(a)(4)	2.2	2.4
			119.75(a)(5)	2.2	2.4
			119.75(a)(6)	3.1.5(a)	3.8
			119.75(a)(7)	3.1.5(a)	3.8
			119.75(a)(8)	2.2.1	2.4
			119.75(a)(9)	2.6	2.11
			119.75(a)(10)	5.1	5.3
			119.75(a)(11)	5.1	5.3
			119.75(a)(12)	5.1	5.3
			119.75(a)(13)	3.1	3.3
			119.75(a)(14)	3.2	3.31
			119.75(a)(15)	N/A	N/A
4. Air Operator – Certification					
119.51(a)(1)	2.3(a)	2.7			
119.51(a)(2)(i)	2.3(b)	2.7			
119.51(a)(2)(ii)	2.3(a)(b)	2.7			
119.51(a)(2)(iii)	2.3(a)(b)	2.7			
119.51(a)(3)	2.4	2.9			
119.51(b)(1)(i)	3.1.5(b)	3.9			
119.51(b)(1)(ii)	3.1.5(b)	3.9			
119.51(b)(1)(iii)	3.1.5(c)	3.16			
119.51(b)(1)(iv)	3.1.5(c)	3.16			
119.51(b)(1)(v)	N/A	N/A			
119.51(c)	3.1.5(c)	3.16			

5 – Maintenance

Title	Page No
5 Maintenance	5.1
5.1 Maintenance Requirements	5.2
5.2 Required Inspections	5.3
5.3 Maintenance Control Manuals	5.4

5.3.3 Form SMS 14 maintenance Flight Check Sheet



Ballina Limited
Maintenance Organisation Exposition
No. 145/017

APPENDIX 1

FLIGHT CHECK SHEET (Bell 427)

Form BL005-B427

W.O.# _____

"IAW CAR91.613"

Check No. _____

Start Time: _____	< Duration of Test Flight >	Finish Time: _____	TOTAL _____
_____		_____	_____

Airframe: P2- _____ Model: BELL427 Total Hrs.: _____ Landings.: _____ ROL: _____
 #1 Eng. S/N: PCE- _____ Model: PW207D Total Hrs.: _____ Total Cyc.: _____
 #2 Eng. S/N: PCE- _____ Model: PW207D Total Hrs.: _____ Total Cyc.: _____

Handling Qualities								
Auto Rotation RPM Check	Hp Check Alt (set 29.92) Feet	OAT °C	NR %	Gross Weight			Limitations Within minimum operational density altitude as per manual Graphs for target RPM Refer to: B427 – Fig. 4.2	
				A/C Empty Weight	Fuel on Board	Crew		Total
	#1							
	#2							
Flight Controls	Freedom of Movement with Minimum Friction	Pedal Stop PTT Switch Light extinguished below 50±5 KIAS	Pedal Stop PTT Switch Light illuminated above 55±5 KIAS	Engine Controls	Throttle Frictions	Reference: Use attached Table 18-11 & Figure 18-2 to calculate & plot data recorded for Autorotation limits.		
	Satisfactory	Satisfactory	Satisfactory		Satisfactory			

Rotor System Vibration Analysis						
Main Rotor System	REASON:			CORRECTIVE ACTION:		
	Ground FA Final Run		Hover Final Run		Flight Final Run	
	TRACK (0.5 in. Spread max)	Spread	Vert. Spread	FA	60Kts Vert.	130Kts Vert.
	Balance					
	Degrees					
	IPS					
Limitations Vibration Levels acceptable @ .2 IPS or Less Instructions Use MicroVibs System to accomplish satisfactory results						

Additional Checks			
Items To Check	#1	Item:	Task:
	#2	Item:	Task:
	#3	Item:	Task:
	#4	Item:	Task:
	#5	Item:	Task:

5.4 Appendix D: Search and Rescue

5.4.1 P2-HSG Emergency Locator Transmitter



5.4.2 PNG ASL Chronology of SAR events

P2-HSG (B427) Chronology of SAR Events		
No.	Time	Information
1	11:45hrs	<ul style="list-style-type: none"> Huon Sector declared INCERFA at 11:43hrs and advised CS-RCC of overdue missing Helicopter. C/S: P2HSG B427 DEP: Kokopo (0421S15217E) DEST: Kimbe (0533S15009E) DOF: 190810 ATD: 10:02hrs ETA: 11:10hrs ENDCE: TBA Last reported position- Bialla at time 10:49hrs at 8000 feet on Frequency 127.1MHz Distress COSPAS-SARSAT received at 11:26hrs confirmed ELT activation at position 05 30 09S, 150 18 00E (Probable Detection area) SAR Phase upgraded to Distress.
2	11:46hrs	<ul style="list-style-type: none"> ARCC Activated ARCC Coordinator (Mr. [redacted]) called out. NMSA MRCC was alerted to check and notify the nearby vessels within the vicinity of ditch site for possible sightings of wreckage and person in water. LKP 05 30 09S 150 18 00E. NMSA deployed search asset (23-foot banana boat) to conduct search. ARCC requested on-scene weather condition from MRCC through SAR asset/personnel.
3	11:50hrs	<ul style="list-style-type: none"> ARCC called Operator Niugini Helicopter to confirm report of possible ditching. Company rep [redacted] confirmed report of helicopter ditching in water with one person on board (PIC). Company also deployed a search asset (23ft boat) to the incident site. Aircraft Characteristics: Twin engine, White Fuselage, White blue stripe tail, Reg P2-HSG Continuous Communication maintained with NMSA/MRCC [redacted], Niugini Helicopter Rep and ATS-FIS.
5	1305hrs	<ul style="list-style-type: none"> Hoskins Airport Air Niugini staff reported to ATC the sighting of the distressed helicopter (P2-HSG) ditching into the water.
6	1306hrs	<ul style="list-style-type: none"> Centre Supervisor/RCC notified PNGASL management. [redacted] on the Distress event and related on-going SAR action.
7	1312hrs	<ul style="list-style-type: none"> ATC/FIS received information from Company CEO and advised ARCC that the person on board has been spotted and rescued from the incident site with minor injuries sustained.
8	1315hrs	<ul style="list-style-type: none"> CS/ARCC called Company CEO to check and confirm Pilot's physical condition and the CEO advised that the Pilot was safe and recovering from minor injuries. CEO further advised and confirmed that the arrangement was in place to salvage the wreckage.
9	1321	<ul style="list-style-type: none"> CS/ARCC provided updated information to PNGASL Management [redacted]
10	1324	<ul style="list-style-type: none"> CS/ARCC provided updated information to NMSA-MRCC on SAR incident and cautioned MRCC for any hazardous objects on site. CS/ARCC terminated the SAR action.

5.4.3 Civil Aviation Act 2000 (As Amended in 2016), Sections 8A and 8B

“8A. SEARCH AND RESCUE OPERATIONS.

(1) The Minister -

- (a) shall establish, maintain, and operate a search and rescue co-ordination centre to co-ordinate and conduct aviation search and rescue operations; and
- (b) may exercise any powers that may be necessary or desirable -
 - (i) for effective co-ordination and performance of a search and rescue operation specified in Subsection (1); and
 - (ii) to implement any international convention or agreement relating to search and rescue to which Papua New Guinea is a party; and
- (c) may appoint persons to, either generally or in any particular case, participate in or co-ordinate a search and rescue operation specified in Paragraph (a).

(2) The Minister may authorise the payment, out of money appropriated for the purpose by Parliament, of an amount that the Minister considers appropriate to -

- (a) any person who assisted in a search and rescue operation specified in Subsection (1)(a) at the request of a person appointed under Subsection (1)(c); or
- (b) the owner of any vehicle, ship, or aircraft used in a search and rescue operation specified in Subsection (1)(a) in response to a request by a person appointed under Subsection (1)(c).

8B. MINISTER MAY DIRECT AGENCIES WITH RESPECT TO SEARCH AND RESCUE OPERATIONS.

The Minister may direct CASA, Papua New Guinea ASL or any government agency for which the Minister is responsible and whose functions are consistent with search and rescue operations, to do any or all of the following:

- (a) operate and maintain the search and rescue co-ordination centre established under Section 8A(1)(a); or
- (b) co-ordinate, or participate in the co-ordination of any search and rescue operation specified in Section 8A(1)(a); or
- (c) perform, or participate in the performance of any search and rescue operation specified in Section 8A(1)(a); or
- (d) exercise any or all of the powers of the Minister under Section 8A(1)(b) and (c) and Section 8A(2), as duly authorised by instrument of delegation.”

5.4.4 MAT SAR 4-2 Appendix 1 SAR Phases in time sequence

MATS

SAR – 4 – 2
25 JUL 2013

EMERGENCY	COMMENCE COMMUNICATION CHECKS	DECLARE UNCERTAINTY PHASE	DECLARE ALERT PHASE	DECLARE DISTRESS PHASE
(d) Position or schedule, or call after a frequency change:	Within 3 minutes after report is due			
(e) In reply to a call by a ground station, when listening watch is required (f) Arrival by radio-equipped aircraft at a non-controlled aerodrome - (i) at ETA (ii) after landing, by aircraft which have indicated intention to report after landing 2.2 Arrival having nominated SARTIME 2.3 After subsequent checks and enquiries to other relevant sources fail to reveal news of the aircraft 2.4 After widespread communication checks and unsuccessful enquiries indicate probability that the aircraft is in distress	Within 3 minutes after call Within 3 minutes after ETA Within 10 minutes after CIRA Within 5 minutes prior to SARTIME	Within 15 minutes after call Within 15 minutes after ETA Within 3 minutes after CIRA At SARTIME	Immediately condition is recognised	Immediately condition is recognised

5.5 Appendix E:

5.5.1 Appendix seven: FLIGHT FOLLOWING CHECKLIST

Ballina Limited – Company Exposition

**APPENDIX FIVE: INITIATE THE
SEARCH PROCEDURE**

**The Opns Mgr is to co-ordinate the Search procedure.
If OM is unavailable, Senior Mgmt at Kimbe Base are to
co-ordinate the Search procedure.**

SEARCH PROCEDURE CHECKLIST:

Ensure all available Senior Persons are notified and assisting in the process:

Operations Manager & Chief Pilot – Bill Lusty
Chief Executive Officer – Craig Dymke
Chief Engineer – Gerry Laprarie
Maintenance Controller – Alfie Grouse
Safety Officer & Occurrence Investigation Officer – Roger Dymke
and Client (as relevant) (note – senior persons as at Jan 2017)

1. Declare an emergency in the area, to aid in the search for the missing helicopter, by calling in to Air Traffic Services via HF radio on:
 - i) Freq 8861 – New Britain, islands & Western Province,
 - ii) Freq 6622 – POM to Lae (up to Madang),
 - iii) Freq 6538 – Wewak and Sepik (to Madang and Goroka), or on Company Freq: 8971 KHZ (Kimbe / Kokopo), or use FM / VHF.
2. Then Contact:
 - a. Air Traffic Services (by telephone to confirm known details)
 - b. Kimbe Operations Phone: 983 5163
 - c. Rescue Co-ordination Centre Phone 325 8704 (24 hrs)
 - d. CASA – Accident Investigation Phone +675 325 7320
3. Direct search to missing helicopter's last known flight path, using data from Spider Tracks as available. Co-ordinate and control the search aircraft that are called / or arrive at the search to the most effective means. Avoid excess aircraft in search. Liase with AMSA in Aust. for assistance with search grids.
4. As each search aircraft arrives, direct crews to cover a defined area progressing further away from the last known location of the missing helicopter. Use rule of thumb of 2nm/min and ETA to determine appropriate search area. Refer to ERP notes on proper search patterns selected. Monitor for ELT or PLB signals during search. Direct ground search units as needed.

Revision 4 Re-issue 2

Effective date of page, Feb 2017

-3.72-