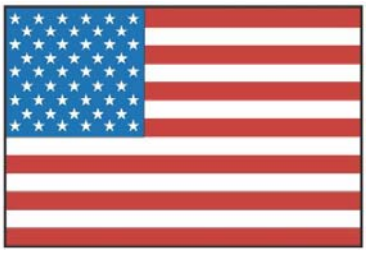
U.S. Department of Transportation
Federal Aviation Administration

AFS-600
Regulatory Support Division

ADVISORY CIRCULAR

43-16A

AVIATION MAINTENANCE ALERTS



ALERT NUMBER 344

MARCH 2007

CONTENTS

AIRPLANES

BEECH 1
CESSNA 3
CIRRUS 7
RAYTHEON.....9

HELICOPTERS

MD 10

ACCESSORIES

GOODYEAR 11
NIAGARA AIR PARTS.....13
TCM.....16

AIR NOTES

INTERNET SERVICE DIFFICULTY REPORTING (iSDR) WEB SITE.....16
IF YOU WANT TO CONTACT US 17
AVIATION SERVICE DIFFICULTY REPORTS 18

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC 20590

AVIATION MAINTENANCE ALERTS

The Aviation Maintenance Alerts provide a common communication channel through which the aviation community can economically interchange service experience, cooperating in the improvement of aeronautical product durability, reliability, and safety. This publication is prepared from information submitted by those who operate and maintain civil aeronautical products. The contents include items that have been reported as significant, but have not been evaluated fully by the time the material went to press. As additional facts such as cause and corrective action are identified, the data will be published in subsequent issues of the Alerts. This procedure gives Alerts' readers prompt notice of conditions reported via a Mechanical Reliability Report (MRR), a Malfunction or Defect Report (M or D), or a Service Difficulty Report (SDR). Your comments and suggestions for improvement are always welcome. Send to: FAA; ATTN: Aviation Data Systems Branch (AFS-620); P.O. Box 25082; Oklahoma City, OK 73125-5029.

(Editor's notes are provided for editorial clarification and enhancement within an article. They will always be recognized as italicized words bordered by parentheses.)

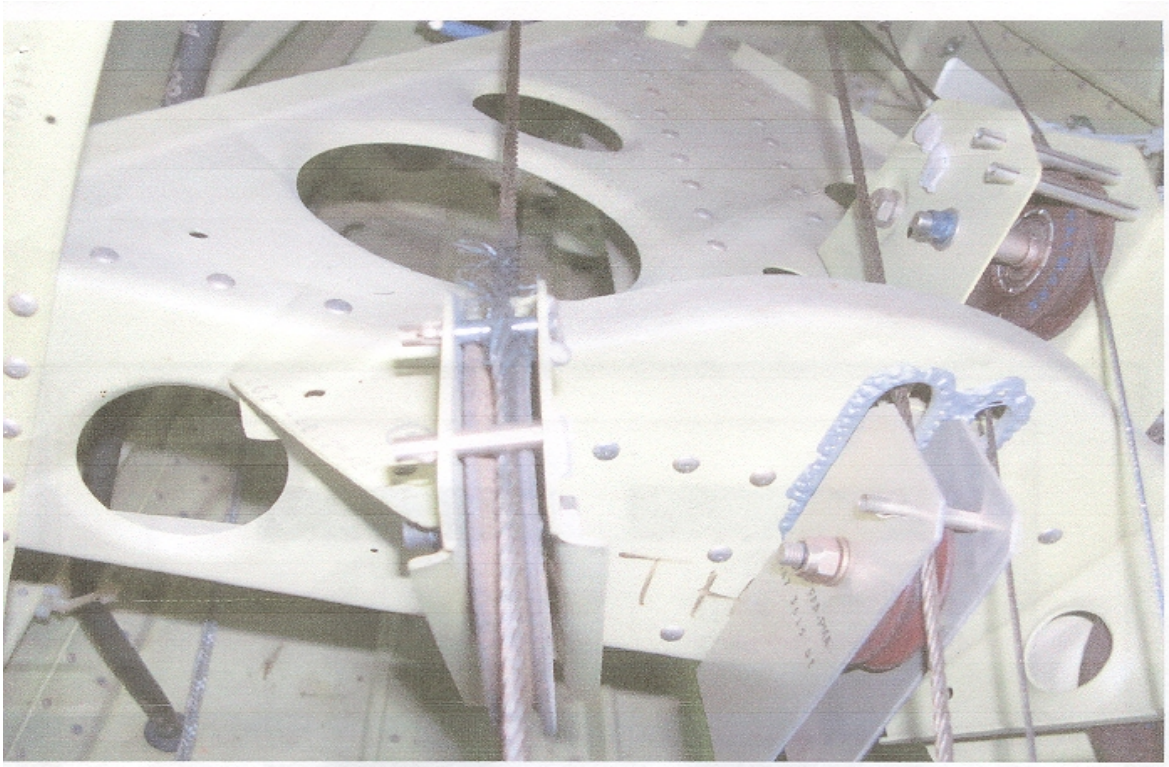
AIRPLANES

BEECH

Beech: F33A; Frayed Elevator Cable; ATA 2730

A repair station technician states, "While performing an annual inspection on this aircraft, the right aft rudder cable was found frayed almost *(in half)*. *(This)* cable was found routed over the top of one cable pulley guard pin and under another in the same location in the aft tail section. This cable appears to be the original cable installed in the aircraft at the factory. Log books did not reveal any evidence the cable had ever been removed or disconnected—*(an action which may have explained this improper routing, post production)*. *(Estimating)* from the amount the cable was frayed, it had been rubbing on the pulley guard pin for quite some time.

"It is suspected this cable was routed incorrectly at the factory. Subsequent annual inspections were possibly done in a quick fashion, *(motivated, perhaps, by the aircraft's recent production...)* and low total time. *(I suggest)* inspecting the aircraft completely per the airframe manufacturer's recommendations or FAR 43 Appendix D...regardless how new the aircraft. This is the first time *(our organization has inspected)* this specific aircraft." *(Rudder cable P/N 002-524000-23.)*



Part Total Time: 974.9 hours.

CESSNA

Cessna: R172; Defective Fuel Senders; ATA 2842

(A repair station technician sent in two reports on the same aircraft 1 month apart. Each report describes the same defect on the L/H and R/H fuel senders.)

"(This fuel sender, P/N S3852-1 and -2) ...has a dead spot in its travel (near the full position at the top of its travel), causing the fuel gauge to fluctuate rapidly between full and empty. *(This)* also causes the low fuel warning light to flash continuously."

(A search of the FAA Service Difficulty Reporting System data base revealed three additional reports for the base part number.)

Parts Total Time: L/H 50.8; R/H 86.1 hours.

Cessna: T182; Cracked Flap-Track Support Brackets; ATA 5753

(An A&P mechanic submitted the following report, detailing his experience with this aircraft's—and a second aircraft's—cracked, flap support brackets. It is well worth a few moments of consideration.)

"*(This aircraft's)* ...R/H flap (P/N 0523901-34) jammed at the inboard attach arms at approximately the 20 degree position—while being retracted in flight. The flap motor continued to run for a period of time (causing severe damage and distortion to the jammed flap) before finally tripping the flap circuit breaker. The outboard end of the distorted flap came in contact with the inboard end of the R/H aileron, causing it to bind in a wing level position. The pilot was able to land the plane *(at the airport)* without further incident.

"An inspection of the airplane revealed the tip of the R/H inboard flap support arm (part of the flap support arm rib assembly: P/N 0523901-14) came in contact with a bracket on the flap track rib assembly (P/N 1221010-15), causing the flap to bind. *(This)* flap track assembly is attached to the wing rear spar at wing station 39.00. The bracket that jammed the flap is part of the flap track rib assembly and is used to attach the wing lower trailing edge (P/N 0720601-100) to the flap track rib assembly. Normally, during flap retraction, there is about 1/8th inch clearance between the bracket and the flap attach arm. The bracket was severely damaged during the incident and I wasn't able to determine whether there was any damage to it before the flap bound up. The flap tracks and the flap attach rollers didn't have any abnormal wear, so I suspect the bracket may have been cracked or distorted, causing the incident.

"The cockpit flap control lever's 10 and 20 degree increment stop detents were worn and may have contributed to the problem by allowing the flaps to be inadvertently lowered beyond the 10 and 20 degree positions at too high of airspeeds.

"*(This)* airplane was repaired by replacing the R/H flap, including all the rollers, and by replacing both brackets on the inboard flap track rib assembly. The worn increment stop detents were repaired by fabricating a strip with new detents filed in 2024T3 .050 aluminum sheet and riveting it to the forward side of the lower R/H instrument panel, between the slot for the flap control lever and the slot for the flap position indicator.

"This same problem occurred... *(at an earlier date on a Cessna TR182)* when the L/H flap bound up while the flaps were being retracted on the ground, following the preflight inspection. I submitted a malfunction or defect report on...*(this aircraft as well—its time recorded at 4,590.8 hours)*."

(A search of the FAA Service Difficulty Reporting System data base revealed four entries for the P/N 0523901-14 R/H, 19 for the -13 L/H, and 40 items for the base number—or minus the last two digits. Catch the similarities in the next submission, and the attached pictures!)

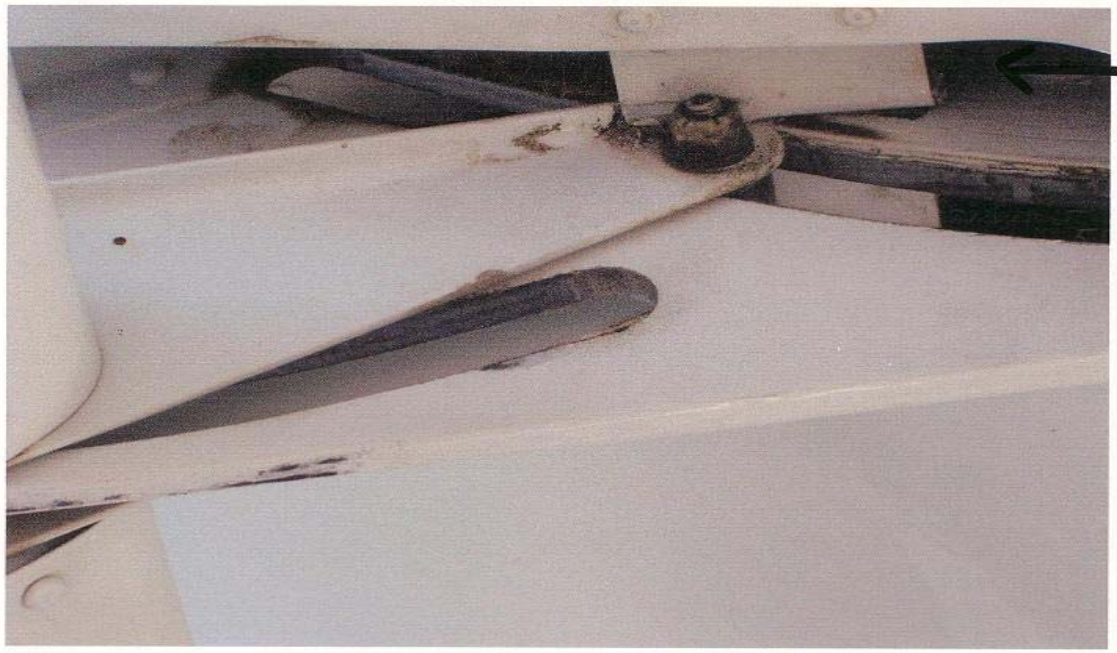
Part Total Time: 4,426.0 hours.

Cessna: 182P; Cracked T.E. Wing Skin Support Brackets; ATA 5753

(Be certain to note the part number in this discrepancy is also found in the previous report—Ed.)

A mechanic/D.O.M. *(director of maintenance)* writes, "The wing trailing edge skin support bracket cracked, causing flap interference and failure. This bracket is attached to each flap track rib inside the trailing edge of the wing. Its purpose is to support the trailing edge wing skin in the flap bay. This part cracked and allowed the flap support to get caught during flap retraction, consequently binding the flap. The flap structure failed before the flap motor caused the circuit breaker to trip. The resulting configuration of the flaps caused significant yaw in flight. Inspection of our fleet of Cessna 152, 172, 172RG, and 182 *(aircraft)* revealed similar conditions on many of these brackets and/or cracked wing skins at the bracket attach point. There is very little clearance between these brackets and the flap support rails by design. In addition, many of the brackets rest firmly against the upper portion of the flap support rails when the flaps are fully retracted and properly rigged. *(I)* suggest regular inspection of these brackets for wear and cracks. I'm unable to locate this part in any of the Cessna Parts Manuals. The bracket appears to be a sub-part of the whole rib assembly (P/N 1221010-15; Cessna 182P). Judging by the irregularity of the rivet holes in the brackets and the flap track rib, it appears these brackets may have been hand drilled by the factory."

(The four pictures below have been vertically compressed.)


Subject Bracket

Part Total Time: 8,872.7 hours.

CIRRUS

Cirrus: SR22; Cracked Exhaust Header; ATA 7810

(The following combines three similar defect reports from the same source into one description. Some minor citation punctuation has been omitted to reduce reading clutter.)

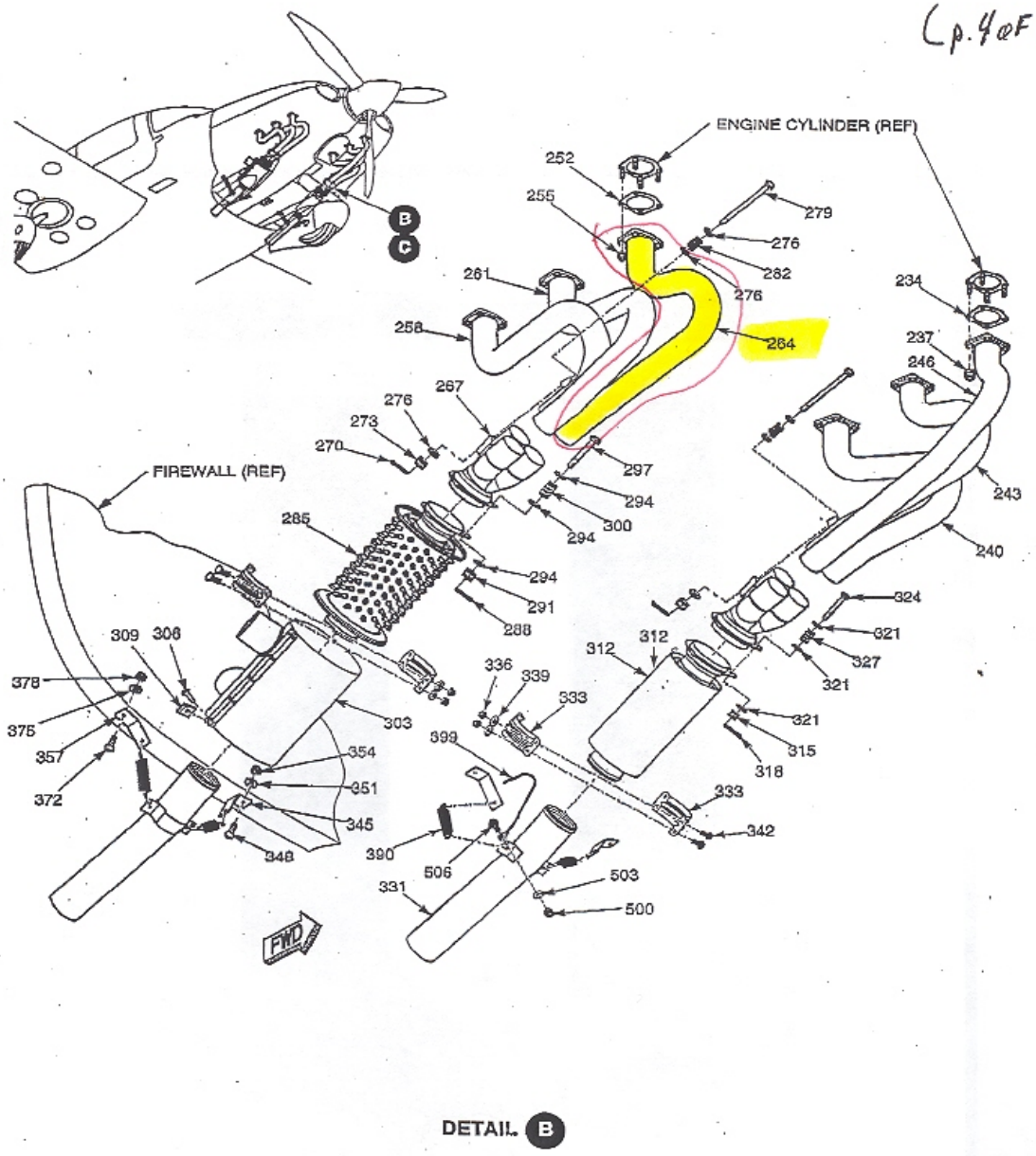
A technician from a repair station finds the same defects consistently on this model aircraft. "The number five exhaust header (P/N 15070-001) was found cracked at the cylinder flange just below the weld *(on three separate aircraft; 25.6, 33.7, and 254.3 hours, respectively). (The first aircraft was also found with...)* the number six exhaust header cracked through its flange for a distance of about 1.5 inches, radiating out along the flange weld (P/N 15074-001). These headers need to be redesigned or given some sort of support. They are over-cantilevered for the stresses imposed upon them."

(A search of the FAA Service Difficulty Reporting System data base revealed 10 entries for this part number.)

10/19/2005 07:49 9722672377 AERO STRUCTURES PAGE 04/04

Cirrus Design
Illustrated Parts Catalog

(p. 4 of 5)



DETAIL B

SR22_PC78_1315A

Figure 01
Exhaust System - *Serials 0320 thru 0820* (Sheet 2 of 3)

13774-001
31 Jan 2005

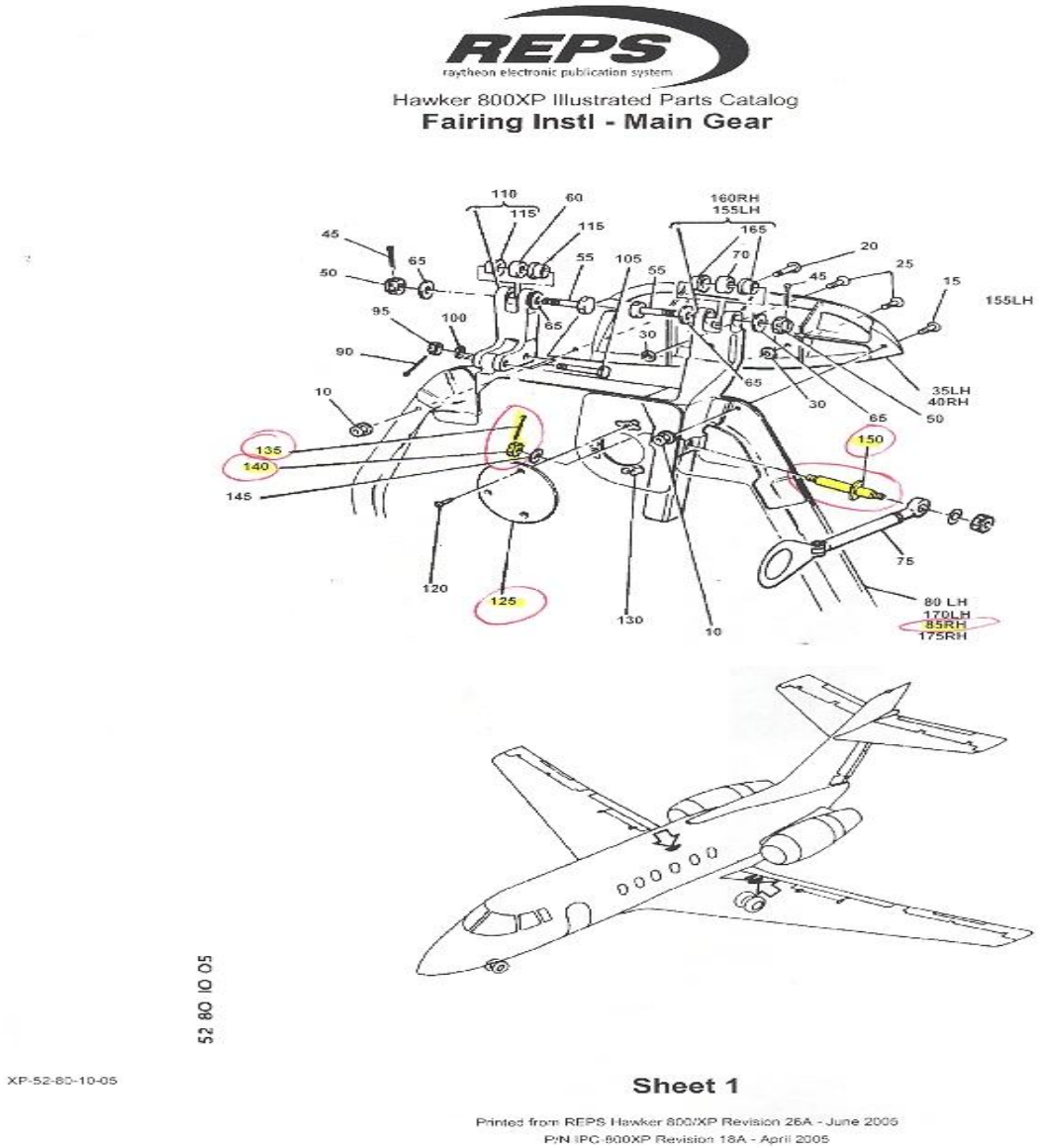
78-20-01
Page 1

Part Time: 104.5 hours (averaged).

RAYTHEON

Raytheon: 800XP; Loose Main Gear Door Hardware; ATA 3231

Referencing this aircraft's R/H main gear outboard door a technician writes, "*(I)* found the door to gear strut attachment bolt (P/N 25UM775) backing out and loose. After removing the cover (P/N 25UM903-13) we found the nut (P/N A103GS) that was to secure the bolt was not safety *(wired)* and had backed off about three turns. If this had come loose the door would have dropped into the slip stream *(P/N 25-8UD507-2A).*



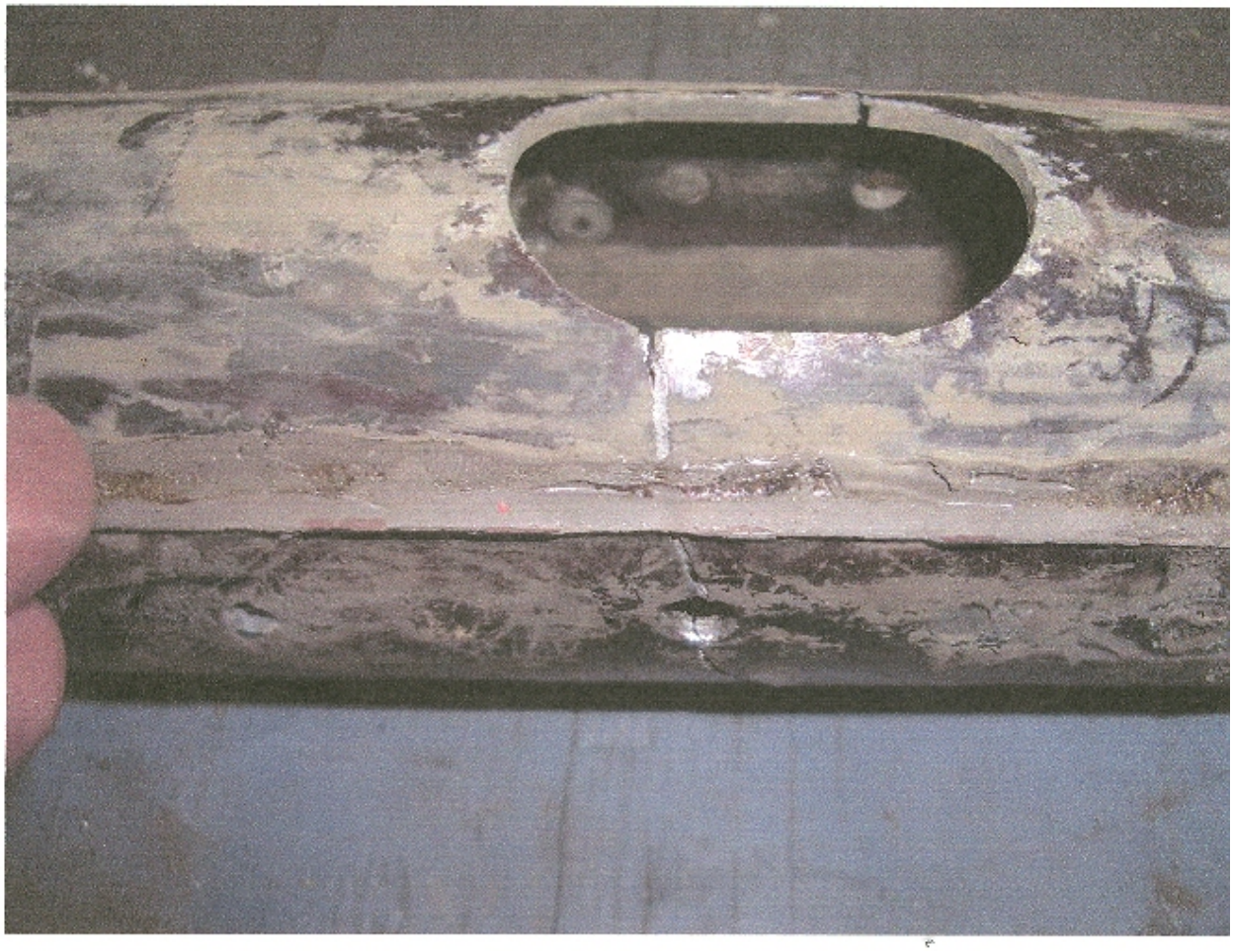
Part Time: 594.5 hours.

HELICOPTERS

MD

MD: 369D; Cracked Skid Tube; ATA 3246

The description states, "Upon landing a mechanic saw the forward left skid tube was angled up several degrees. It was discovered this tube was cracked under the forward foot and skid plate. The unit was replaced *(P/N 369D292114-3)*."



ACCESSORIES

GOODYEAR

Goodyear: Inner-tube; Label/Adhesive Induced Deterioration; ATA 3245

(The following defect report was submitted through the Flight Standards District Office in Fargo, North Dakota. Contact information is provided at the article's end.)

A technician servicing a Cessna 208B describes his investigation into a tire/tube defect. "The R/H main gear tire *(on this aircraft)* was reported low *(on air pressure)*. *(We)* removed the tire to check the tube—it looked old...*(so it was replaced with a new tube, size 8.50 x 10.00)*. One week later this tire *(again)* was reported low.... We removed the tire and inspected the tube. The tube was leaking on one side and almost worn through on the opposite side. After further investigation we determined the stickers inside this 8.50 x 10.00 FC III tire (P/N 850T86-2) had caused the failure. This was the second failure on the same gear position with the second new tube in seven weeks." The submitter states he contacted Goodyear and the local Flight Standards District Office—both of whom responded quickly with information. He describes receiving e-mail from Goodyear indicating "...stickers are put in all of the tubeless tires...", but—their (Goodyear's) website and/or maintenance procedures clearly indicate these stickers are to be removed from tires when they are used with tubes. "*(I)* hope this information will help others in the field so they do not experience these same problems."

GOODYEAR
CUSTOM III

(Relevant information can be found on Goodyear's website: http://www.goodyearaviation.com/img/pdf/mounting.pdf)

"Thank-you!" to the submitter for the keen observation and our inspector's demonstrative photos. For further inquiry contact Principal Maintenance Inspector. Karmen C. Johnson, Fargo Flight Standards District Office, 4620 Amber Valley Parkway, Fargo, ND 58104; telephone 701-277-1245, ext. 218. E-mail: karmen.c.johnson@faa.gov)

Part Total Time: (*1 week indicated*).

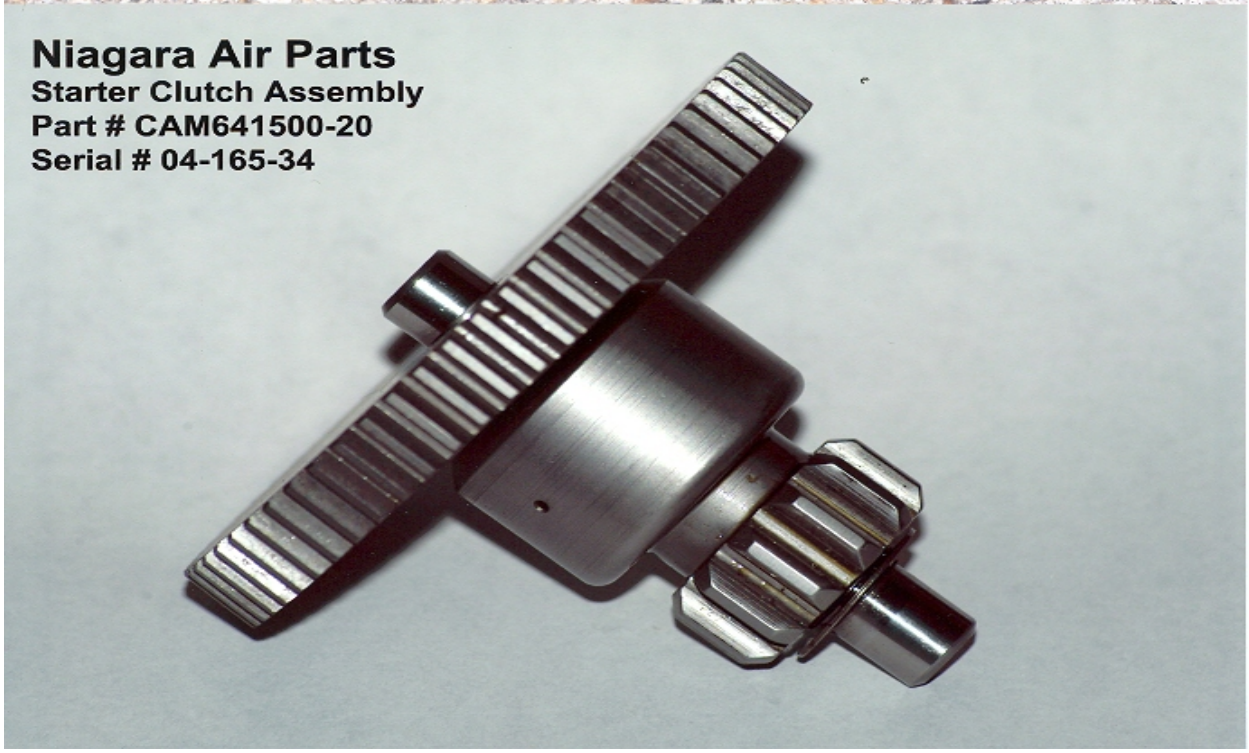
NIAGARA AIR PARTS

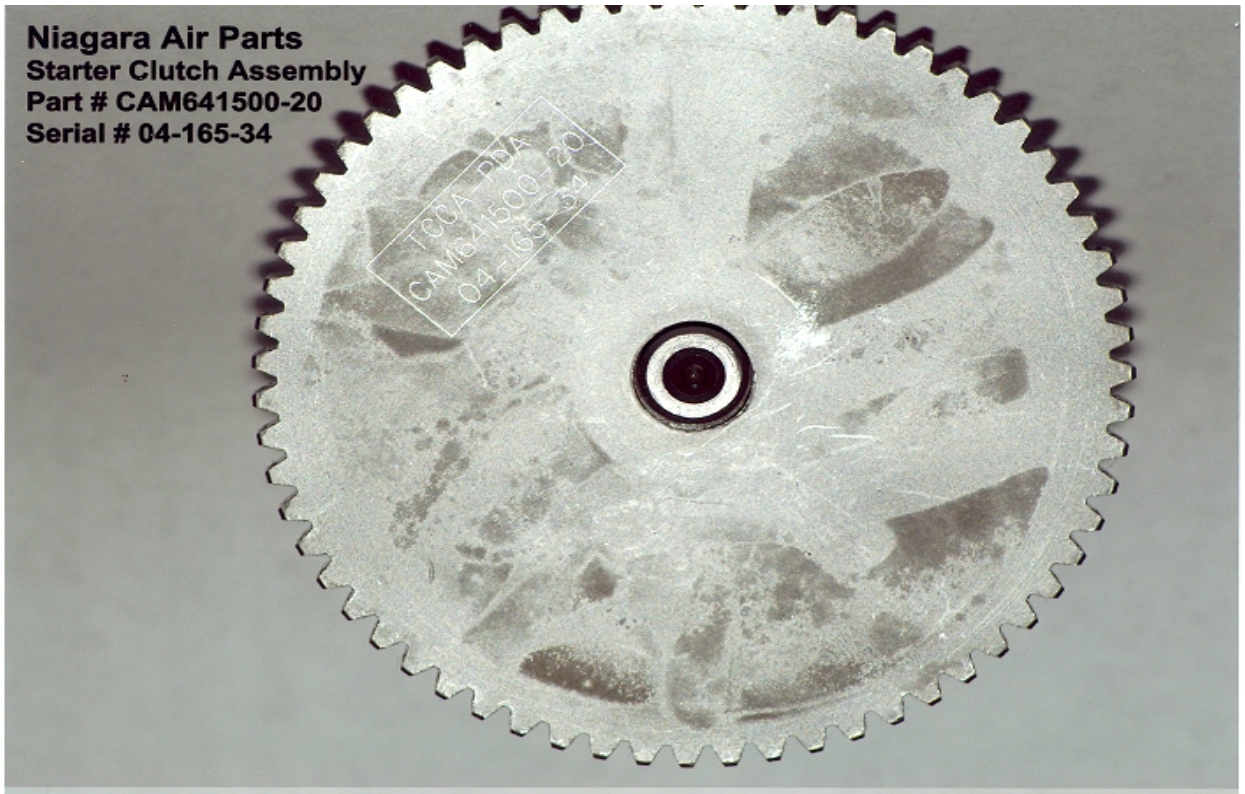
Niagara Air Parts: Starter Clutch; Failed Clutch/Drive Assembly; ATA 8011

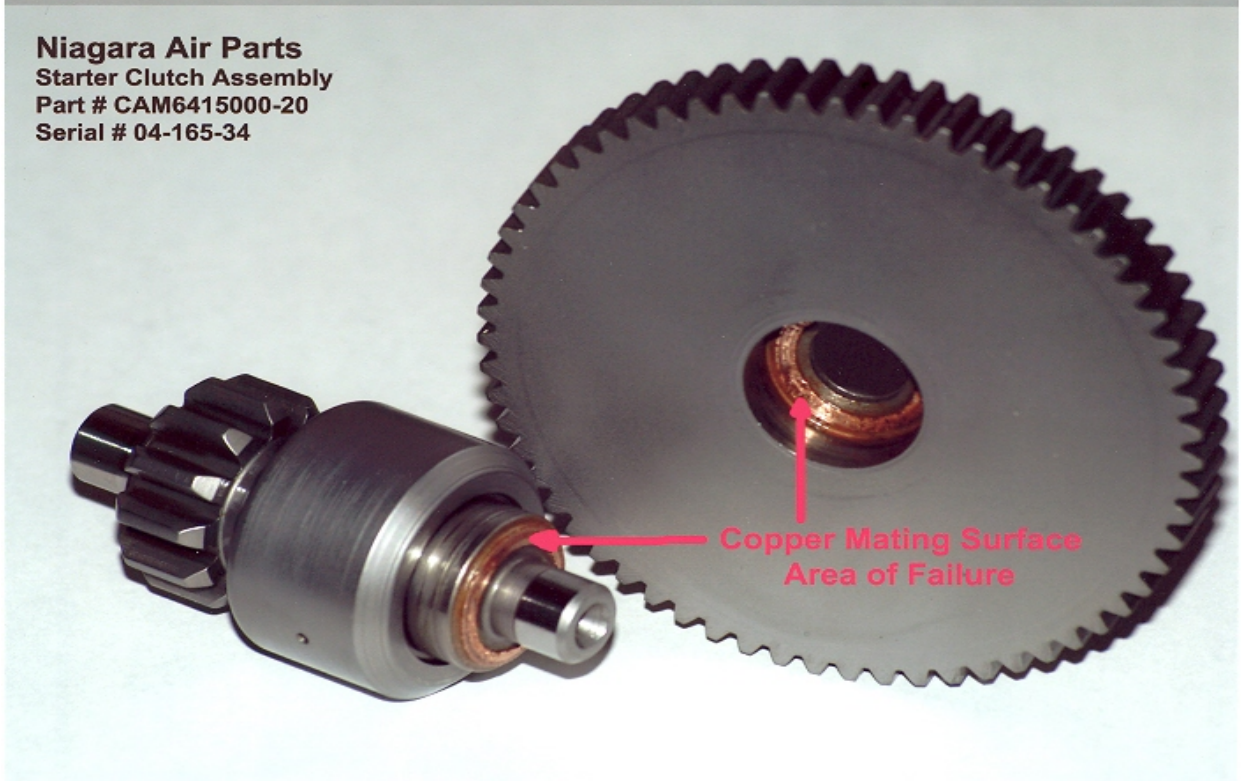
(An A&P mechanic provides the following description, research, and photographs of a failed clutch assembly driven by a Prestolite starter. Effected "upstream assemblies" include a Continental O-200A engine and an entire Cessna 150M airplane—all bolted to the starter....)

"While attempting to start the engine the starter was heard spinning, but the engine would not crank. *(I)* disassembled and inspected the engine starter drive mechanism by removing the starter and clutch drive assembly from the rear accessory section of the engine. While inspecting the clutch drive assembly (Niagara Air Parts: P/N CAM641 500-20), *(I)* found the larger drive gear was separated from the shaft." *(This gear is (normally) driven by the starter, but would now spin freely due to its separation from the shaft.)* "Upon closer inspection it appeared this drive gear was attached to the shaft by braising, as the mating surfaces were brass or copper in color. Due to the high rotational torque involved in the starting process, it would appear this method of attachment *(is)* insufficient. *(I)* spoke with a representative of Niagara Air Parts who advised *(a brazing type weldment)* is the normal process of attachment of the drive gear to the shaft. He said they have tested the operating strength of this process to a four ton load rating without failure. *(The representative further...)* explained the gear and shaft are heated to approximately 1700 degrees with copper used as brazing material between parts. He *(speculated)* engine kick-back on start or shutdown may have caused this *(gear/shaft separation)*. Niagara requested the part be returned for inspection and analysis of the failure."

(Four of the six submitted photographs have been scanned at <u>low resolution</u> and are presented below. What the reader cannot know through the "budget scan" and the limitations of most computer monitors is the outstanding clarity, depth of field, and near perfect lighting and background of these pictures! John K. L.'s equipment and talent were then "painted" on Epson Professional paper—the sum total of which leaves this amateur photographer with about 50 unanswered, "how to" questions....)







(A search of the FAA Service Difficulty Reporting System data base revealed 3 additional entries for the base part number.)

Part Total Time: 44.0 hours.

TCM

TCM Magneto; S6LSC-204T; Broken Distributor Teeth; ATA 7414

(This magneto sparks a Lycoming O540F1 on a Robinson R44 helicopter.)

A helicopter mechanic describes this magneto difficulty. "The pilot noticed the R/H magneto produced excessive RPM drop after startup." "Investigation found this magneto's distributor gear had 13 missing teeth (all pieces were recovered). I reassembled the unit with a new part *(distributor rotor P/N 10-357586)*. The pilot flew for about an hour with no problems. The next morning the L/H magneto failed—five teeth were missing *(from the rotor; all recovered)*. Both starts *(occurred)* in the morning, with a *(previous)* overnight temperature down to about 20 degrees F. This aircraft normally operates in the *(Arizona environment)*. *(Speculation includes)* a remote possibility a small amount of dirt/oil/grease on the washer with the retaining clip may have impeded rotation in cold weather. I have not seen this problem on fixed wing aircraft that stay outside. *(It may be)* possible rotorcraft harmonics cause the nylon gear to have additional stress. Both *(described)* gears appeared to have the correct amount of TCM grease from the 500 hour inspection *(performed)* about 130 hours earlier."

"*(I)* confirmed a magneto gear holding tool (sometimes used during stabbing a magneto to an engine) was not used *(and/or)* was not a cause *(of the defect)* since the damaged teeth clock angle was not near the 'window' timing teeth. *(My)* recommendation *(to avoid this problem)* is to install a new gear at 1000.0 hours." *(A search of the FAA Service Difficulty Reporting System data base revealed 25 entries for the full part number, 39 for the base number.)*

Part Total Time: 1200.0 hours.

AIR NOTES

INTERNET SERVICE DIFFICULTY REPORTING (iSDR) WEB SITE

The Federal Aviation Administration (FAA) Internet Service Difficulty Reporting (iSDR) web site is the front-end for the Service Difficulty Reporting System (SDRS) data base that is maintained by the Aviation Data Systems Branch, AFS-620, in Oklahoma City, Oklahoma. The iSDR web site supports the Flight Standards Service (AFS), Service Difficulty Program by providing the aviation community with a voluntary and electronic means to conveniently submit in-service reports of failures, malfunctions, or defects on aeronautical products. The objective of the Service Difficulty Program is to achieve prompt correction of conditions adversely affecting continued airworthiness of aeronautical products. To accomplish this, Mechanical Reliability Reports (MRRs), Malfunction or Defect Reports (M or Ds), or Service Difficulty Reports (SDRs) as they are commonly called, are collected, converted into a common SDR format, stored, and made available to the appropriate segments of the FAA, the aviation community, and the general public for review and analysis. SDR data is accessible through the "Query SDR data" feature on the iSDR web site at: http://av-info.faa.gov/sdrx/.

In the past, the last two pages of the Alerts contained a paper copy of FAA Form 8010-4, Malfunction or Defect Report. To meet the requirements of *Section 508, this form will no longer be published in the Alerts; however, the form is available on the Internet at: http://forms.faa.gov/forms/faa8010-4.pdf. You can still download and complete the form as you have in the past.

*Section 508 was enacted to eliminate barriers in information technology, to make available new opportunities for people with disabilities, and to encourage development of technologies that will help achieve these goals.

A report should be filed whenever a system, component, or part of an aircraft, powerplant, propeller, or appliance fails to function in a normal or usual manner. In addition, if a system, component, or part of an aircraft, powerplant, propeller, or appliance has a flaw or imperfection, which impairs or may impair its future function, it is considered defective and should be reported under the Service Difficulty Program.

The collection, collation, analysis of data, and the rapid dissemination of mechanical discrepancies, alerts, and trend information to the appropriate segments of the FAA and the aviation community provides an effective and economical method of ensuring future aviation safety.

The FAA analyzes SDR data for safety implications and reviews the data to identify possible trends that may not be apparent regionally or to individual operators. As a result, the FAA may disseminate safety information to a particular section of the aviation community. The FAA also may adopt new regulations or issue airworthiness directives (ADs) to address a specific problem.

The iSDR web site provides an electronic means for the general aviation community to voluntarily submit reports, and may serve as an alternative means for operators and air agencies to comply with the reporting requirements of 14 Title of the Code of Federal Regulations (CFR) Section 121.703, 125.409, 135.415, and 145.221, if accepted by their certificate-holding district office. FAA Aviation Safety Inspectors may also report service difficulty information when they conduct routine aircraft maintenance surveillance as well as accident and incident investigations.

The SDRS data base contains records dating back to 1974. At the current time, we are receiving approximately 40,000 records per year. Reports may be submitted to the iSDR web site on active data entry form or submitted hardcopy to the address below.

The SDRS and iSDR web site point of contact is:

Tom Marcotte
Service Difficulty Reporting System, Program Manager
Aviation Data Systems Branch, AFS-620
P.O. Box 25082
Oklahoma City, OK 73125
Telephone: (405) 954-6500
SDRS Program Manager e-mail address: 9-AMC-SDR-ProgMgr@faa.gov

IF YOU WANT TO CONTACT US

We welcome your comments, suggestions, and questions. You may use any of the following means of communication to submit reports concerning aviation-related occurrences.

Editor: Daniel Roller (405) 954-3646
FAX: (405) 954-4570 or (405) 954-4655

E-mail address: Daniel.Roller@faa.gov

Mailing address: FAA, **ATTN: AFS-620 ALERTS**, P.O. Box 25082, Oklahoma City, OK 73125-5029

You can access current and back issues of this publication from the internet at: http://av-info.faa.gov/. Select the General Aviation Airworthiness Alerts heading.

AVIATION SERVICE DIFFICULTY REPORTS

The following are abbreviated reports submitted for the previous month, which have been entered into the FAA Service Difficulty Reporting (SDR) System data base. This is not an all-inclusive listing of Service Difficulty Reports. For more information, contact the FAA, Regulatory Support Division, Aviation Data Systems Branch, AFS-620, located in Oklahoma City, Oklahoma. The mailing address is:

FAA
Aviation Data Systems Branch, AFS-620
PO Box 25082
Oklahoma City, OK 73125

To retrieve the complete report, click on the Control Number located in each report. These reports contain raw data that has not been edited. Also, because these reports contain raw data, the pages containing the raw data are not numbered.

If you require further detail please contact AFS-620 at the address above.

Federal Aviation Administration

Service Difficulty Report Data

Sorted by aircraft make and model then engine make and model. This report derives from unverified information submitted by the aviation community without FAA review for accuracy.

Control Number / Difficulty Date	Aircraft Make / Aircraft Model	Engine Make / Engine Model	Component Make / Component Model	Part Name / Part Number	Part Condition / Part Location
QKPR07001			HONEYWELL	FCU	LEAKING
2/2/2007			GTCP36150RR	38828406	APU
THERE IS A PIN HOLE IN THE FCU HOUSING. IN THIS CASE THERE WAS 4 STREAMS OF FUEL AND HEAVY MISTING.					
2007FA0000099				PROPELLER	CRACKED
11/9/2006				16160DTM	
CRACK DETECTED LENGTHWISE AT 9 INCH STATION. LATEST LOGBOOK ENTRY FOR TSOH, DATED 7-28-2005. (SW15200706340) (K)					
2007FA0000101				MAGNETO	FROZEN
1/24/2007				6320	ENGINE
SHAFT IN MAGNETO FROZEN, WOULD NOT MOVE. (K)					
2007FA0000173				MAGNETO	MALFUNCTIONED
2/22/2007				6310	ENGINE
MAGNETO CAUSING HIGH ALTITUDE MIS-FIRE.					
2007FA0000116		GARRTT		TURBINE BLADES	SEPARATED
8/28/2006		TPE33111U		31081251	ENGINE
ENGINE WAS REPORTED TO HAVE FLAMES OUT OF TAILPIPE. TEARDOWN OF ENGINE SHOWS THAT A TURBINE BLADE HAD SEPARATED AT THE FIRTREE. BLADE DEBRIS CAUSED DAMAGE TO TURBINE OIL LINE, RESULTING IN A LEAK. TURBINE DISC WAS REBLADED AT LAST MAINTENANCE EVENT. TURBINE DISC/BLADES WERE PROVIDED TO MFG PROJECT ENGINEERING FOR MATERIAL ANALYSIS. (K)					
2007FA0000166	AGUSTA	ALLSN		FITTING	WORN
2/23/2007	A109A2	250C20		1090110677	MAIN ROTOR
MAIN ROTOR DRIVELINK UPPER FITTING STEEL BUSHES (109-0110-70-1) AND UPPER SLEEVE (109-0110-69-1) SEVERELY WORN. SLEEVE STEPPED TO LESS THAN HALF MANUFACTURED DIAMETER AT BOTH ENDS. STEEL BUSHES WORN THROUGH COMPLETELY, WEAR EXTENDING INTO FITTING. HOLE IN BOTH ENDS OF FITTING FOR STEEL BUSHES ELONGATED. PHOTOGRAPHS AND DISCREPANT PARTS AVAILABLE IF REQUIRED. DEFECTIVE PARTS REPLACED.					
2007FA0000113	AMTR			V-BELT	BROKEN
2/5/2007	EXEC162F			E181150P	TAIL ROTOR
V BELT PREMATURELY FAILED. THIS IS A 250 HOUR CHANGE OUT PART.					
2007FA0000106	AMTR	WALTER		FRICTION LOCK	INOPERATIVE
1/11/2007	LANCAIR	M601E			POWER LEVER
AIRCRAFT EXPERIENCED LOSS OF POWER DURING TAKEOFF AND LANDED WITH LANDING GEAR RETRACTED DEPARTING RUNWAY FROM WHICH TAKEOFF WAS MADE. INVESTIGATION REVEALED FRICTION LOCK WAS NOT EFFECTIVE. (K)					

2007FA0000145	BEECH	PWA	EXHAUST DUCT	CRACKED
2/15/2007	200BEECH	PT6A41	02R3022406	LT ENGINE

WHILE PERFORMING SCHEDULED MAINTENANCE, REMOVED LT ENGINE EXHAUST STACKS TO FACILITATE INSPECTING THE EXHAUST DUCT. FOUND A 14 INCH CRACK FOLLOWING THE CIRCUMFERENCE OF THE SKI SLOPE WITH A 3 INCHES CRACK PROPAGATING LONGITUDELY AT THE 10 O'CLOCK POSITION FROM THE 14 INCHES CRACK. EXHAUST DUCT HAD PWA SB 3380 COMPLIED WITH 731 HOURS EARLIER. BECAUSE OF THE REMAINING ENGINE TIME, IT WILL BE PULLED FOR OVERHAUL.

DEBD624B0207	BEECH	GOODYEARAERO	BOLT	BROKEN
2/2/2007	400A		GYS186C21	MLG WHEEL

A WHEEL THRU BOLT BROKE WHILE BEING TORQUED DURING WHEEL REASSEMBLY AFTER A TIRE CHANGE.

2007FA0000109	BEECH	PWA	BELLCRANK	FAILED
1/31/2007	65A901	PT6*	50524401	ELEVATOR

FOUND BROKEN FORK ON ELEVATOR BELLCRANK SUPPORT ARM AT FWD END OF ELEVATOR LT PUSHROD. FOUND THE PUSH ROD FWD ATTACH BOLT HAD BEEN OVER-TORQUED SO MUCH AS TO CREATE A 0.016 INCH - 0.021 INCH DEPRESSION IN EACH (MAGNESIUM) FORK WHERE THEY PRESSED INTO THE ROD END BEARING. MFG SB2231R2 INCLUDES: INSPECTION FOR CRACKS IN THIS AREA OF ELEVATOR BELLCRANK. PROPER GAP BETWEEN ROD END AND SUPPORT ARM FORKS (0.00 INCH TO 0.01 INCH GAP) PROPER TORQUE OF PUSHROD ATTACH BOLT (70-108 INCH LBS) RECOMMEND FOLLOWING PROPER INSPECTION, INSTALLATION AND TORQUE WHEN INSTALLING THE BELLCRANK AND PUSHRODS. FOLLOW THE INSTRUCTIONS IN THE MM AND SB2231R2. (K)

FCPR20070003	BEECH	CONT	GEAR	BROKEN
1/31/2007	A36	IO550B	655516	CAMSHAFT

ENGINE FAILED IN FLIGHT. FOUND 13 TEETH MISSING FROM CAMSHAFT GEAR P/N 655516.

2007FA0000115	BEECH	CONT	MOUNT	CORRODED
1/11/2007	A36	IO550B		ENGINE

PERFORMED ANNUAL INSPECTION ON ENGINE, FOUND BLACK (FRETTING) CORROSION BELOW CENTER 2 (LT AFT) ENGINE MOUNT BOLTS. BOLTS WERE LOOSE IN MOUNT, BUT THE NUTS WERE TIGHT ON BOLTS. PROBLEM IS THAT THE BOLTS ARE A LITTLE TOO LONG AND THE NUTS WERE RUNNING OUT OF THREADS ON THE BOLTS. SOLUTION WAS TO ADD ANOTHER WASHER BELOW THE NUTS, THEN RETORQUE BACK TO SPECS. (K)

2007FA0000147	BEECH		HOSE	DISCONNECTED
2/1/2007	B95			BATTERY BOX

BATTERY ELECTROLYTE RESIDUE FOUND ON LEFT NOSE GEAR DOOR AND LOWER FORWARD FUSELAGE. INSPECTION REVEALED BATTERY BOX DRAIN HOSE DISCONNECTED AND HANGING IN LOWER NOSE STRUCTURE AREA BELOW THE BAGGAGE FLOOR. ACCESS IS HINDERED BY NUMEROUS FASTENERS THAT ARE HARD TO REMOVE. AT SOME TIME IN THE PAST THE ADF ANTENNA MAST, WHICH DOUBLED AS THE BATTERY DRAIN MAST, HAD BEEN REMOVED AND THE BATTERY DRAIN HOSE WAS NOT RECONNECTED TO A SUITABLE DRAIN. THIS COULD CAUSE CORROSION DAMAGE TO NOSE AREA LOWER STRUCTURE ON TRAVEL AIR AND BARON AIRPLANES, WHICH HAVE SIMILAR DESIGN. BEECH MODEL 95 PARTS AND SHOP MANUALS CARRY NO REFERENCES ABOUT THE BATTERY DRAIN SYSTEM. SUGGEST REVIEW OF ANY RAYTHEON SERVICE BULLETINS DISCUSSING BATTERY BOX DRAIN COMPONENTS FOR MODEL 95 AND 55 AIRPLANES, AND REVISION OF MANUALS TO INCLUDE MISSING COMPONENTS.

2007FA0000174	BEECH	LYC	HOSE	DISCONNECTED
2/1/2007	B95	O360*		BATTERY DRAIN

BATTERY ELECTROLYTE RESIDUE FOUND ON LT NOSE GEAR DOOR AND LOWER FORWARD FUSELAGE. INSPECTION REVEALED BATTERY BOX DRAIN HOSE DISCONNECTED AND HANGING IN LOWER NOSE STRUCTURE AREA BELOW THE BAGGAGE FLOOR. ACCESS IS HINDERED BY NUMEROUS FASTENERS THAT ARE HARD TO REMOVE. AT SOME TIME IN THE PAST THE ADF ANTENNA MAST, WHICH DOUBLED AS THE BATTERY DRAIN MAST, HAD BEEN REMOVED AND THE BATTERY DRAIN HOSE WAS NOT RECONNECTED TO A SUITABLE DRAIN. THIS COULD CAUSE CORROSION DAMAGE TO NOSE AREA LOWER STRUCTURE ON TRAVEL AIR AND BARON

AIRPLANES, WHICH HAVE SIMILAR DESIGN. PARTS AND SHOP MANUALS CARRY NO REFERENCES ABOUT THE BATTERY DRAIN SYSTEM. SUGGEST REVIEW OF ANY MFG SB DISCUSSING BATTERY BOX DRAIN COMPONENTS, AND REVISION OF MANUALS TO INCLUDE MISSING COMPONENTS.

CA061208003	BELL	ALLSN	TACH GENERATOR	WORN
12/5/2006	206L4	250C30P	22A656	

(CAN) GREASE FOUND WASHED OUT CAUSING PREMATURE WEAR OF DRIVE SPLINES LEADING TO HYDRAULIC SYSTEM FAILURE. 298.7 HRS SINCE PREVIOUS LUBRICATION. (TC NR 20061208003)

2007FA0000093	BLANCA	CONT	CRANKSHAFT	BROKEN
12/25/2006	1730A	IO520K		ENGINE

CRANKSHAFT IS BROKEN IN AREA OF NR6, NR5 ROD JOURNAL. CRANKSHAFT BROKE ON APPROACH TO LANDING AS PROP RPM CONTROL WAS ADVANCED ON SHORT FINAL. ENGINE POWER UNDER VERY LOW POWER. ENGINE HAS NOT BEEN DISASSEMBLED YET. THERE IS ALREADY AN AD NOTE TO TAKE THESE SHAFTS OUT OF SERVICE. IT WAS A NON VAR SHAFT. (K)

2007FA0000123	BOEING	GE	INTERCOSTAL	CRACKED
9/18/2006	737300	CFM56*	6517684	BS 303 S10L

CABIN STA 303.9 JUST ABOVE STRINGER 10L. INTERCOSTAL OUTER CHORD ANGLE, CRACKED. (K)

2007FA0000130	BOEING	GE	FRAME	CRACKED
9/18/2006	737300	CFM56*	69353521	BS 400 S8R

MID CABIN, STATION 400 FRAME AT STRINGER 8R, CRACKED AT PSU RAIL OUNT ATTACH POINT. (K)

2007FA0000131	BOEING	GE	CREASE BEAM	CORRODED
9/18/2006	737300	CFM56*	65807351	BS 947-992 S17R

AFT GALLEY DOOR CREASE BEAM INNER CHORD ANGLE, BS 947 TO 992, STRINGER 17R, WL 208, CORROSION OUT OF LIMITS. (K)

2007FA0000108	BOEING	GE	POWERPLANT	CONTAMINATED
1/1/2007	737300	CFM563B1	CFM563B1	OIL SYSTEM

ENGINE SUFFERED AN IFSD DUE TO POWER LOSS AND A COMMANDED ENGINE SHUTDOWN WAS CARRIED OUT. ENGINE RESTART WAS ATTEMPTED, UNSUCCESSFULLY. FURTHER INVESTIGATION REVEALED THAT NR 10 STRUT ON FAN FRAME (9 O`CLOCK STRUT AFT LOOKING FWD) WHICH RADIAL DRIVE SHAFT IS LOCATED WAS PUNCTURED, BOTH ON UPPER AND LOWER SURFACES OF STRUT. IT WAS AGREED TO CARRY OUT ENGINE REMOVAL AND RETURN ENGINE TO REPAIR FACILITY. HYDRAULIC FLUID WAS FOUND IN OIL SYSTEM, AIR STARTER AND CSD OIL SUMPS. ALL OIL WETTED ITEMS REQUIRE INSP. ENGINE HAD UNDERGONE TROUBLESHOOTING FOR HIGH OIL CONSUMPTION FOLLOWING REPORTS ON 2 FLIGHTS AND RETURN ON DEC 22, 2006. LEVELS OF 2.08 GALLON QUARTERS/HOUR WERE REPORTED AND AVERAGE OIL CON WAS 0.15 GALLON QUARTERS/HOUR. OIL WETTING WAS SEEN AROUND THE TGB AND FAN FRAME NR 10 STRUT. TGB AND RDS OUTER HOUSING WERE REMOVED. O`RING DAMAGE WAS FOUND AND SEALS WERE REPLACED. GROUND CHECKS REVEALED THAT OIL LEAKAGE WAS STILL APPARENT FROM SAME LOCATIONS. FURTHER DISASSEMBLY BY REMOVAL OF TGB, INNER AND OUTER RDS HSG AS WELL AS RADIAL DRIVE SHAFT AND BEARING TOOK PLACE. INSP REVEALED AXIAL CRACKING AND FRETTAGE ON INNER RDS HSG AND COMPONENT WAS REPLACED. REMAINING ITEMS WERE INSPECTED. INNER RDS HSG WAS BONDED TO FAN FRAME AND REMAINING ITEMS WERE REINSTALLED. GROUND CHECKS REVEALED THAT THERE WAS NO OIL LEAKAGE OR WETTING AROUND TGB AND NR 10 STRUT WAS ALSO DRY AFTER OPENING C-DUCTS. ENGINE SUFFERED AN IFSD. INSP REVEALED HEAVY METALLIC CONTAMINATION ON TGB/AGB AND FWD SUMP MCD`S AND UPPER AND LOWER SURFACE OF NR 10 STRUT WAS PUNCTURED WHICH INDICATED A FAILURE OF RADIAL DRIVE SHAFT. ENGINE WAS REMOVED AND INVESTIGATION SHOWED FAILURE OF BRG ON RDS AND SHAFT AND INNER AND OUTER HOUSINGS AND FAN FRAME FRACTURE HAD OCCURRED. INVESTIGATION OF OIL SAMPLES TAKEN FROM ENGINE SUMPS AND ACCESSORIES (CSD AND ENGINE STARTER) REVEALED PRESENCE OF HYDRAULIC FLUID. THESE TESTS WERE CARRIED OUT AT AN INDEPENDENT LABORATORY (QC METALLURGICAL). SAMPLES WERE TAKEN BECAUSE SMELL, COLOR AND CONSISTENCY OF LUBRICATION FLUID DID NOT RESEMBLE (2380) WHICH SHOULD HAVE BE

ENGINE OIL. (K)

2007FA0000127	BOEING	GE	FRAME	CRACKED
9/18/2006	737301	CFM56*	6546533	BS 500A S8-9L

MID CABIN, STA 500A FRAME, BETWEEN STRINGER 8 AND 9L, CRACKED AT PSU MOUNT RAIL ATTACH POINT. (K)

2007FA0000124	BOEING	GE	SKIN	GOUGED
9/26/2006	737301	CFM56*	654577266	BS 860-885

UPPER FUSELAGE, STA 860 THRU 885, LBL 8 THRU RBL 8, UNDER DORSAL FIN BLADE SEAL, SKIN IS GOUGED. (K)

2007FA0000132	BOEING	GE	FLOORBEAM	CORRODED
8/17/2006	737301	CFM56*	BAC1518399	BS 312

CABIN BS 312, FROM LBL 55 TO RBL 55 WL 208, FLOORBEAM HAS LIGHT CORROSION. (K)

2007FA0000126	BOEING	GE	FRAME	CRACKED
9/27/2006	737301	CFM56*	65465251	BS 727 S14L

FRAME IS CRACKED AT BODY STAION 727, STRINGER 14L. (K)

2007FA0000125	BOEING	GE	FRAME	CRACKED
9/26/2006	737301	CFM56*	654653146	BS500A S8-9R

UPPER FUSELAGE, BS 500A, BETWEEN STR 8R AND STR 9R, FRAME IS CRACKED AT PSU MOUNT. (K)

2007FA0000128	BOEING	GE	SKIN	DENTED
9/27/2006	737301	CFM56*	6552988	BS 727 S14L

BODY STATION 915 ABOVE STRINGER 25L LAP JOINT FUSELAGE SKIN HAS DENT. (K)

2007FA0000133	BOEING	GE	FRAME	CRACKED
9/24/2006	737301	CFM56*	65465935	FUSELAGE

CABIN, BS 787, FRAME AT STR 8R, CRACKED AT STOW BIN ATTACH BRACKET. (K)

2007FA0000134	BOEING	GE	PRESSURE PANEL	CRACKED
9/24/2006	737301	CFM56*	6545409245	FUSELAGE

MID CABIN BS 663, LBL 31, WHEEL WELL PRESSURE DECK WEB, CRACKED. (K)

2007FA0000135	BOEING	GE	FRAME	CRACKED
9/27/2006	737301	CFM56*	65465251	BS 727 S4L

FRAME IS CRACKED AT BODY STATION 727, STRINGER 14L. (K)

2007FA0000095	CESSNA	LYC	CRANKSHAFT	BROKEN
1/9/2007	172L	O320E2D	AEL321031	ENGINE

ENGINE BEGAN RUNNING ROUGH AND BECAME SMOOTH AGAIN DURING DESCENT. TROUBLESHOOTING FIRST FOUND BRASS METAL PARTICLES IN AIR FILTER AND OIL. CRANKSHAFT WAS APPARENTLY BROKEN OR CRACKED BUT STILL TOGETHER. AFTER NUMEROUS GROUND RUSN AND KNOCKING NOISES HEARD, THE CRANKSHAFT BROKEN AND ROD THROWN THROUGH CASE. THE BREAK WAS BETWEEN NR 3 AND NR 4 ROD JOURNALS. SENG BACK TO ENGINE COMPONENTS FOR WARRANTY AND ANALYSIS. (K)

2007FA0000143	CESSNA	LYC	CONTROL CABLE	BROKEN
11/26/2006	172M	O320*	0510105207	RUDDER

RUDDER CONTROL CABLE BRAKES DURING FLIGHT TRAINING WHILE PERFORMING FORWARD SLIP MANEUVER ON FINAL APPROACH. INITIAL INSPECTION SHOWS CABLE BROKE JUST FORWARD OF TERMINAL END AT THE LOWER BELL CRANK. FURTHER INSPECTION REVEALED THE CAUSE OF FAILURE TO BE CORROSION INSIDE THE

STEEL CABLE (PN 0510105207). SINCE THE LOWER RUDDER BELLCRANK AREA IS EXPOSED TO THE ELEMENTS OUTSIDE OF THE AIRCRAFT, RECOMMENDATIONS IS TO REPLACE THE RUDDER CONTROL CABLE WITH STAINLESS STEEL TYPE (PN 0510105305) AVAILABLE FROM THE OEM. (K)

2007FA0000122	CESSNA	LYC	NUT	LOOSE
1/5/2007	172N	O320*		ARM RETAINER

THE NR 3 CYLINDER EXHAUST ROCKER ARM RETAINING NUT BECAME LOOSE, REDUCING LIFT ON THE EXHAUST VALVE, NOT ALLOWING SUFFICIENT AIR TO EXIT THE CYLINDER. PRESSURE IN THE CYLINDER EXCEDED THE STRENGTH OF THE INTAKE VALVE SYSTEM TO OPEN, CAUSING THE INTAKE PUSHROD TO FALL (BEND). RECOMMEND A SIMPLE LOCKPLATE BE ADDED UNDER THE ROCKER ARM RETAINING NUT WITH A LOCK TAB TO ELIMINATE THIS POSSIBLE FAILURE. (K)

2007FA0000104	CESSNA		CONTROL CABLE	FRAYED
2/1/2007	172S		S394	AILERONS

DURING A ROUTINE INSPECTION THE AILERON CONTROL DIRECT CABLE WAS FOUND SERIOUSLY WORN IN THE CABIN OVERHEAD AREA. THE AILERON BALANCE AND DIRECT CABLES ARE SEPARATED AND GUIDED BY 3 PULLIES, P/N-S394, INDEX NR 30, CHAPTER 27-10-00, FIG 3 IN THE CESSNA PARTS MANUAL. THE CENTER CABLE WAS WORN EXTENSIVELY AND HAD BROKEN STRANDS. THE WEAR IS CAUSED BY CONTACT WITH THE PULLEY. IT IS DIFFICULT TO SEE WITHOUT ROTATING THE CABLE AND EXPOSING THAT PORTION OF THE CABLE THAT CONTACTS THE PULLEY DURING LEVEL FLIGHT. THE CABLE AT FIRST APPEARS SHINY, BUT WITH THE AID OF A POWERFUL MAGNIFYING GLASS REVEALS MUCH MORE SERIOUS WEAR. OBVIOUSLY, THE FAILURE OF THIS CABLE WOULD LIKELY RESULT IN THE LOSS OF THE AIRCRAFT WITH LITTLE OR NO WARNING.

ZB0R20070001	CESSNA		WIRE	CHAFED
1/31/2007	172S			INSTRUMENT PANEL

PILOT REPORTED SMOKE ODOR AND STANDBY INSTRUMENT LIGHTS FLICKERED ON RUN-UP PRIOR TO TAKEOFF. INVESTIGATION REVEALED WIRE BUNDLE WHICH CONTAINS THE POWER WIRE FOR THE STANDBY INSTRUMENT LIGHTS WAS CHAFING ON THE LOWER LEFT CORNER OF THE AUDIO PANEL RACK. MAINT REPLACED A SECTION OF THE AFFECTED WIRE. OPS CK GOOD.

2007FA0000120	CESSNA	LYC	SWITCH	ODOR
1/29/2007	172S	IO360L2A	CM358910	TAXI LIGHT

PILOT REPORTED TO APPROACH THAT THERE WAS AN ELECTRICAL SMELL IN CABIN. AN EMERGENCY WAS DECLARED AND AIRCRAFT LANDED WITHOUT INCIDENT. UPON INSPECTION, FOUND THE TAXI LIGHT CIRCUIT BREAKER/SWITCH WAS SLIGHTLY DISCOLORED, SMELLED BURNED AND IT WAS INOPERATIVE. THERE WAS NO APPARENT OTHER DAMAGE TO CIRCUIT OR ANY OTHER PART. (K)

2007FA0000183	CESSNA	LYC	GEAR	LOOSE
2/11/2007	172S	IO360L2A	13S19646	CRANKSHAFT

DURING TAKEOFF AT 400 FT AGL ENGINE QUIT FORCING AN OFF AIRPORT EMERGENCY LANDING. INITIAL INSPECTION FOUND NO MOVEMENT OF ACCESSORIES AND VALVE MOVEMENT. REMOVED ACCESSORIES CASE AND FOUND DRIVE GEAR ON CRANKSHAFT MOUNT BOLT LOOSE AND PIN SHEARED. MARKS SHOW THAT BOLT AND GEAR WERE LOOSE FOR SOME TIME ALLOWING WEAR ON PIN UNTIL FAILURE. SUSPECT INCORRECT TORQUE OR INCORRECT SEATING OF GEAR TO FLANGE. ALSO WITH GEAR LOOSE BOLT COULD BE TURNED IN LOCKING TAB. HOLE IN LOCKING TAB TOO LOOSE ON BOLT. ENGINE NEW FROM MFG. WITH 1855.3 HOURS.

SO19200712477	CESSNA	LYC	WIRE	BROKEN
1/26/2007	177RG	IO360A1B6		WARNING HORN

DURING THIRD NIGHT CURRENCY LANDING PILOT FAILED TO EXTEND GEAR AND DIDN'T HEAR THE GEAR UP WARNING HORN. SHOWING A BROKEN WIRE AT THE GEAR WARNING HORN SWITCH.

2007FA0000171	CESSNA	CONT	CESSNA	TORQUE TUBE	BINDING
2/20/2007	340A	IO550*		504501033	MLG

DURING REPLACEMENT OF ORIGINAL EQUIPMENT TORQUE TUBE (P/N 5045010-18/19) WITH MFG REPLACEMENT

P/N 5045010-32/33 INTERFERENCE BETWEEN THE TORQUE TUBE AND AIRFRAME ATTACHMENT FITTING WAS DISCOVERED. RIGGING THE MLG TO ACHIEVE A .1250 DROP OFF WAS IMPOSSIBLE DUE TO THE INTERFERENCE BETWEEN THE TORQUE TUBE AND THE ATTACHMENT FITTING. DROP OFF IS ACHIEVED ONCE THE TORQUE TUBE ROTATES FAR ENOUGH OVER CENTER TO ALLOW THE GEAR TO DROP .1250 BACK DOWN FROM ITS MAXIMUM HEIGHT. MFG TECHNICAL SUPPORT INDICATED THAT THE ORIGINAL TORQUE TUBE (-18/19) HAD A FLAT SPOT BETWEEN THE AFT HINGE ARMS DESIGNED TO CLEAR THE AIRCRAFT STRUCTURE. THIS FLAT SPOT WAS ORIENTED AT A 33 DEGREE OFFSET. THE TORQUE TUBES WERE REDESIGNED IN 1979 WITH A 0 DEGREE OFFSET IN THE SAME AREA. INSPECTION OF A 1980 340A WITH THE NEW-STYLE 0 DEGREE OFFSET TORQUE TUBE (FACTORY INSTALLED) CLEARLY SHOWS DAMAGE AT THE POINT WHERE THE TORQUE TUBE CONTACTS THE AIRCRAFT STRUCTURE. A NEW STYLE (P/N 5045010-24/25) TORQUE TUBE WHICH HAD BEEN REMOVED AT ITS RECOMMENDED LIFE LIMIT WAS OBTAINED AND THIS TORQUE TUBE ALSO CLEARLY SHOWS DAMAGE FROM CONTACTING THE AIRFRAME ATTACH POINT. SUSPECT THAT MOST IF NOT ALL MFG AIRCRAFT WITH THE 5045010-32/33 TORQUE TUBES INSTALLED HAVE THIS PROBLEM (5045010-24/25 TORQUE TUBES ALSO HAVE THE 0 DEGREE OFFSET BUT WERE SUPERSEDED BY P/N -32/33). THE -32/33 PART WILL NOT ALLOW FOR PROPER GEAR RIGGING BECAUSE THE TORQUE TUBE CONTACTS THE AIRFRAME BEFORE DROP OFF IS ACHIEVED. THIS WILL CAUSE UNDUE STRESS TO BE APPLIED TO THE LANDING GEAR SYSTEM RESULTING IN PREMATURE WEAR AND POSSIBLE FAILURE.

M1144	CESSNA	CONT	EXHAUST VALVE	BROKEN
2/8/2007	421C	GTSIO520*		NR 5 CYLINDER

PILOT REPORTED THAT RT ENGINE WAS RUNNING ROUGH IN FLIGHT. HE DID NOT SHUTDOWN ENGINE. FOUND NO COMPRESSION IN NR 5 CYLINDER ON RT ENGINE. REMOVED CYLINDER AND FOUND EXHAUST VALVE WAS BROKEN. INSTALLED OVERHAULED CYLINDER ASSEMBLY.

2007FA0000112	CESSNA	CONT	AIR FILTER	TWISTED
1/8/2007	R172K	IO360*	1116	

DURING REMOVAL OF THE AIR FILTER THE CENTER WIRE MESH SCREEN WAS FOUND TWISTED AND BENT. SOME OF THE WELDS WERE BROKEN. SCREEN DEFORMATION CAN LEAD TO UNFILTERED AIR AND FOD ENTERING THE ENGINE. APPARENT CAUSE IS EITHER OVERTORQUEING WING NUT AND/OR INSUFFICIENT STRENGTH OF SCREEN. RECOMMEND UTILIZING A STRONGER MESH/PERFORATED SCREEN OR EVALUATING INSTALLATION INSTRUCTIONS/TORQUEING PROCEDURES.

2007FA0000105	CESSNA	CONT	SPAR CAP	CORRODED
2/2/2007	T310R	TSIO520BB	51220311	LT WING

LT TOP WING SPAR CAPS AND TOP SKINS SEVERELY CORRODED IN AREA OF FACTORY NACELLE FUEL BLADDERS. LT-PN 5122031-1.

2007FA0000103	CNDAIR	GE	BRACKET	CRACKED
1/9/2007	CL6002B16	CF34*	600913563	RT FLT SPOILER

RT FLIGHT SPOILER POSITION INDICATION WOULD NOT OPERATE PROPERLY. UPON FURTHER INVESTIGATION, FOUND THE FLIGHT SPOILER TRANSMITTER BRACKET WAS CRACKED AND UNABLE TO HOLD POSITION TRANSMITTER. REMOVED AND REPLACED BRACKET. (K)

2007FA0000102	CNDAIR	GE	BRACKET	CRACKED
1/9/2007	CL6002B16	CF343B1		FLT SPOILER

WHILE PERFORMING A 96 MONTH AIRFRAME INSPECTION, DISCOVERED THE LT FLIGHT SPOILER TRANSMITTER BRACKET WAS CRACKED. UPON REMOVING BRACKET, DISCOVERED MATTING SURFACE WITH TRANSMITTER WAS CORRODED. DECIDED TO REMOVE TO INSPECT RT TRANSMITTER BRACKET AND FOUND THE RT SIDE CORRODED AS WELL. REMOVED AND REPLACED BOTH BRACKETS. RT AND LT HAVE THE SAME PN. (K)

2007FA0000092	GULSTM	GARRTT	TURBINE WHEEL	DAMAGED
1/15/2007	690B	TPE33110T	31021069	ENGINE

INSPECTION OF ENGINE REVEALED DAMAGE TO 3RD STAGE TURBINE ROTOR VISIBLE THROUGH ENGINE TAILPIPE. ENGINE WAS REMOVED FROM AIRCRAFT AND THE TURBINE SECTION MODULE REMOVED TO INVESTIGATE FOR CAUSE OF DAMAGE. UPON INSPECTION 4 EA PINS WERE FOUND MISSING FROM 2ND STAGE

TURBINE ROTOR ASSEMBLY CAUSING SIGNIFICANT DAMAGE TO VARIOUS TURBINE SECTION COMPONENTS, SEVERAL OTHER PINS WERE ALSO FOUND LOOSE AND DAMAGED. SB ADDRESSES REMOVAL OF 2ND STAGE TURBINE ROTORS PN 310210610 UTILIZING AN IMPROVED PIN DESIGN. FURTHERMORE MFG HAS INDEPENDENT SERVICE CENTER SPECIAL PROGRAM IN PLACE TO COVER PIN REPLACEMENT ON AFFECTED TURBINE ROTORS AT NO CHARGE, COVERING SECONDARY DAMAGE ON A PRORATED BASIS. (K)

SDR0701	GULSTM	RROYCE	ANGLE	CRACKED
1/23/2007	GIV	TAY6108	1159B2156227	BS 793

DURING SCHEDULED 5000 LANDING FS793 BULKHEAD CAP ANGLE NDT INSPECTION, DETECTED A 1.25 INCH LONG CRACK IN RT BULKHEAD CAP ANGLE. MANUFACTURER HAS RECOMMENDED REPLACEMENT OF LT AND RT FS793 BULKHEAD CAP ANGLES.

CWQD200702	GULSTM	RROYCE	SCISSORS	CRACKED
1/30/2007	GIV	TAY6118	1159LM305489	MLG STEERING

DURING CHECKLIST FOUND UPPER TORQUE LINK CRACKED P/N 1159LM30548-9 AT CONNECTING LOWER TORQUE LINK P/N 1159LM30553-3.

2007FA0000107	ISRAEL	GARRTT	SEAL	LEAKING
1/25/2007	1124	TFE731*	333045181	CABIN DOOR

THE AIRCRAFT DEPARTED, CLIMBING THROUGH 30000. THE CABIN ALT BEGAN TO CLIMB WITH THE AIRCRAFT. THE PILOTS REQUESTED TO DESCEND. CENTER DECLARED EMERGENCY AND GAVE CREW 12000 FT. AIRCRAFT PRESSURIZED PROPERLY AT THAT ALT. PILOT REQUESTED DEVIATION AND TO HAVE EMERGENCY CANCELED. THIS WAS GRANTED BY CENTER. AFTER LANDING, CREW LOOKED OVER THE AC AND COULD NOT FIND ANYTHING WRONG, PROCEEDED, AT 19000 FT. AIRCRAFT PRESSURIZED PROPERLY. IN MAINTENANCE CREW INSPECTED THE AIRCRAFT AND PERFORMED NUMEROUS GROUND PRESSURIZATION RUNS AN COULD NOT DUPLICATE PROBLEM. PILOT MADE STATEMENT THAT THE DOOR MAY NOT OF SEALED PROPERLY. MAINTENANCE LOOKED AT THAT ASPECT AND FOUND THAT THE DOOR CAN BE CLOSED IN A MANOR THAT IT WILL LOCK AND NOT OPEN BUT CAN PREVENT THE SEAL FROM FULLY CONTACTING THE DOOR JAM RESULTING IN A PRESSURIZATION LEAK LARGE ENOUGH THAT THE AIRCRAFT COULD SLOWLY DEPRESSURIZE. (K)

2007FA0000094	LEAR	GARRTT	ADC	FAILED
9/29/2006	35A	TFE731*	702490031304	FWD AVIONICS BAY

WHILE ENROUTE, THE PILOTS ALTIMETER FLAGGED AND OVERSPEED HORN TRIGGERED. THE ADC BEGAN TO WORK AGAIN AT THE END OF THE FLIGHT. THE ADC WAS FOUND TO BE DEFECTIVE AND REPLACED. THE SYSTEM WAS TESTED AND INSPECTED AND FOUND TO COMPLY WITH FAR 91-411, PART 43 AND TO REMAIN RVSM COMPLIANT. THERE HAS BEEN 2 PRIOR REPORTED FAILURES OF ADC`S IN THIS AIRCRAFT DATED MAY 6, 2005 AND NOV 21, 2005. (K)

HAGGAN07001	LEAR	GARKENYON	SUPPORT BRACKET	FAILED
2/23/2007	60LEAR	26044	2322330177	ZONE 500

DURING FLAP OPERATION, FLAP ACTUATOR SUPPORT BRACKETS FAILED CAUSING FLAP ACTUATOR TO DAMAGE LT WING RIB SEGMENT.

HAG07001	LEAR	PWA	GARKENYON	SUPPORT BRACKET	FAILED
2/23/2007	60LEAR	PW305	26044	2322330177	FLAP ACTUATOR

DURING FLAP OPERATION, FLAP ACTUATOR SUPPORT BRACKETS FAILED CAUSING FLAP ACTUATOR TO DAMAGE LT WING RIB SEGMENT.

2007001HAGGAN	LEAR	PWA	GARKENYON	SUPPORT BRACKET	FAILED
2/23/2007	60LEAR	PW305A	26044	2322330177	ZONE 500

DURING FLAP OPERATION, FLAP ACTUATOR SUPPORT BRACKETS FAILED CAUSING FLAP ACTUATOR TO DAMAGE

LEFT WING RIB SEGMENT.

2007FA0000100	MTSBSI	GARRTT	ROD END	BROKEN
12/4/2006	MU2B36A	TPE331*	ART73	MLG

DURING GEAR EXTENSION FOR LANDING, A LOUD BANG WAS NOTICED BY THE PIVOT AND UNSAFE LIGHT STAYED ON. AIRCRAFT WAS ROUTED TO MAINTENANCE AFTER LANDING. MAINTENANCE FOUND ROD END ART - 7E ON SHAFT HAD COME APART ANDALLOWED DOORS TO BECOME DISCONNECTED FROM ACTUATOR. (SW15200706339) (K)

2007FA0000096	PIPER	LYC	CONDUIT	SEPARATED
1/3/2007	PA24250	O540*	455180	LT MLG PUSH PULL

THE LT MAIN LANDING GEAR PUSH PULL CONDUIT SEPARATED AT THE BALL END WHERE IT IS ATTACHED TO THE SUPPORT STRUCTURE IN THE WHEEL WELL. BELIEVE THIS FAILURE OCCURRED AT THE PREVIOUS LANDING GEAR RETRACTION. (K)

2007FA0000144	PIPER	LYC	SWITCH	FROZEN
2/5/2007	PA34200	IO360C1E6	6741102	MLG

UPON LANDING, GEAR EXTENSION, DURING APPROACH TO LANDING, PILOT NOTED AN EXCEPTIONALLY LONG TIME BETWEEN GEAR SWITCH ACTUATION AND INDICATION OF ALL DOWN AND LOCKED. OUTSIDE TEMP +9 F. BELIEVE THAT SWITCH ARM FOR DOWNLOCK HAD FROZEN IN PLACE (UP) AND REQUIRED TIME TO ACTUATE. (K)

2007FA0000169	PIPER	LYC	AILERON	MISREPAIRED
2/23/2007	PA44180	O360*	86562025	RIGHT

DURING POWER OFF (CLEAN CONFIGURATION) STALLS, THE AIRCRAFT WOULD SUDDENLY BREAK LT AND IF NOT IMMEDIATELY STOPPED COULD LEAD TO A SPIN. AFTER RERIGGING ALL FLIGHT CONTROLS, CHECKING THE AIRCRAFT ALIGNMENT WITH A LASER AND SEVERAL TEST FLIGHTS BOTH BY COMPANY PILOTS AND MFG FACTORY TEST PILOT, IT WAS DETERMINED THAT WE HAD (FAT) AILERONS ON OUR FLEET. MFG HAS A HISTORY OF AILERON SKIN CRACKING. (FOR US, IT HAS JUST BEEN THE RT AILERON THAT HAS HAD THE CRACKING PROBLEM.) ONCE THE CRACK IS PAST A CERTAIN POINT YOU EITHER HAVE TO REPLACE THE AFFECTED SKIN OR REPLACE THE AILERON. DURING SKIN REPLACEMENT, IF THE PREFORMED FACTORY SKIN IS SPREAD APART EVEN A LITTLE THE T/E TAKES ON A (FAT) CONDITION. THIS LEADS

2007FA0000121	PIPER		TRANSDUCER	FAILED
1/30/2007	PA46500TP		C528072	STALL WARNING

THIS UNIT WAS INSTALLED 12 MONTHS AGO. THIS IS A TYPICAL LIFE SPAN. CAUSE OF MALFUNCTION IS UNIT BEING OVERHEATED IN FLIGHT. THEY CAN`T TURN DOWN THE HEAT BECAUSE OF THE WAY IT WAS CERTIFIED. MOST PILOTS DO NOT KNOW THIS UNIT IS INOPERATIVE. THE STALL WARNING HORN WILL SOUND EVEN THOUGH THE UNIT IS BAD. (K)

2006FA0001176	ROBSIN	LYC	ROBSIN	BOOT	LEAKING
12/3/2006	R44	O540F1A5		C1561	M/R BLADE

FLUID LEAKING FROM MAIN ROTOR BLADE PITCH BEARING HOUSING.

JZBR710K21907	SKRSKY		NUT	MISSING
2/19/2007	S76C		9867500500	FILTER CAP ASSY

DURING COMPLIANCE WITH MANDATORY SB 292-73-2824, (REPLACEMENT OF FUEL FILTER DRAIN SCREW ON HMU FILTER BOWL COVER ASSEMBLY), UPON COVER REMOVAL IT WAS DISCOVERED THAT THE NUT (P/N 9867500500) AND STOP WASHER (P/N 0319910870) WERE NOT INSTALLED, MISSING FROM DRAIN SCREW THREADS ON THE INSIDE OF THE COVER ASSEMBLY. FILTER WAS REMOVED FOR FURTHER INSPECTION OF FILTER BOWL LOWER RECESSES WITH NO EVIDENCE OF MISSING PARTS INSIDE.

2007FA0000110	SKRSKY	TMECA	STUD	BROKEN
11/25/2006	S76C	ARRIEL1	26007	RT NACELLE DOOR

ON POST-FLIGHT INSPECTION, MAINTENANCE CREW FOUND NR 2 ENGINE COMPRESSOR FOD. WE DISCOVERED

A MISSING COWL FASTENER STUD IPC ITEM 16 FIG 53-20-03 PAGE 0. WHEN FASTENER FAILS, THE LOCKING TAIL OF STUD FALLS INSIDE THE ENGINE AIR PLENUM AND THEN INGESTED BY ENGINE. THIS TYPE OF FASTENER SYSTEM IS USED THROUGH OUT S76 ENGINE AIR PLENUM AREA. THIS IS OUR 4TH EVENT OF THIS TYPE OF FAILURE CAUSING ENGINE FOD. SUGGEST A BETTER QUALITY FASTENER THAT REMAINS INTACT UPON FAILURE, TO HELP PREVENT ENGINE FOD. (K)

2007FA0000111	SKRSKY	TMECA	CAP	BURNED
12/15/2006	S76C	ARRIEL1	SPC38G	INVERTER FILTER

INVERTER WIRING: THE CREW REPORTED THE NR 1 INVERTER CAUTION LIGHT WOULD NOT COME ON WHEN THE INVERTER WAS SELECTED OFF. AFTER VERIFYING THE PROPER VOLTAGE AT THE RDAU THE AIRCRAFT WAS RAN AGAIN AND THE INVERTER CAUTION LIGHT WAS FUNCTIONING NORMAL. UPON AIRCRAFT RETURN FROM A TRIP THE CREW REPORTED THE NR 2 INVERTER WAS FAILED BUT STILL SHOWED VOLTAGE INDICATION ON THE DISPLAY. AFTER TROUBLESHOOTING THE PROBLEM A SEVERELY BURNED AND MELTED WIRE WAS FOUND IN THE AC JUNCTION BOX. UPON REMOVAL OF THE AC JUNCTION BOX THE FOLLOWING WIRES WERE REPLACED. (THIS WAS THE SEVERELY BURNED WIRE). THE OTHER 2 WIRES LISTED WERE REPLACED DUE TO COLLATERAL DAMAGE FROM WIRE NR W1-036-0-22N THE INSULATION ON THESE 2 WIRES WAS COMPROMISED. ALONG WITH THE WIRE REPLACEMENT THE FOLLOWING COMPONENTS WERE CHANGED AS APRECAUTION. RELAY K2 AND CAPACITOR C1. REF FOR THE ABOVE ITEMS CAN BE FOUND IN MM. AC POWER SYSTEM WITH DUEL INVERTERS AND IIDS. SUSPECTED CAUSE OF WIRE FAILURE. CAPACITOR C1 SHORTING OUT CAUSING A SHORT TO GROUND. THE VOLTS AMPS OUTPUT OF INVERTER IS AT HIGHER RATING THAN THE INSTALLED WIRE LOAD RATING, THUS CAUSING THE WIRE TO SHORT OPEN INSTEAD OF SHUTTING DOWN THE NR 2 INVERTER OVER. (K)

END OF REPORTS