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Feed*Back* is published quarterly by the Continuing Airworthiness Division of Transport Canada, informing the aviation community of reported day-to-day problems that affect aircraft airworthiness in Canada.

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The articles contained in **FeedBack** are derived from Service Difficulty Reports (SDRs) submitted by Aircraft Maintenance Engineers (AMEs), owners, operators and other sources in accordance with *Civil Aviation Regulation* (CAR) 591.

Service Difficulty Reports (SDR) are normally published verbatim. Transport Canada assumes no responsibility for the accuracy or content of any of these reports. Only grammatical or spelling errors are corrected and content may be reduced as well as personal references deleted.

All defects or occurrences should be reported to Transport Canada through the Service Difficulty Reporting Program. For additional information about this program or concerning an article in feedback magazine, contact your nearest Transport Canada Centre.

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TP 6980E

FIXED WING

AIRBUS A340

SDR # 20060511002

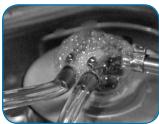
Passenger Oxygen Manifold Cracked

Twenty-two (22) manifolds were found cracked on this aircraft. The submitter looked at another aircraft to provide spares, but found most of its manifolds cracked too.

The vendor was contacted and will provide replacements. The manifold is made of a variety of plastic, which is brittle.

Transport Canada advises maintenance personnel, that when inspecting these types of oxygen manifolds to examine for potential cracks. **





BEECH B1900

SDR # 20060510007

Emergency Exit Door Handle Corroded

While conducting the interior cabin portion during Phase 3 inspection, it was discovered that both right emergency exit doors would not open from the inside. The two doors were removed via the exterior handle and disassembled.

Upon inspection it was found that the right coupling, P/N 129-514065-2, was mated to the shaft, P/N 129-514033-2, at all times. The handle linkage was removed and disassembled and it was found that there was just enough surface corrosion on the external surface of the shaft and internal surface of the coupler to keep the exterior handle engaged at all times.

The coupler was removed from the shaft and the surface corrosion removed. The unit was reassembled and the emergency exit handle function tested serviceable.

The discovery of this defect underlines the importance of conducting inspection to avoid potentially very serious problem in emergency egress evacuation.

CESSNA 185

SDR # 20060116007

Flap Pulley Bracket Detached

Upon approach to landing on the lake, the aircraft immediately began to roll to the left when flaps 10 were selected. The pilot returned flaps to zero and the aircraft returned to level flight.

The pilot tried to deploy flaps again (slowly) and observed that while the right flap deployed normally, the left flap did not move. The aircraft then returned to a land-based airport where a flapless landing was carried out with no further problems.

Once on the ground the pilot selected flaps 10 and noted while the right flap deployed immediately, the left flap slowly fell to position. Maintenance discovered the flap pulley bracket (L/H) at sta. 65.33 was detached from the bulkhead assembly causing the flap to malfunction.

Transport Canada has received 30 SDR's since 1981 on this bracket. AME's are reminded to carefully inspect this area where small cracks on these brackets can rapidly develop into complete failure. Removal of the bracket may be necessary during this inspection.





DE HAVILLAND DHC 2

SDR # 20060619007

Strobe Light Electrical Terminal Arcing

The pilot of a DHC 2 (Beaver) reported strobe light circuit breaker (C/B) popped during flight. Troubleshooting revealed that an incorrect C/B had been installed (5 amp instead of 7.5 amp). A new C/B was installed at that time and ground checked "serviceable".

Several months later, the problem recurred during flight, but ground-checked "ok". The wing tips were removed and they noted evidence of arcing from the tank inboard wall/rib and wing tip boss terminal strip studs. Statically there was no contact, however, with tanks full of fuel during flight, contact occurred. The studs on the boss bar have sufficient length to trim 0.25" and still remain in safety.

The tips were re-installed with putty on the studs to verify clearance, and when removed, approximately 0.3" clearance was evident.

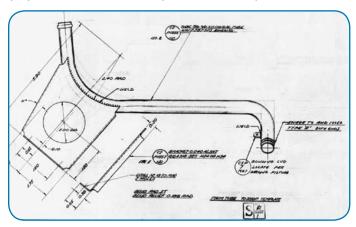
Transport Canada recommends that maintainers verify adequate clearances exist the next time it is accessed for indications of arcing. Verification of the proper size circuit breaker must be installed.*

Forward Fuel Tank Vent Tube Leakage

The front fuel tank vent tube was found disconnected from the rubber bladder. The hose clamp was tight but the tube was able to work itself from the bladder causing fuel leakage and vapors to escape from the bladder.

While investigating this occurrence, it was noticed that this vent tube, which had a de Havilland part number did not have a flare on the end, even though the de Havilland drawing, P/N C2P1551A, clearly shows this flared end. This part was replaced with a new de Havilland unit.

This reported difficulty was forwarded to the type certificate holder for review. When troubleshooting a fuel smell or evidence of a fuel leak in this area, this fuel vent tube may be the source.





DE HAVILLAND DHC 3

SDR # 20060615005

Wheel/Ski Attach Bolts Cracked

While performing main landing gear (MLG) wheel/ski removal and changing to wheels-only on a single Otter DHC-3T, maintenance found the right wheel/ski attach bolt part number, C3US156-3, broken. This bolt attaches the ski bracket assembly link, part number C3US108-34, to the MLG strut and axle.

The bolt had failed at the start of the radius where the diameter of the bolt changes from .500" diameter, to .750" diameter. It appears that the bolt failure occurred on the tooling mark. This is our second occurrence within 59.4 hours and 115 cycles.

Canadian airworthiness directive CF-69-12 was issued to detect cracks and preclude failures of the bolts attaching the

upper end of the axle struts to the fuselage, P/N C3U72-3, and the bolt attaching the upper end of the compression strut to the fuselage, P/N C3U142-3, on DHC-3 Otter aircraft operating on skis or wheel-skis. However, there does not seem to be inspection requirements related to the lower attach bolts as mentioned by the submitter of this SDR.

The type certificate holder for the DHC-3 has been notified of these occurrences and is presently investigating. Transport Canada recommends inspection of the lower attach bolts as a preventive maintenance action.

DE HAVILLAND DHC 7 AND DHC 8

SDR # 20060717007

Fluorescent Lamp Ballast Problems

Shortly after re-instating power during a "C" check on a DHC 7 aircraft, a strong burning smell was noted in the forward section. The fault was traced to a lamp holder at the front of the cabin in the overhead lighting system. The lamp holder had suffered serious overheating resulting in the melting of the contacts with associated heat damage to the insulated portion of the holder. The fluorescent tube had also suffered damage to the contact pins. The fluorescent tube had not been disturbed during maintenance nor did the lighting circuit breakers trip.

Currently there are four confirmed failed units on this aircraft with several more possibilities under investigation. There is no evidence of arcing on the other lamp holders. The aircraft is fitted with ballasts; manufactured by Bruce Industries, part numbers BA08006-1 and BA08006-28-1.

Whilst investigating sources of replacement units, it was noted that there was an Canadian airworthiness directive (AD) (CF 2004-26) applicable to the DHC 8 that forbids the fitting of these part numbers as a replacement after failure. There is currently no AD in force for the DHC 7.

The type certificate holder is investigating these incidents and their similarity to a related issue covered by CF 2004–26, which is applicable only to the DHC 8 aircraft.

Transport Canada recommends that any evidence of smoke or a burning smell in the locations of the lamp holders be investigated with this reported defect in mind.

Similar defect or occurrences should be reported to Transport Canada, Continuing Airworthiness, Ottawa, via the Service Difficulty Reporting program.

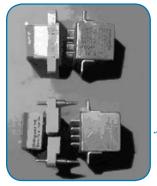
DE HAVILLAND DHC 8

SDR # 20060320005

Landing Gear Door Sequence Relay Socket Broken

During a "C" check, the functional check on task card 3230/15 (operational check of landing gear door sequence control circuit) did not work. After investigation, relay (3260-K9) socket found broken and pins holder socket unglued. Wires were found hanging loose, thereby creating

a high risk of contact with airframe structure that could result in an electrical short. Additionally, the damaged relay could cause "weight on wheels" (WOW) circuit failure and possibly cause landing gear extension problems in the emergency alternate release landing gear selection.



The relay in question is used in multiple systems throughout the aircraft. Be vigilant during inspection for this reported defect in area other than mentioned above. This defect has been forwarded to the type certificate holder.

DE HAVILLAND DHC 8-100

SDR # 20060801008

Flap Torque Tube - Severely Chafed

During a line maintenance walk-around check, the aircraft maintenance engineer found that the left wing flap inboard (section between nacelle and fuselage) torque tube had been chafed through in one spot by its retaining bracket. Torque tube assembly part number 734187B replaced with serviceable assembly. Functional test completed on flap system and aircraft returned to service.



The torque tube chafing in this area does not seem to be a common occurrence. The chaffing had sufficient time to wear through the thickness of

the torque tube and, if not inspected at that time, failure was imminent.

Transport Canada recommends paying particular attention while carrying out visual inspections in this area. Report any findings that are a service difficulty as defined in the Airworthiness Manual 591, Service Difficulty Reporting.

EMBRAER EMB 110P1

SDR # 20060810006

Elevator Torque Tube Cracked

While doing an inspection of the left elevator and its associated parts, a crack was found on the elevator balance weight support. The crack measured 2 3/8 of an inch in length and started approximately 2 inches below the lower through-tube. The balance support was replaced with a new one.





ENGINES

AVCO-LYCOMING LTS-101-600A-2 (AS350)

SDR # 20060612006

Engine Overspeed Limiter

The rotorcraft was on final approach to the staging area when, at approximately 300 feet AGL, the pilot head the low rotor RPM horn activate and the engine began to lose power. A successful autorotation landing was carried out.

After landing, the engine was still running and once the collective lever was lowered, the engine returned to full power. The pilot tried raising the collective and each time he did so, the engine would decelerate and the main rotor RPM would decay until the collective was lowered again.

The aircraft was shut down and examined by the maintenance engineer on site. No defects were found so the aircraft was started and appeared to operate normally. The pilot was able to hover the aircraft without any adverse symptoms. The previous systems could not be duplicated and the definite cause of the engine

deceleration remained unknown. As a precautionary measure, all engine control components were replaced before further flight.

Further to the above, the SDR submitter provided recent SDR updates stating that the cause of the engine deceleration was due to many worn parts within the engine Overspeed Limiter.

The SDR database revealed several other failures of the subject overspeed limiter. *

CFM INTERNATIONAL CF34-3A1 [CL600 2B19 (RJ100)]

SDR # 20060607003

Variable Guide (VG) Vane Assembly - Spindle Nuts

The aircraft was climbing through 2000 feet when the left fan speed (N1) began to decay followed by engine failure. An emergency was declared and an uneventful landing was carried out.

Maintenance personnel discovered that the VG vane spindle nut had backed off thereby liberating the 2nd stage VG vane. The vane traveled entirely through the cold and hot sections of the engine, damaging it beyond economical repair.

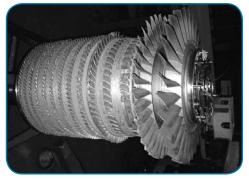
Results of the engine teardown revealed problems around the torque retention of the Variable Guide Spindle nuts. The purpose of the spindle nuts is to secure the VG actuation arm to each of the VG vanes. Other investigation findings included other loose VG spindle nuts and locking washers, thick and thin walled spindle nuts and single and double tabbed locking washers. The thin walled spindle nuts were observed to be loose, while the thick walled nuts were not.

Engine logbook records determined that a previous operator had carried out the relevant General Electric Service Bulletin (SB) 72-0184. Notwithstanding, the operator will conduct a fleet wide inspection to redo the manufacturers Service Bulletin (SB)72-0184 to ensure check the configuration and security of the existing hardware.

TCCA recommend that maintainers pay particular attention to the VG actuation system hardware.

The engine manufacturer has been advised of the above problem and is investigating at this time. **





ROBINSON R-44 II (IO-540-AE1A5)

SDR # 20060802008

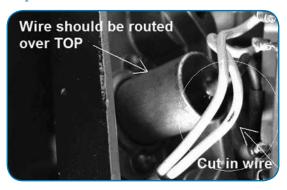
Continental Magneto Wires Chafed

When the collective lever was lowered during descent, the engine became erratic. The engine oversped above 116% and the throttle governor was not working properly. The main rotor tachometer also indicated an overspeed above 114%.

Subsequent inspection of the right magneto found that the wire insulation had cut through. This damaged wire that carries the speed signal from the secondary points to the tachometer and speed governor had shorted to ground. This caused an intermittent loss of signal resulting in erratic tachometer indication. The airframe manufacturer confirmed that this condition would cause the speed governor to malfunction.

The SDR submitter stated that improper magneto wire routing during the last inspection may have caused this in-flight engine malfunction.

The importance of proper wire routing and security cannot be overemphasized. **



PRATT & WHITNEY CANADA PT 6A 67D (BEECH 1900D)

SDR #20060531016

Blade Failure

Upon applying takeoff power for departure, the pilot heard a loud bang. A rejected takeoff was carried out and the aircraft came to a halt. A passenger informed the crew that he saw debris fall off the RH wing. The RH engine was secured and the pilot taxied back to the gate where the passengers disembarked.

Investigation by maintenance personnel discovered that the RH engine appeared to have suffered a power turbine blade failure. The debris from the blades is what the passenger observed.

The engine was routed to the manufacturer for investigation.

There have been incidents of power turbine (PT) blade fractures on the PT6-67D engine, which is generally related to blade outer shroud Z-notch wear on the high time PT blades.

Transport Canada Civil Aviation (TCCA) recommends compliance with P&WC Service Bulletin 14369 to replace the 2nd stage PT blades due to blade fractures and wear at the shroud contact face. TCCA also recommend compliance with manufacturers SB 14259 & SB14172 affecting blade configuration.

HEADS UP

Cold Weather Operations & Effect on Aircraft

The Canadian Cold Soak requirement is an additional technical condition (ATC) developed primarily for Transport Category aircraft to address identified hazard(s) unique to our Canadian climate. This certification requirement provides that aircraft and their systems function properly and do not introduce hazards to safety following a 10-hour exposure to ground temperatures of -35 C or lower. Cold weather operations service experience revealed that aircraft do not always function as designed following exposure to cold temperatures on the ground (cold soak). Aircraft system malfunctions have occurred as a result of a cold soak, despite cold temperature testing conducted in laboratories on individual components.

A number of difficulties have historically been identified and associated with aircraft ground cold soak (reference Advisory Circular AC500-006). Items of airworthiness significance found during in-service operational flying or during certification of the aircraft, which contains a low-temperature factor, are presented in the following list:

- a. Hydraulic oil seals may leak affecting mechanical reliability (e.g. landing gear, flight controls).
- b. Pneumatic lines may clog with condensation (ice).
- c. Fuel filters may clog with congealed (slushed) fuel.
- d. Reduction gear oil seals may harden and leak leading to a loss of pressure.

- e. Metal shrinkage, especially with dissimilar metals, resulting in control stiffness, jamming of doors, etc.
- f. Flight control position indicator sensors may malfunction.
- g. Electrical trim motors may slow or cut-out due to torque overload induced by stiff controls.
- h. Lubricants may harden, resulting in stiff mechanical engine and flight controls.
- i. Throttle (and other) micro-switches, for sequencing of ancillary systems, not properly set for temperature range.
- j. Air struts may fail (e.g. for main and emergency doors, leading to inability to properly open undercarriage doors).
- k. Control column boots may crack and fail, leading to foreign object ingress and jamming of flight controls.
- 1. Electric flight instrument displays may fail.
- m. Computer-based control systems may not account for increased mechanical system response time at low temperature, resulting in system shutdown.
- n. Flight control cable tension will change as temperature falls.

The above list is not all-inclusive but does provide operators, owners and maintainers with areas to be cognizant of during cold weather conditions.

TCCA recommend that personnel operating all categories of aircraft be aware of the above information that can negatively impact and possibly jeopardize the safety of aircraft during cold weather operations. **

EQUIPMENT ADS

Transport Canada (TC) endeavours to send copies of new airworthiness directives (ADs), which are applicable in Canada to the registered owners of the affected products. Equipment/appliance ADs are often only distributed to our regional offices because the owners of aircraft affected by this type of AD are not generally known.

The following new ADs on equipment have been received by TC in the last three months. AMEs and operators of the affected products are encouraged to obtain further information or a copy of the ADs from their regional TC office, their local TCC, their PMI, or from the Civil Aviation AD website at: http://www.tc.gc.ca/aviation/applications/cawis-swimn

ABSC						
50068572	0000	ROTATING DISC	5013430	FAILED/BROKEN	20060512004	ONT
ACK TECHNOLO	GIES					
E01	2560	BATTERIES	MN1300	UNSERVICEABLE	20060502008	PNR
E01	0000	BATTERY HOUSING	E0102E0103	CORRODED	20060516006	PNR
AMERI-KING CO	RPOR/	ATION				
AK450	0000	G-SWITCH		FAILURE	20060511003	ONT
B&C SPECIALTY	PROD	UCTS				
BC3151004	0000	STARTER	BC3151004	UNSERVICEABLE	20060612002	PNR
BENDIX CORP						
1527251	0000	O/B WHEEL HALF	152966153998	CRACKED	20060602005	PAC
S6LN1209	0000	CAM ON DISTRIBUTOR SHAFT		INTERNAL MAG LOOSE	20060602001	QUE
S6LN1209	0000	HOUSING	103493943	GOOD	20060417002	PAC
BOMBARDIER						
51SA16242	0000	DE-ICE BOOT	85720016004	DETACHED SPIGOT	20060628006	ATL
BRUCE INDUSTR	IES					
059341	0000	BALLAST	059341	UNSERVICEABLE	20060510005	NCR
CLEVELAND AIR	CRAF'	Γ				
40289	3246	WHEEL ASSEMBLY	40289	CASTING FLAWS	20060616004	PNR
DUNLOP TIRE &	RUBBI	ER				
AH52339	0000	HALF HUB	AH42276	CRACKED	20060512005	NCR
EMERGENCY BE	ACON	COR				
EBC102A	0000	BATTERY	GS21	UNSERVICEABLE	20060504005	PNR
EUROCOPTER						
22129BC08006	0000	SCREW	22129BC080060L	UNSERVICEABLE	20060427006	PAC
GARRETT						
GTCP85129	4900	FIRE DETECTION LOOP		UNSERVICEABLE	20060424007	ONT
KELLY AEROSPAC	CE					
MHB6018	0000	LIGHT WEIGHT STARTER		UNSERVICEABLE	20060619011	PNR
MESSIER DOWTY	<i>I</i>					
201045004	3213	OUTER CYLINDER		CORROSION	20060410006	ONT
POINTER INDUST	ΓRIES	D				
400010	0000	G-SWITCH		FAULTY	20060531026	PNR
SIKORSKY						
763510960041	0000	OIL JET	7635109105054	UNSERVICEABLE	20060620007	PAC
S613520600	6310	INPUT FREEWHEEL L/H R/H	6107435000060	DAMAGED	20060526005	PAC
SLICK ELECTRO	INC					
6310	7414	IMPULSE COUPLING	M3050	BROKEN	20060526004	ONT
TELEDYNE CON	ΓINEN	TAL				
IO470V0	0000	STARTER ADAPTER SHAFT	539568	USED	20060510008	ONT

FAA SPECIAL AIRWORTHINESS BULLETINS (SAIBS)

An SAIB is an information tool that alerts, educates, and makes recommendations to the general aviation community. It is non-regulatory information and guidance that does not meet the criteria for an Airworthiness Directive (AD). http://www.faa.gov/aircraft/safety/alerts/SAIB/

SAIB#	Manufacturer	Model	Issue Date DD/MM/YY
NE-06-72	Insight Instrument Corporation- Graphic Engine Monitors (G.E.M.)	GEM-610/P/N 601-001 Mod "C" and GEMINI 1200/P/N 1200-001 Mod "C"	09/29/2006
NM-06-71	Fokker	F.28 Mk 0100	09/26/2006
NE-06-70	Honeywell International Inc.	TPE331 and TFE731 series engines	09/25/2006
NE-06-69	Honeywell International Inc.	TPE331 series turboprop, and TSE331-3U model turboshaft engines	09/20/2006
SW-06-68	Rotorcraft	Forward Looking Infrared (FLIR) systems with embedded laser capability	09/20/2006
CE-06-46R1	Cessna	150, 152, 172, 172R, 172S, 172RG, 177, 177RG, 180, 182, 182S, R182, T182, 185, 206, T206, 208, 210, T210, T303, 310, 335, 340, 402, 404, 414, 421, 425, and 441	09/18/2006
NE-06-67	Engines	Flexible lines and hoses that carry flammable fluid	09/14/2006
CE-06-66	Scottish Aviation (British Aerospace, Jetstream Aircraft Ltd now maintained by de Havilland Support Ltd)	Bulldog Series 100 and Series 120 airplanes	08/28/2006
SW-06-65	Eurocopter Deutschland GMBH (ECD)	BO-105 series helicopters	08/22/2006
SW-06-64	Arrow Falcon Exporters, Inc.; Firefly Aviation Helicopter Services; Garlick Helicopters, Inc.; Global Helicopter Technology, Inc.; Hagglund Helicopters, LLC; International Helicopters, Inc.; Precision Helicopters, LLC; Robinson Air Crane, Inc.; San Joaquin Helicopters; S.M.&T. Aircraft; Smith Helicopters; Southern Helicopter, Inc.; Tamarack Helicopters, Inc.; US Helicopter, Inc.; Williams Helicopter Corporation	HH-1K,TH-1F,TH-1L, UH-1A, UH-1B, UH-1E, UH-1F, UH-1H, UH-1L, and UH-1P	08/17/2006
	Southwest Florida Aviation International, Inc.	SW204, SW204HP, SW205, and SW205A-1	
CE-06-63	SOCATA - Groupe Aerospatiale	TB21	08/14/2006
CE-06-62	The New Piper, Inc.	PA-28R-200 Arrow and PA-28R-200 Arrow II	08/14/2006
CE-06-61	SOCATA - Groupe Aerospatiale	TBM 700 and TBM 850	08/11/2006
CE-06-60	SOCATA - Groupe Aerospatiale	TBM 700	08/11/2006
CE-06-59	Schempp-Hirth Flugzeugbau	Discus-2T, Discus-2cT, Ventus-2cT	08/11/2006
CE-06-58	Schempp-Hirth Flugzeugbau	Nimbus-2C, Mini Nimbus-HS7, Mini Nimbus B, Mini Nimbus C	08/11/2006
NM-06-57	Airbus	A300, A310, A318, A319, A320, A321, A330, A340 airplanes	07/27/2006
	BBJ (Boeing Business Jets)	All airplanes	
	Boeing	707, 717, 727, 737, 747, 757, 767, 777 airplanes	
	BAE Systems	BAe 146 airplanes	
	British Aerospace Airbus	BAC-1-11 airplanes	
	Fokker	F.28 airplanes	
	Lockheed	L1011 airplanes	
	McDonnell Douglas Corporation	DC-8, DC-9, DC-10, MD-10, MD-11, MD-80, MD-88, MD-90 airplanes	
NM-06-56	The Boeing Company	727 and 737 series airplanes	07/19/2006
SW-06-55	Robinson Helicopter Company (RHC)	R22 and R44 helicopters	07/13/2006
NM-06-54	Transport Category Airplanes	Handheld fire extinguishers	07/11/2006
CE-06-53	Schempp-Hirth	Ventus-c, Ventus-cT, Ventus-cM sailplanes	07/06/2006
NE-06-52	Rolls-Royce Corporation (formerly Allison Engine Company)	250-C30, -C40, and -C47 series engines	07/06/2006

FAA UNAPPROVED PARTS NOTIFICATION (UPNs)

Published by: FAA, AIR-140, P.O. Box 26460, Oklahoma City, OK 73125. UPNs are posted on the Internet at: http://www.faa.gov/avr/sups/upn.cfm

NO. 2006-00051 ISSUED JULY 31, 2006

Affected Parts

Bell Model 206B helicopters: registration no. N16849, serial no. 2355; and registration no. N49588, serial no. 1726.

Purpose

The purpose of this notification is to advise all aircraft owners, operators, maintenance organizations, manufacturers, and parts distributors regarding improper maintenance and operations performed on Bell Model 206B helicopters with registration no. N16849, serial no. 2355, and registration no. 49588, serial no. 1726. Both aircraft were owned and operated by Bali Hai Helicopter Tours, Inc.

Background

Information received during a Federal Aviation Administration (FAA) investigation of the fatal accident involving aircraft N16849 revealed that Bali Hai Helicopter Tours, Inc. (Bali Hai), located at P. O. Box 626, Hanapepe, HI 96716, did not use or have in place an accurate method for tracking accumulated time on the two helicopters and their components. No times had been recorded for maintenance, repositioning, FAA check-ride, or all other flights not associated with flightseeing tours. When tracking flightseeing tours, Bali Hai recorded the projected time of the tours and not the actual flight time.

Evidence indicated that the hour meter for both helicopters had been inoperative and disabled for several years. In addition, pilots did not maintain any flight log that included entries for flight time. The information available is insufficient to determine the total time accumulated on the aircraft and their components. Therefore, the current status of the life-limited and overhauled parts of each airframe, engine, rotor, and appliance cannot be established.

In addition, evidence indicated noncompliance with information issued in Airworthiness Directives and technical and service bulletins as well as an absence of tracking scheduled inspections.

The table below presents a partial list of components that were installed on the aircraft.

Part Name	PART NUMBER	Serial No.	QTY
Coll. Lever Assy.	206-010-467-001	RE-2972	1
Coll. Link Assy.	206-010-407-001	REFS-2335	1
Fitting	206-011-140-001	MIFS-1224	1
Fitting	206-011-140-001	MIFS-903	1
Freewheeling Assy.	206-040-270-003	BMB-10476	1
Hyd. Pump	206-076-022-005	B-354	1
Hyd. Servo Actuator	206-076-031-013	2572	1
Hyd. Servo Actuator	206-076-031-013	6157	1
Hyd. Servo Actuator	206-076-031-013	035	1
Latch Bolt	206-011-260-103	DI-15798	1
Latch Bolt	206-011-260-103	DI-15922	1
Lower Coll. Tube	206-001-194-001	USFS-466	1
M/R Blade Assy.	206-010-200-133	A-5444	1
M/R Blade Assy.	206-010-200-133	A-5633	1
M/R Grip	206-010-102-121	A-4174	1
M/R Grip	206-010-102-121	A-4305	1
M/R Hub	206-011-100-017	MDLM-0529	1
M/R Mast	206-010-332-121	FAJF-59234	1

PART NAME	Part Number	Serial No.	QTY
M/R Trans. Sun Gear	206-040-662-101	A-505	1
M/R Transmission	206-040-002-029	BKW-10546	1
Main Driveshaft	206-040-015-103	A20-00942	1
Retention Pin	206-010-123-003	HBFS-1015	1
Retention Pin	206-010-123-003	HBFS-974	1
Retention Strap	206-011-154-105	LPFS-21429	1
Retention Strap	206-011-154-105	LPFS-21435	1
Sleeve Assy.	206-010-454-109	RE-8540	1
Support	206-010-452-113	A-2319	1
Swashplate Assy.	206-010-450-011	JIJG-09610	1
Swashplate Bearing	206-010-443-001	17057	1
T/R Blade	206-016-201-133	CS-1202	1
T/R Blade	206-016-201-133	CS-1211	1
T/R Blade	206-016-201-133	CS-1885	1
T/R Blade	206-016-201-133	CS-1901	1
T/R Duplex Bearing	206-040-410-101	J-4001	1
T/R Gearbox Assy.	206-040-400-11	ALO-10611	1
T/R Hub Assy.	206-011-810-125	A-5072	1

PART NAME	Part Number	Serial No.	QTY
T/R Yoke	206-011-811-009	GD-8014-12	1
Trunion	206-011-113-103	A-1505	1
Engine	250-C20B	CAE822805	1
Bleed Valve	23053176	FF-49569	1
Compressor	6890550	CAC-35701	1
Fuel Control	2524644-30NH 23065104	331998	1

Part Name	PART NUMBER	Serial No.	QTY
Fuel Nozzle	6890917	AG-37369	1
Fuel Pump	6899253	T-4125	1
Gearbox Assy.	6894171	CAG-23266	1
Governor	23007505	14747	1
Governor	23065123	24392	1
Turbine Assy.	6898734	CAT-32678P	1

Recommendations

Regulations require that type-certificated products conform to their type design. Aircraft owners, operators, manufacturers, maintenance organizations, and parts suppliers and distributors should inspect their aircraft, maintenance records, and/or parts inventories for any of the referenced parts. If any of these parts have been installed on aircraft, appropriate action should be taken. If any are found in existing aircraft stock, the parts should be quarantined to prevent installation until a determination can be made regarding their eligibility for installation.

Further Information

Further information concerning this investigation, and guidance regarding the above-referenced parts, can be obtained from the FAA Flight Standards District Office (FSDO) given below. The FAA would appreciate any information concerning the discovery of the above-referenced parts from any source, the means used to identify the source, and the actions taken to remove the parts from aircraft and/or stock.

This notice originated from the FAA Honolulu Flight Standards District Office, 135 Nakolo Place, Honolulu, HI 96819-1845, telephone (808) 837-8300, fax (808) 837-8399; and was published through the FAA Suspected Unapproved Parts Program Office, AVS-20, telephone (703) 668-3720, fax (703) 481-3002.

PACIFIC

January 31 & February 1

WESTERN

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Park Plaza Vancouver Airport Conference Resort 7551 Westminster Highway Richmond, BC V6X 1A3

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Best Western Victoria Inn (Winnipeg Airport) 1808 Wellington Avenue Winnipeg, MB R3H 0G3

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SERVICE DIFFICULTY REPORTS

LEGEND					
JASC	Joint Aircra	Joint Aircraft System Code number defining assembly/system/component	system/component		
SDR NO.		TCA assigned SDR control number - please quote in a	- please quote in any correspondence or inquiries	ries	
RGN	TCA region of PAC = Pacific	TCA region of SDR submitter: PAC = Pacific PNR = Prairie and Northern	ONT = Ontario QUE = VAR = More than one Region	QUE = Quebec ATL = Atlantic Region	NCR = Ottawa (F
Make/Model	JASC	c Part Name	Part No.	Part Condition	SDR No.
AIRCRAFT					
AEROSPATIALE					
AS 332L AS 350B2	7120		332A3233300 350A37122823	SHEARED BROKEN OFF	20060419006 20060524003
AS 350B3 AS 350BA AS 350BA	3110 6300 7930	FANEL DISK ASSEMBLY ENGINE OIL PRESSURE TRANS	022.1A0501 350A35105901 704A37642043	FALSE WAKNING FAILED UNSERVICEABLE	20060613002 20060605002 20060607006
ATR 42 300 ATR 42 300 ATR 42 300	3230 3300 3320		BVO320204114 E033601	BROKEN OVERHEATED OVERHFATING	20060612001 20060628004 20060509008
AGUSTA					
A109 AII	1410	HOSE		CRACKED	20060521002
AIR TRACTOR AT 502B AT 802A	3240	HYDRAULIC LINE ASSY BOLTS	20700600 MS169799	CRACKED LOOSE	20060606004
AIRBUS					
A310 304 A310 304 A321 211	2440 3340 2800		L95F50603	BURNT BURNT RUPTURED	20060502002 20060502003 20060404002
A330 243 A330 343 A340 313	0000 2800 2330		532A000004 FRH280002 845438421	TRIPPED BROKEN BURNED	20060410002 20060405005 20060404003
A340 313 RAF - USA	3520	MANIFOLD	630130018	CRACKED	20060511002
HAWKER 800XP	2422	INVERTER	100160001	FAILED	20060516001
BEECH					
100 100 100 1900C 1900C	5532 5730 0000 0000 0000 5313 5610		11564000098 5012016318 FS227 115430100605 5012006896 11443007529 10138402523	CRACKED CRACKED CRACKED CORRODED CRACKED CORRODED SHATTERED	20060402001 20060502000 20060619012 20060619013 20060511005 20060518004
1900C	2700	DOUBLER	11412004854	CRACKED	20060511008

OUE

PNR PAC

ATL PAC PNR QUE PAC ONT PNR

RGN

(H)

OUE

NCR PNR PNR PNR PNR PNR PNR

RGN	PNR VAR VAR VAR VAR VAR ONT ATL ATL ATL ATL ATL ONT	NCR NCR PNR PNR PNR OUE	PAC PAC PAC PNR PAC
SDR No.	20060511006 20060623002 2 SDRs 20060418003 20060510007 20060510007 20060529009 20060529009 20060529009 20060529009 20060529001 20060529002 2006052002 2006052002 20060613001 20060425009 20060425009 20060425009 20060425009 2006042009 2006042009 2006042009 2006042009 2006042009 2006042009 2006042009 2006042009 2006042000 20060504006 2006042009 2006042009 2006042009 2006042009 2006042009 2006042009 2006042009 2006042009 2006042009	20060605006 20060605005 20060622003 20060605008 200606009 20060420002 20060424009 20060424009 20060403002 20060412003	20060605010 20060602004 20060524001 20060622005 20060524007
Part Condition	CRACKED LOOSE SEIZED CHAFED UNSERVICEABLE FAILED CRACKED UNSERVICEABLE FAILED CRACKED UNSERVICEABLE FAILED CRACKED UNSERVICEABLE CRACKED CRACKED UNSERVICEABLE CRACKED UNSERVICEABLE CRACKED WORN MISSING LOOSE LOOSE LOOSE LOOSE CRACKED INTERMITENT FAILED WORN DAMAGED, GOUGED CRACKED	CRACKED CORRODED PITTED CRACKED BROKEN CRACKED BELOW TOLERANCE UNSERVICEABLE SERVICEABLE CRACKED	CRACKED CRACKED MELTED MALFUNCTIONING
Part No.	1141200487374 1015000573 23078019 MS24166D1 35165050271 HP3001 BZ2RQ181A2 780000 10138001313 3541029114 105932B 10541000057 130909B20 504200337 CCA1550 504200337 9755501115 50380043 11561010325 130909B40130909 50430037 50980002185 1013810009 6041H190 5012015682 1004100151 1099100531516 5061001736	206031121023 206020110005 206031418001 206031123059 412B0220 206032308003 206016201131 SH4635SW STC NAS12918	20404009061 204011179003 212030154101 206075265103 51509002
Part Name	SKIN RUDDER QUADRANT STARTER WIRE 2 PART SHAFT AND COUPLER RELAY ACTUATOR BRACKET PUMP UP LIMIT MICROSWITCH EXHAUST GAS EXTRACTORS FLOW PACK UNIT WINDOW HYDRAULIC POWER PACK CHANNEL BOLT FLAP ACTUATOR NACELLE SKIN FUEL DRAIN BEANING HEAT DUCT BEANING ELEVATOR TORQUE TUBE TQTUBE AASY BOLT/NUT DRAW BOLT FITTING VANE SHUTOFF VALVE AC START RELAY SKIN CHANNEL	WEB ASSY TAIL SKID ASSY SUPPORT LONGERON CONTROL CABLE BULKHEAD TAIL ROTOR BLADE BLEED AIR HEATER WSPS	MAIN TRANSMISSION M/R DRAG BRACE FITTING LIFT LINK FITTING STARTER GENERATOR CABLE DC CONTROL UNIT
JASC	5730 2435 3260 5220 5220 5220 5220 5220 5220 5220 5220 5200 5220 5200 5220	2510 3270 5302 5313 7322 5302 6410 6210 1000	6320 6220 6320 0000 2841
Make/Model	1900C 1900C 1900D 1900D 1900D 1900D 200 200 200 200 200 200 200 200 200	206B 206B 206B 206B 206B 206L 1 206L 1 206L 3 427 430	204B 204B 205A 1 205A 1 205A 1 212

RGN PAC	PNR	ONT PNR PAC PAC ONT ATL ATL ATL ATL PNR PAC PAC PAC PAC PAC PAC PAC PAC PAC PAC	OUE ATIL ATIL ATIL ATIL ATIL ATIL ATIL ATIL
SDR No. 20060503001 2006065012 20060515004 20060614004 2 SDRs	20060424005	20060503007 20060626001 20060626003 20060621004 20060612003 20060628001 20060523002 2 SDRs 20060523012 20060523010 20060523010 20060523010 20060523010 20060623010 20060623010 20060623010 20060623010 20060613009 200606413009 200606413009 200606413009 200606413009	20060407008 20060405004 20060403004 20060403020 200606040006 20060421013 20060421013 20060615001 200606515001 200606523001 200606523001 20060605004 20060605001 2 SDRs 2006065001 6 SDRs
PART CONDITION WIRES BROKEN CORRODED OVERHAULED UNSERVICEABLE BROKEN	CRACKED OVAL HOLES	FAILED CRACKED INOP. IND.SWITCH 966022001 65225847 FAILED FAILED CRACKED CRACKED CRACKED SHATTERED INNER LAYERS DAMAGED- LIGHT OUT CORROSION CORROSION CORROSION FAILED UNSERVICEABLE EXFOLIATED CHAFED EXFOLIATED	MISSING SHEARED FAILED CRACKED FAILED WORN CRACKED CRACKED FAILED TAILED FAILED TAILED
PART No. 212075369001 212015501115 212010750105 2090753261 SAME 214030606005	21949 5428L	AE4888100 66191042 1U109592 58935734 58935733, -734 286A1062002 7002246001 141A550424 14A55067 100201022 898052 148N73081 114N40827 141480149	GS29701378 HST22DU522 601R626765 MS21907D6 848847 600230681 NP1393225 NP1393222 2285008114 CF343A1 414770P02 22850291109 22850291109 2285089801 NP13932112 S69381 272955 S694603 NP13932112, -113, -221
PART NAME HYDRAULIC CLOG INDICATOR BLADE T/R BLADE ASSEMBLY RPM LIMIT DETECTOR SAME SAME	TUBE ASSY GEAR BEARING AFT SPAR	SWITCH RIB ACTUATOR SUPPORT SLAT ACTUATOR POSITION TXMITT BRACKET SWITCH PUMP FUMP FORWARD CAPTAINS WINDOW #4 WINDOWS FEEDER WIRE HARNESS EMERG LIGHT ASSY FLOOR BEAM FLOOR BEAM FLOOR BEAM STATIC INVERTER PORTABLE FIRE EXTINGUISHER AFT SPAR UPPER CHORD LOWER SKIN FAIRINGS NOSE SKIN	R/H BELLY ACCESS PANEL HI-LITE FASTERNER FUEL COLLECTOR BOX ELBOW HYDRAULIC PUMP MAIN ATTACH BUSHINGS CAPTAIN'S WINDOW SIDE WINDOW PANEL ASSEMBLY ENGINE FUEL CONTROL ACTUATING ARM REVERSER TRACK ASSEMBLY WINDSHIELD BUS BAR LINK ASSEMBLY OXYGEN LINE WINDSHIELD CO-PILOT WINDSHIELD
Jasc 2997 6210 6410 7714 0000 6320	5311 5753	5200 2782 0000 2700 7600 5230 2913 5610 5610 5610 5315 5315 5315 5315 5315 5315 5315 5315 5315 5315 5315 5315 5315 5315 5316 5316 5316 5317	2730 2730 2820 2910 2911 2913 5610 7110 7200 7321 7830 7830 7830 7830 7830 7830 7830 7830
Make/Model. 212 212 212 212 212 212 212 214B	BELLANCA 8GCBC 8GCBC#	727 223 727 223 727 225 727 225 727 227 727 227 727 227 737 522 737 522 737 522 737 522 737 724 737 724 737 724 737 724 737 724 737 724 737 724 737 724 737 724 737 724	BD 700 1A10 BD 700 1A10 CL600 2B19 (R100) CL600 2C10 (R700) CL600 2C10 (R700) CL600 2C10 (R700) CL600 2C10 (R700) CL600 2C10 (R700) CL600 2C10 (R700) CL600 2C10 (R700)

RGN ONT ATIL ATIL ATIL PNR PNR PNR QUE	NCR NCR OUT	PAC PAC PNR PNR PAC ONT PAC NCR	QUE PNR ONT PAC PAC QUE ONT	PAC	PAC PNR
SDR No. 20060521001 20060619005 20060413003 20060427007 20060626004 20060626004 20060612005 20060512005 20060512005	20060424003 2 SDRs 20060428002 20060403003 20060504007 20060509002 20060630004 20060630002 20060610002 20060616003 20060616003	20060629008 20060514001 20060620006 20060606010 2006062003 2006062001 2006062001 20060629003 20060629003 20060628009 20060608009	20060518003 20060516004 20060515005 20060425002 20060509001 20060511001 2 SDRs 20060629004	20060615006	20060516008 20060617001
PART CONDITION BROKEN NEW BURNT CRACKED OVERSPEED LOST FAILED DEFECTIVE UNSERVICEABLE	UNSERVICEABLE SCRAP UNSERVICEABLE UNSERVICEABLE FRACTURED DEFECTIVE CRACKED CRACKED UNSERVICEABLE UNSERVICEABLE	DEFECTIVE CRACKED STUCK CLOSED NEW BROKEN CRACKED BROKEN UNSERVICEABLE DEBONDED DAMAGED SHATTERED UNSERVICEABLE	SHEARED BROKEN CRACKED CRACKED CRACKED CRACKED CRACKED	BROKEN	CHAFING UNSERVICEABLE
PART No. 6272017203 B030212604 CC6701057113 AN62498 2153300688 2157752322 1EN243R1 215900018	215T950262 600626401 175E28CT 1036322 600913563 600913563 6012421 24130015 CM358910 122101015	12436351 51577A1 GPP125040 991026720 5041000206 5565096 991230512 24538400 73838426 99143809	34A2000204 07321014 107326022 05230821 122101015 12118061 12139881	M4612BFG	10150
PART NAME SUPPORT BRACKET NUT- HYDRAULIC LINE ELBOW LIGHTING SYSTEM HINGE FITTING CHECK VALVE PROP GOVERNOR DOOR INST - WATER PRESS SWITCH 700 PSI «UP LOCK, SWITCH RUDDER TRIM MOTOR	FIRE BOTTLE S/N 65098DR VENT LINE TRANSFORMER OUTFLOW VALVE TRANSMITTER BRACKET MASTER AVIONIC SW RELAY SWITCH SEAT BOTTOM ASS'Y SEAT STOP RIB LANDING LIGHT SWITCH L/H INBOARD FLAP	BATTERY CONTACT LINK ASSY UPPER TORQUE START SOLENOID PRESSURE SWITCH THROTTLE CABLE MAIN GEAR UPPER TRUNION CHANNEL ANTI-SKID SERVO FLANGE AIR CYCLE MACHINE WINDSHIELD CONTROL SHAFT	FORWARD STRUT R/H LH REINFORCEMENT SPAR RIB FLAP TRACK LEFT JAMB CYLINDERS BULKHEAD FWD DR POST	ROD END	WIRE HARNESS NOSEWHEEL STEERING
JASC 7314 1410 3300 5280 2910 5244 5244 2932 0000 2721	2810 2810 3421 2133 2700 2311 3340 0000 5540 3340	3220 8000 2910 7322 3213 2720 3241 0000 2150 5610	3246 5510 5712 5712 5753 5200 8530 0000	2720	2497 3250
Make/Model CL600 2C10 (R700) CL600 2D15 (705) CL600 2D15 (705) CL600 2D15 (705) CL600 2D15 (705) CL215 1A10 CL215 6B11(CL215T) CL215 6B11(CL215T)	CL215 6B11(CL415) CL600 2A12(601) CL600 2A12(601) CL600 2B16(604) CL600 2B16(604) 172N 172N 172P 172P 172P 172P 172P 172P 172P 172S	195A 207 207A 208 310Q 401B 550 550 560 750	A185F A185F A185F A185F T207A U206G U206G	FIRECAT CONVAIR - CANADA	440 440

SDR No. RGN	20060615002 NCR 20060410003 QUE	CE 20060420001 ONT 20060529008 NCR 20060524002 PAC 20060619007 ONT 20060619007 ONT 20060619008 ONT 20060619008 ONT 20060403021 PAC 20060403022 PAC 20060403022 PAC 20060403022 PAC 20060403025 PAC 20060403025 PAC 20060403025 PAC 20060403025 PAC 20060403025 PAC 20060403029 PAC 2006040004 PAC 20060418002 ONT 20060526001 ONT 20060526002 ONT 20060526003 QUE 20060519001 ONT 20060519001 ONT 20060519001 ONT 20060410018 QUE 20060421018 QUE 20060421018	20060607004 NCR	20060530001 ONT	20060511004 ONT 20060427003 ONT 200606012 ONT 20060511007 ONT
PART CONDITION	BENT SERVICEABLE	CRACKED NON-CONFORMANCE CORRODED SHORTED CRACKED UNSERVICEABLE CRACKED, UNSERVICEABLE CRACKED, UNSERVICEABLE CORRODED UNSERVICEABLE SOCHAULED UNSERVICEABLE UNSERVICEABLE UNSERVICEABLE UNSERVICEABLE UNSERVICEABLE EAILED BROKEN UNSERVICEABLE EAILED BROKEN UNSERVICEABLE FAILED BROKEN UNSERVICEABLE FAILED BROKEN UNSERVICEABLE FAILED RAISING UNKNOWN SERVICEABLE RETREADED#2	BURNED OUT	CHIP	SHEARED LEAKING BEARING FAILURE GOOD
PART No.	F50B381003111 F50B258707	374475 C2P1551A VALTBS12091 10128 C2E1079 B196689RH C2L293A AJ78241 AJ78241 J78221 J78221 J78110 C3US1563 J7819 C3FS24950 C3WA121 C3WA121 C3WA121 C3WA121 C3WA121 C3WA121 C3WA121 C3WA121 C3WA121 C3WA121 C2L2068161 C6U1180 13A04270006 4006719904 DSC5523525 07802 CL12068161 87620130101 NAS558P4048 1305221 NAS510410 NAS510410 NAS510410 NAS510410 78249047 591841	C180559A	4638001001	AN324A 27810061011 50073971A 2751000305
Part Name	GUIDE PLATE S DUCT DOOR	FUEL CHECK VALVE FUEL VENT TUBE WIRING STRUT L/G FITTING WING TIP TANK FLAP ASSY HOT AIR MAGNETO OIL ADAPTER AFT LETRUT TUBE AFT SPREADER BASE BOLLETIN AILERON FLAP, INBD TRAILING PLATE-LUG HYDRAULIC RUDDER PUMP LEG-WELDED METERING TUBE SPRING KELAY BASE SPRING RELAY BASE SPRING ROTATING DISC SHAFT KEY SELECTOR PANEL BOLT PROP CONTROL UNIT DIODE	CABIN VENT BLOWER	M/R TRANSMISSION	BOLT HYD LINE MAIN WHEEL ASSEMBLY STRIKER
Jasc	5514 7110	2800 2800 3346 3346 3346 7414 7923 3246 3246 3246 3246 3246 3247 3210 5520 5721 6000 0000 0000 2720 3240 3240 5731 3210 5731 3210 5731 3210 5731 3210 5731 3210 5731 3210 5731 3210 5731 5731 5731 5731 5731 5731 5731 5731	2150	SS 4 6320	3211 3230 3246 3260
MAKE/MODEL	DASSAULT FALCON 50 FALCON 50	DE HAVILLAND - CANADA DHC 2 MKI DHC 3 MKI DHC 2 MKI DHC 3 MKI DHC 4 MKI DHC 8 102 DHC 8 102 DHC 8 102 DHC 8 102 DHC 8 202 DHC 8 311 DHC 8 402	EMB 110P1 2150	BO105 S CDN BS 4	SA27AC SA27AC SA27AC SA27AC SA27CC

RGN	ONT	QUE	ATL	ONT	PNR	QUE QUE PAC PAC	ONT	PNR	LNO	ONT	ONT ONT ONT	ONT PNR PNR PNR PNR PNR ONT ONT ONT
SDR No.	20060424002	20060621002	2 SDRs	20060418006 20060609003	20060509007	20060421016 20060404001 20060620004 20060620005 20060618002	20060413002	20060608006 20060614002	20060523005	20060628001	20060508004 20060405006 2 SDRs	20060602002 20060612004 20060524004 20060530003 20060530003 2006053001 2006053001 20060510013 20060510013 20060510013 20060510013 20060510013 20060510013 20060516010 20060508007 20060508007 20060508008 20060508008
Part Condition	BROKEN IN HALF	WORN	CRACKED	SEVERE OVERHEAT UNSERVICEABLE	CRACKED	CRACKED CRACKED UNSERVICEABLE UNSERVICEABLE UNSERVICEABLE	FRICTION	WRONG SIZE	CRACKED	UNSERVICEABLE	FAILED FAILED OVERHAULED	SEPARATED BRUSHES FAILED FAILED FAILED CRACKED CRACKED SHEARED DRIVE FAILED CRACKED SHEARED DRIVE FAILED CRACKED USED/UNSERVICABLE CORRODED FRAYED WORN, CORRODED CRACKED WORN, CORRODED CRACKED WORN, CORRODED CRACKED
Part No.	AN676AC6300	7LM1025013	3600151, -52	V0214 S122429R	369H600131	AN62704D0300 MILH55934 6901315		600N3500505 500N34223	NAS57712A	M3008	973811430 9728787158 1310160	30670000 HYC5005 4111810 A10014D44 MS2877816 460635 40635 40635 406300 1216001 2489418 46530003 7331802 688160 62701123 6750200 86444800 6750200
Part Name	FLY WIRE	BODY ACTUATOR	WINDOW	WARNING HORN PRESSURE TRANSMITTER	STRUT AFT L/H	HOSE ASSY HOSE FLAP CONTROL LEVER ASSY FLAP SYSTEM FLAP PANEL	THROTTLE	TAILBOOM FITTING	BARRELL NUT	DISTRIBUTER GEAR	HYDRAULIC SWITCH LED NAV LAMPS FEATHERING SOLENIOD VALVE	HEATER EXHAUST TUBE HYDRAULIC POWER PACK ALTERNATOR PUMP ASSY O-RING HYD. FILTER ASSY. LINK ASSY. LINK ASSY. RH FLAP TRANSMISSION THROTTLE CABLE RIB, STABILIZER VALVE ASSEMBLY SWITCH ALLERON BALANCE CABLE RETAINER PIN ASSEMBLY NOSE SPAR ASSEMBLY NOSE SPAR ASSY RETAINER PIN ASS
JASC	3246	0000	5610	3260 7710	3213	3411 3411 2750 2750 5753	7322	5302 0000	5341	0000	2932 3340 6123	2140 22900 2410 2822 2912 2912 3221 0000 0000 5510 2710 3211 3221 3221
MAKE/MODEL	FOUND BROS FBA 2C1	GRUMMAN - FRANCE GA 7	GULFSTREAM - USA 690D	HAWKER SIDDELEY-UR HS 748 2A HS 748 2A	HUGHES 369D	1500 N D 1 35 35 45 45	LOCKHEED 382G	MCDONNELL DOUGLAS HC 600N 530 600N 000	MITSUBISHI - USA MU 2B36A	MORAVAN Z242L	PILATIUS – SW PC 12 45 PC 12 45 PC 12 45	PIPER PA23 250 PA28R 200 PA28R 201 PA31 325 PA31 350 PA31 350 PA31 350 PA31 350 PA31 480 PA44 180 PA44 180 PA44 180 PA44 180 PA44 180 PA44 180

MAKE/MODEL PA44 180 PA44 180 PA44 180	JASC 5712 0000 0000	PART NAME WING RIB ASSY AILERON CONTROL CABLE MOUNTING FLANGE	Part No. 7847506, -507 62701143 86245023	PART CONDITION CRACKED WORN TO LIMITS CRACKED	SDR No. 3 SDRs 20060508005 20060621005	RGN ONT ONT ONT
PIPER AEROSTAR PA60 601	5711	ЗАР	PA60601	UNSERVICEABLE	20060419002	PAC
ROBIVSO.N R44 II R44 II R44 II R44 II R44 II	2510 2400 2435 2450 6240 6730	R WIRE R WARNING HORN	C6284 B2804 72566 C05914 B3203 D4523	CRACKED STUCK MISSING TEETH LOOSE FAILED LEAKING	20060523004 20060510014 20060518001 4 SDRs 2 SDRs 20060403026 20060508013	PNR PNR PNR PNR PNR
R44 II R44 II R44 II R44 II R44 II	7314 7697 7720 7720 7800 8000 0000 0000	MP .AMP OR (L/H) SLD	B8187B VF741H11 624600718 72566 C1695 D3171	GROWLING STUCK STICKING FAILED MISSING TEETH BENT/CRACKED CRACKED	20060510001 20060425001 20060606005 20060424004 20060518002 20060628003 20060628003	PNR PNR PNR ONT ONT
SAAB 340B SF340A	2432 3242	WASHERS MAIN WHEEL ASSY	ADS 0.2 AN960JD 616 5009236	MELTED CRACKED	20060509004 20060509004 20060609001	PNR PAC
SIKORSKY S61L S61N	6320 2720	REAR COVER SERVO	S613520060103 S616561500	CRACKED UNSERVICEABLE	20060608011 20060517003	PAC PAC
SWEARINGEN SA226TC	5210	RECEPTACLE	2720063907	CRACKED	20060407009	PAC
SYMPHONY AIRCKAFT SA 160 SA 160	5310 7120	TUBING ENGINE MOUNT	5300621501 7120000101	CRACKED CRACKED	20060531002 2 SDRs	QUE NCR
ENGINE						
250-C28B 250-C30P 250-C30P 250-C30S 250-C47M 501-D13 501-D22A 501-D22G	7230 7260 7320 7210 7230 0000 7510	ATROL UNIT SHAFT A TH STG BLEED	20060403010 23005747 23070613 7636109103104 23064613 6844716	ONT SCRAPPED BROKEN BROKEN CRACKED CRACKED FAILED	20060504003 20060413005 20060605007 20060608005 20060613003 20060601001 20060426003	OUE PNR PAC PNR ONT
AE-3007A1 AVCO LYCOMING IO-360-L2A IO-360-L2A LTS-101-600A-2	8520 8520 7200	OIL TANK CONNECTING ROD BEARING CRANKSHAFT GEAR O/S LIMITER	23070328 LW13521 13S19646	RUPTURE BROKEN CRACKED DEFECTIVE	20060627002 20060418005 20060427001 20060612006	QUE PNR PNR

RGN	PNR PNR PAC PNR PAC PNR PAC ONT ONT PNR PNR PNR PNR PNR ONT ONT ONT ONT ONT ONT ONT ONT	ATL	PNR PNR PNR PNR PAC QUE	QUE QUE PAC PAC	PNR ONT ATL PCUE PCUE CUE CUE CUE ONT
SDR No.	2006065011 20060510003 20060509006 20060509006 20060530004 20060419003 20060419003 20060523003 3 SDRs 20060524006 20060524006 20060524005 20060526002 20060526002 20060526005 20060526005 20060526005 20060526005 20060526005 20060526005 20060526005 20060526005 20060526005 20060526005	20060418004	20060530007 20060627004 20060428001 20060529004 20060616006 2 SDRs 20060405003	20060421014 20060526003 20060510006 20060413004	2 SDRs 2 0066530008 20066530008 20060627001 20060425011 20060403008 2SDRs 2SDRs 20060431012 20060531012 20060531005 2 SDRs 2 SDR
Part Condition	UNSERVICEABLE FAILED CRACKED CRACKED DAMAGED SEPARATED LOOSE FAILED CRACKED HEAD FAILED CORRODED OVERHAULED LOW PRESSURE OIL LEAK CRACKED CONTAMINATED DAMAGED SEPARATED SEPARATED	SCORED	WORN FAILED BROKEN LEAKING UNSERVICEABLE CRACKED CRACKED	STICKING RUPTURED SHEARED NEW	DISTORTED UNSERVICEABLE CRACKED CHAFED UNSERVICEABLE UNSERVICEABLE WORN UNSERVICEABLE FAULTY CONTAMINATED FRACTURED UNSERVICEABLE UNSERVICEABLE
Part No.	430110116 430128806 LW12416 SL32006WAZOP 76097 055211313 43564 9848025 CL41CCST041CA AF15472 74568 74502 200F5002 4066109020 LW1277885 LW18853 AS349101 4038180047		3582681 31035851 P1070 8210263C 8939735 B441172	1885M24601 5018T38P02 5003T78P04	3020159 3027039 310427801 130F0014S0314
Part Name	GOVERNOR FUEL CONTROL UNIT CYLINDER CYLINDER CAMSHAFT AIRBOX ASSEMBLY IDLE MIXTURE SCREW TACHOMETER CYLINDER FUEL PUMP CRANKSHAFT CONNECTING ROD FUEL PUMP TURBOCHARGER VALVE-EXHAUST BYPASS INJECTION NOZZLE GASKET OIL SEAL		CARRIER ASSY TORQUE SENSOR BEARING OIL FILTER PROP GOVENOR STRAIN GAUGE CANNON PLUG PLENUM OIL FILTER ADAPTER	11TH STAGE DUCT THREADED SPLINED SHAFT T5 HARNESS	CT SHROUD SEG RETAIN RING ENGINE FUEL FEED LINE P/T SHAFT HOUSING #3 BEARING TURBINE ENGINE FUEL PUMP SPLINE ENGINE CHIP DETECTOR TURBINE BLADE ENGINE DC REGULATOR FUEL CONTROL OIL LINE
Jasc	7323 7322 8530 8530 8520 7322 7714 8520 7314 8520 8520 8520 7314 8720 7314 8720 8720 8730 8120 8120 8120 8120	7920	7210 7260 7920 6122 0000 7200 7920	7532 7510 7260 7397	VADA 7250 7200 7310 0000 7250 7200 7314 7200 7200 7210 7210 7220 7210
MAKE/MODEL	LTS-101-600A-2 LTS-101-600A-3A O-320-D2J O-320-D2J O-320-E2D O-340-B2B5 TIO-540-A2C TIO-540-	CFM56-3C1 GARRETT	TPE331-10UA TPE331-10UA TPE331-10UA TPE331-10UGR TPE331-6 TPE331-6	GENERAL ELECTRIC CF34-8C1 CF6-80C2 CT58-140-1 CT58-140-1	PRATT & WHITNEY-CANADA PT6A-135A 7250 PT6A-21 7310 PT6A-21 7310 PT6A-25 7250 PT6A-25C 7200 PT6A-27 7200 PT6A-27 7200 PT6A-27 7200 PT6A-28 7210 PT6A-28 7210 PT6A-38 7240 PT6A-41 7320 PT6A-41 7322 PT6A-41 7322

MAKE/Model	JASC	Part Name	Part No.	PART CONDITION	SDR No.	RGN
PT6A-42 PT6A-42 PT6A-42 PT6A-50 PT6A-65B PT6A-65B PT6A-67D PT6A-67D	7200 7314 7314 7320 7200 7250 7250 7250 7200	ENGINE FCU/FUEL PUMP DRIVE SEAL FUEL PUMP, HP EDP FUEL PUMP ENGINE ENGINE SHROUD SEGMENT FUEL PUMP ENGINE FUEL PUMP ENGINE	3022375 02532330003 3037347 510767 3044700	UNSERVICEABLE FAILED UNSERVICEABLE UNSERVICEABLE UNSERVICEABLE LOOSE LEAKING	2 SDRs 20060405008 20060410004 2 SDRs 2 SDRs 20060615003 20060407006 2 SDRs 20060614005	QUE PNR QUE ATL ONT ATL QUE
NOTE AND VIEW	7310 7260 7321 7250 7910	TERS IL SCOOP AP	UNKNOWN 30B296301	LEAKING DISTRESSED WORN WORN MISINSTALLED DAMAGED	20060606006 20060425006 20060531007 20060531004 20060601003	PNR QUE QUE QUE QUE
	7300 7314 7510 7414 8530 8530 7920 0000	ENGINE FUEL CONTROL UNIT ANTI-ICE VALVE MAGNETO CYLINDER ASSEMBLY PUSHROD COVER ASSEMBLY O-RING	7436024 320115 8B9RU3 899353 282992 493476 356996	FAILED UNSERVICEABLE UNSERVICEABLE FAILED CRACKED CORRODED DISPLACED CRACKED	20060621001 20060403028 20060609004 20060626002 20060531003 2 SDRs 20060629005	PAC PAC PNR ONT QUE ONT PAC PAC
RMAN	Y 7120 7712	COMPRESSOR CASE TORQUE TRANSMITTER	RK46348 1004PGSB	LOOSE MOUNT	20060619009 20060609002	ONT
ROLLS ROYCE - UK RB211-535E4-37 78 TELEDYNE CONTINENTAL	7830	HEAT SHIELD		DELAMINATED	20060502007	NCR
10-240-B 10-360-G 10-520-D 10-520-F 10-520-F 10-520-MB 10-550-F 0-470-R	7310 7310 8530 8530 8530 8011 8530 8530	ENGINE INJECTOR LINE CYLINDER CYLINDER CYLINDER STARTER ADAPTER SHAFT CYLINDER	630662 TIST712ACA TIST712ACA SA52000A1 629435	FAILED NEW CRACKED CRACKED CRACKED USED BROKEN LEAKAGE	20060504004 20060508001 2 SDRs 2 SDRs 2 SDRs 20060510009 20060528002 20060419005	QUE ATL PAC PAC ONT OUE
	7200 7250 7930 7334	UNDETERMINED REAR BEARING REAR BEARING ELECTRIC MAG LOW PRESSURE FUEL SWITCH	9609000408 0235237790 9550179130	UNSERVICEABLE FLAKING LEAKS	20060510010 20060524009 20060509009 20060621006	ONT PNR PNR PNR
PROPELLER HAMILTON STANDARD 14SF-7	6123	ACTUATOR	JV5	UNSERVICEABLE	20060530009	ATL

AAKE/MODEL JASC	ASC PART NAME	Part No.	PART CONDITION	SDR No.	RGN
6112	BLADE DE-ICE BOOT	4E220010	UNSERVICEABLE	20060512002	PNR
6114	HUB	C2343	CRACKED	20060619006	ONT
6111	BLADE	S90AT4	CRACKED	20060619001	ONT
6114	HUB	D4716	CRACKED	20060619003	ONT
61111	BLADE		CRACKED	2 SDRs	ONT

HANGAR Noise

Maintenance Terminology

During discussions about aircraft maintenance programs, time and time again, the term "on-condition" is used, usually in conjunction with the term "hard time". This is to differentiate between one maintenance concept that looks for reduced failure resistance that has dropped below a defined level, and another concept that recommends a scheduled removal and restoration of an item, regardless of its level of failure resistance.

In the case of the term "on-condition", there is often a chance that this term will be confused with a third one called "condition monitoring". This is partly due to the use of the word "condition" in both terms. Unfortunately, the concepts are completely different from each other; therefore a need for clear definition of these terms arises.

The terms "on-condition" and "hard time" relate to the tasks making up an aircraft maintenance program, while the term "condition monitoring" does not. Since a good definition is one that is brief, easily understood and consistently interpreted correctly, let's see how we can meet these requirements for some commonly used aircraft maintenance terms.

On-Condition Tasks

Since the term "on-condition" is the one that has taken precedence as a modern maintenance concept, it will be dealt with first. This term has its roots in the discipline of Reliability-Centered Maintenance (RCM), which focuses on achieving the inherent safety and reliability capabilities of equipment, RCM principles were first applied to the development of airline maintenance programs, in 1978, which provided the most concise definition for on-condition tasks, namely:

"Scheduled inspections to detect potential failures."

The reason such tasks are so defined is that they call for the removal or repair of individual units of an item (e.g. a fuel nozzle in a turbine engine) "on the condition that" they no longer meet the required standard. Conversely, it could be stated that these units would require no maintenance "on the condition that" they would continue to meet the required standard until the next scheduled inspection. In any case, on-condition concepts are only applicable to items that will exhibit evidence of gradual deterioration. By discriminating between units that require corrective maintenance and those that will survive without maintenance to the next scheduled inspection, on-condition tasks permit all units to realize most of their useful lives.

RCM as it relates to a wide variety of industrial applications provides the following explanation:

"On-condition tasks entail checking for potential failures, so that action can be taken to prevent the functional failure or to avoid the consequences of the functional failure."

These tasks are called such because items, which are inspected, are left in service (no further maintenance action taken) on the condition that they continue to meet specified performance standards. Note that the emphasis is on functional failures and the avoidance of their consequences. For aircraft maintenance purposes, the above concepts can be appropriately reflected in the following definition:

"A program which uses scheduled maintenance tasks to detect potential failures and ensures that only items which no longer meet the required standards, are restored or discarded."

Here the emphasis is on potential failures and the possibility of restoring the item to the required standard or replacing it with an item that meets the standard.

It can be stated that the four major categories of oncondition techniques include condition-monitoring techniques. This brings us to another term, which needs some elaboration.

Condition-Monitoring

The term "condition-monitoring", as used in the aircraft maintenance world, has its roots in a logic system used by Boeing Aircraft Company (in 1968), for developing the Boeing 747 maintenance program. The term has to do with allowing a part to fail in service, and is therefore commonly referred to as "fly-to-failure". Note that this has nothing to do with identifying evidence of reduced resistance to failure or the detection of potential failures and therefore does not constitute a maintenance task (i.e. there is no such thing as a condition monitoring maintenance task or program).

If the failure of a unit has no safety impact, and replacement after failure costs less than doing preventive maintenance prior to failure, the unit can qualify for condition monitoring. The choice of the term (by Boeing) is unfortunate, since The word "monitoring" implies that some sort of periodic check is being done on the unit, when in fact no check is done.

Units subject to condition-monitoring are permitted to remain in service without preventive maintenance until a functional failure occurs. This definition of condition monitoring, as applied in industry, is different and involves the use of specialized equipment to monitor the condition of other equipment. Clearly, a term may therefore be defined differently, depending on the meaning that the user of the term wants to provide. For aerospace use, the term "condition monitoring" means "fly-to-failure".

Hard Time Tasks

Finally, the term "hard time" (and "soft time") must be addressed. There appears to be no concise definition for this term. Instead, it is based on the assumption that complex items and their units have an expected or proven service life, and that their overall reliability invariably decreases with age. Hard time items therefore need to have a restoration task (overhaul) assigned to them.

The term most generally applies to engines, propellers, appliances and emergency equipment which need time limitations placed on them, well within their expected or proven service lives. A hard time task will usually be a single task calling for overhaul of the item and its units, in accordance with a prescribed set of instructions (an overhaul manual).

Although hard time items will still be subjected to periodic inspections, these inspections will usually not be as frequent as those for on-condition items, since deterioration is assumed to be constant and failure is less likely to occur before overhaul is necessary. Note also that these periodic inspections are not the same as on-condition tasks, since they do not monitor gradual deterioration and are primarily done to determine if the item will continue in service until overhaul.

If there is a need to do significant maintenance on an item prior to overhaul, and the item contains life-limited units, the term "soft time" may become applicable. This term is used to describe the option of replacing life-limited parts prematurely, while the item containing such parts is disassembled for maintenance purposes.

The assumption is that most operators would benefit economically by replacing such parts with new parts and would thereby forego the need to again disassemble the item in the near future. Although the removed unit would still have life remaining, it would not be significantly long enough to warrant continued service.

SUSPECTED UNAPPROVED PARTS (SUPS)

There were no Service Difficulty Reports (SDRs) received between 1 April and 30 June 2006 that indicated any suspected unapproved parts.

In Canada, in accordance with *Canadian Aviation Regulation* (CAR) 591.0, SUPs should be reported

indicating your suspicion of an unapproved part on a regular SDR form or on the Internet

at: www.tc.gc.ca/wsdrs. 🛠



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Canadian Aviation Regulations (CARs)

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Airworthiness Directives

www.tc.gc.ca/CivilAviation/certification/continuing/ad.htm

Service Difficulty Alerts

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Service Difficulty Advisories

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Web Service Difficulty Reporting System (WSDRS)

www.tc.gc.ca/wsdrs/

Airworthiness Notices

www.tc.gc.ca/civilaviation/maintenance/aarpc/ans/menu.htm

Airworthiness Manual Advisory Index

http://www.tc.gc.ca/CivilAviation/certification/guidance/menu.htm

Aircraft Maintenance & Manufacturing Staff Instructions (MSI)

www.tc.gc.ca/civilaviation/maintenance/aarpc/msi/menu.htm

Aircraft Maintenance and Manufacturing Policy Letters (MPL)

www.tc.gc.ca/civilaviation/maintenance/aarpc/mpl/menu.htm