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**Federal Aviation
Administration**

Aviation Maintenance Alerts

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**ALERT NO. 264
JULY 2000**

**Improve Reliability-
Interchange Service
Experience**

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**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 and thereby cooperate 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 which 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 Malfunction or Defect Reports. Your comments and suggestions for improvement are always welcome. Send to: FAA; ATTN: Designee Standardization Branch (AFS-640); P.O. Box 25082; Oklahoma City, OK 73125-5029.

AIRPLANES

AMERICAN CHAMPION

**American Champion; Model 8KCAB;
Decathlon; Aileron Control System Restriction;
ATA 2710**

While performing aerobatic maneuvers, the pilot placed the aircraft in a right roll. When he attempted to stop the roll, the aileron control jammed. After using all his force on the aileron control and full left rudder input, the aircraft entered a steep slip. After a few seconds, he felt a "pop" and regained control of the aircraft. He made an immediate and safe landing.

While inspecting the aircraft, a technician found a pin-and-ring assembly, which he identified as the emergency door release pin, loose on the bottom skin just below and aft of the right lower aileron bellcrank. He also found a freshly-made impression on the emergency door release pin. He speculated the loose pin found its way into the aileron bellcrank which caused the jam.

The submitter recommended that preflight inspections include a thorough search for any loose items, especially the emergency door release pin.

Part total time not reported.

BEECH

**Beech; Model A36; Bonanza; Alternator
Failure; ATA 2421**

The pilot reported the alternator failed during flight. After landing, the pilot reported this defect to maintenance personnel.

During an investigation, the technician determined the alternator (P/N 649304) had internal damage. He found the outboard brush wore into the copper shunt and cut a deep groove in the slip ring. He also discovered the stator shorted "to ground." The submitter did not offer a cause for this defect.

Part time since overhaul-1,500 hours.

**Beech; Model A36TC; Bonanza; Electrical
System Failure; ATA 2432**

The aircraft experienced a complete electrical system failure while the pilot completed the before-takeoff checklist.

During an initial investigation, the technician discovered the aircraft battery smoking; however, none of the circuit breakers, fuses, or current limiters had opened (popped). When the technician disconnected the battery cables and removed the battery cell caps, he found each cell was almost completely dry. During further investigation, he discovered an electrical short circuit between the positive

battery cable and the throttle cable (P/N 36-380061-1). The throttle cable chafed against the battery cable and penetrated the cable insulation which caused a direct electrical short from the positive battery cable "to ground." (Refer to the following illustration.)

The restricted area of the engine compartment makes maintaining proper security and clearance of critical components difficult and very important.

Part total time not reported.



Beech; Model 58; Baron; Engine Mount Defect; ATA 7120

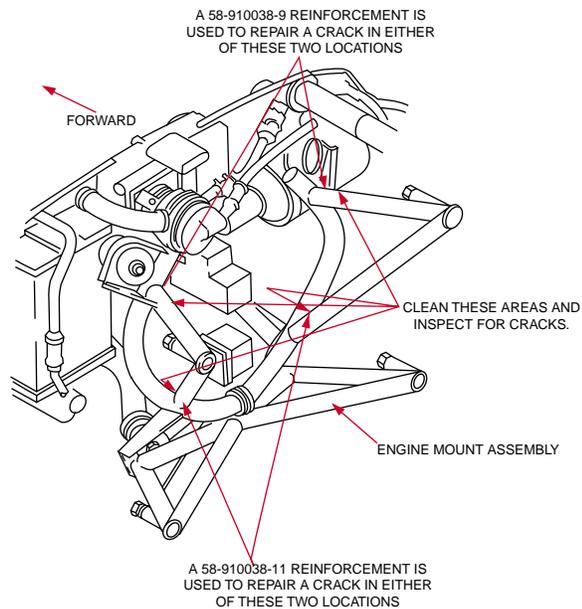
During a scheduled inspection, the inspector discovered a crack in the left engine mount.

The technician found the crack located in the upper crossover tube adjacent to a weld at the upper inboard engine attachment point. (Refer to the following illustration.) Airworthiness Directive (AD) 91-15-20, dated September 3, 1991, deals with this subject and references Beech Service Bulletin 2362, Revision 1. The requirements of AD 91-15-20 were complied with on this aircraft 2,344 operating hours prior to this finding. The repair action taken at that time, in accordance with paragraph (a)(2)(i) of AD 91-15-20 and Beech Kit 58-9007-1S, terminated the

repetitive inspection requirements. The repair kit gives instructions for repair or replacement of the original engine mount tube (P/N 96-910010-61) with a new tube (P/N 96-910010-67).

While reviewing the maintenance records, the technician discovered an entry for "sudden engine stoppage" 1,161 operating hours prior to this finding. Maintenance records showed the technician overhauled the engine and inspected the engine mount tube for damage. The submitter speculated the sudden engine stoppage caused metal fatigue in the mount tubes which culminated in the development of the reported crack.

Part total time-10,525 hours.



Beech; Model 58; Baron; Autopilot Pitch Servo Failure; ATA 2215

The pilot reported the autopilot pitch axis failed after flying through turbulence. The pitch servo remained engaged; however, it would not follow the flight director.

The technician confirmed the discrepancy and removed the pitch servo (Bendix-King, Model KS270A). When he rotated the unit from side to side, he noticed an unusual noise. Further investigation disclosed several loose internal components inside the case. He did not determine the cause of this defect. He returned the servo to the manufacturer unopened (in compliance with warranty requirements).

Part total time-149 hours.

Beech; Model 76; Duchess; Inadvertent Parking Brake Activation; ATA 3242

The submitter discovered the parking brake may be inadvertently activated by the pilot's foot.

During engine-out training, if the pilot fully depresses the right rudder pedal, and the pilot's foot is large or placed high on the pedal, it may interfere with the parking brake actuating arm. This may lead to unintentionally setting the parking brake during flight. If this occurs and goes undetected, the main landing gear tires may fail during landing which may result in loss of directional control.

The submitter suggested the manufacturer relocate the parking brake valve and actuator arm to eliminate the possibility of inadvertent parking brake activation. All pilots should be aware of these circumstances and ensure the parking brake is fully released prior to landing.

Part total time not applicable.

Beech; Model C90A; King Air; Engine Exhaust System Crack; ATA 7800

During an engine inspection, the technician discovered a crack in the exhaust system.

The right engine inboard exhaust stack (P/N 109-950000-1) displayed a crack adjacent to a weld at the nacelle inlet deice tube attachment point. The crack was approximately 1.5 inches long. The submitter stated this is the sixth occurrence of this

defect on the same aircraft. The technician discussed the problem with the manufacturer, and a service bulletin release is pending.

Part total time-21 hours.

Beech; Model C90; King Air; Cabin Door Defect; ATA 5210

During a passenger-carrying flight, the flightcrew heard a loud bang followed by loss of cabin pressure. The flightcrew followed the appropriate emergency procedures and made a safe landing.

An inspection by a maintenance technician revealed the clevis pin (P/N 131323-2C15), used as the pivot for the upper cabin door (P/N 100-430075-601) latch hook, broke. Phase-3 inspection requirements include the inspection of this item. At the time of this incident, the aircraft was 5 months away from a Phase-3 inspection.

The submitter suggested that all maintenance entities give special attention to the cabin door latching mechanism during all inspections.

Part total time-7,192 hours.

Beech; Model 99A; Airliner; Main Landing Gear Cracks; ATA 3210

While inspecting the landing gear, the technician found several cracks in the main gear scissors assembly.

The cracks appeared in the right main gear scissors (P/N 50-810323-7) near the machined surfaces where the two sections connect. The submitter determined that the cracks were due to the torque knee attaching hardware being loose. An inspection of the left main gear scissors assembly did not reveal any cracks. However, the inspection did reveal loose hardware and excessive wear on the bushing. This area deserves close attention during inspections and maintenance.

Part total time not reported.

Beech; Model 99; Airliner; Engine Compartment Fuel Leak; ATA 7320

During a postflight inspection, the inspector noticed fuel leaking from the left lower engine cowling.

After opening the engine cowling, the technician discovered the fuel originated from a high-pressure stainless steel fuel line that runs from the fuel control unit to the start flow control unit.

The fuel line had a small crack adjacent to a ferrule at one end of the tubing. The submitter speculated this defect may be the result of improperly bending (hand forming) the line to facilitate installation or a defect caused during manufacture and assembly of the line.

Part total time not reported.

Beech; Model 2000; Starship; Defective Engine Fire Extinguisher Security; ATA 2620

During a scheduled inspection, the inspector found the left and right engine nacelle fire extinguisher bottle support assemblies (mounting brackets) (P/N 122-570002-5) cracked.

The submitter reported finding this defect on several like aircraft. According to the submitter, the replacement mounting brackets, supplied by the manufacturer, fail after a short time in service. The submitting repair station uses FAA, Designated Engineering Representative (DER) approval for manufacturing a heavier replacement mounting bracket to correct this situation. He suggested that all maintenance personnel check the mounting brackets for cracks at every opportunity.

Part total time not reported.

CESSNA**Cessna; Models as Indicated Below; Seat Rail Replacement; ATA 2510**

The following article is printed as it was received from the FAA, Aircraft Certification Office, (ACE-118W) in Wichita, Kansas.

Aircraft Affected:

Cessna Models 150, 152, 170, 172, 172RG, 175, 177, 177RG, 180, 182, R185, T182, 185, 188, 190, 195, 206, P206, 210, P210, 210-5, T303, 336, and 337 series airplanes.

Specific serial number applicability is listed in Airworthiness Directive (AD) 87-20-03 Revision 2.

Introduction:

This special alert is to advise all owners and operators of the necessity to install all required fasteners when seat rails are being replaced.

Background:

There are various seat rails, identified by part number, which are required to be installed in airplanes affected by AD 87-20-03, Revision 2. Many of these rails are manufactured with pilot holes only and do not contain all holes required for installation of the seat rail in the airplane. It is, therefore, necessary for the installer to assure that there are sufficient holes to accommodate all required fasteners.

Recommendations:

- a. When replacing a seat rail, note the number and location of all fastener holes on the seat rail being removed.
- b. Match these holes against the holes in the replacement seat rail. If the replacement seat rail does not have all of the same holes at the same locations, they should be drilled.
- c. Since it is difficult to install many of the rivets required to attach the seat rail, it is permissible to substitute Number 6

structural screws, such as MS35206-XXX or AN520, with lock nuts, provided the holes are ream fit and spot-faced.

For Further Information Contact:

Federal Aviation Administration, Wichita Aircraft Certification Office, Eual M. Conditt, Senior Engineer, Airframe and Services, 1801 Airport Road, Room 100, Wichita, Kansas, 67209, telephone: (316) 946-4128, fax: (316) 946-4407.

Cessna; Model 172L; Skyhawk; Defective Fuel Selector Valve; ATA 2823

Maintenance personnel installed a new fuel selector valve (P/N 0513123-200) in accordance with the manufacturer's technical data and conducted extensive leak and operational tests.

The tests included fuel flow to the carburetor at each of the three selector valve positions. The technician conducted the test with 8 gallons of fuel in each of the fuel tanks. He also conducted an engine operational test for 5 minutes in each of the three selector valve positions. Since all tests proved satisfactory, he approved the aircraft for return to service.

After approximately 2.5 hours of flight time, the pilot experienced engine failure caused by fuel starvation. He was able to land safely at a nearby airport.

A technician investigated and discovered the selector valve was not allowing fuel flow from the left tank with the valve in the "both" positions. Fuel flow was normal in all other selector valve positions.

The fuel starvation incident occurred when the right fuel tank was empty with the fuel selector being in the "both" positions. The fuel remaining in the left tank could not flow past the selector valve.

All maintenance personnel should be aware of these circumstances and conduct tests which ensure fuel flow from both tanks when the selector valve is in the "both" positions.

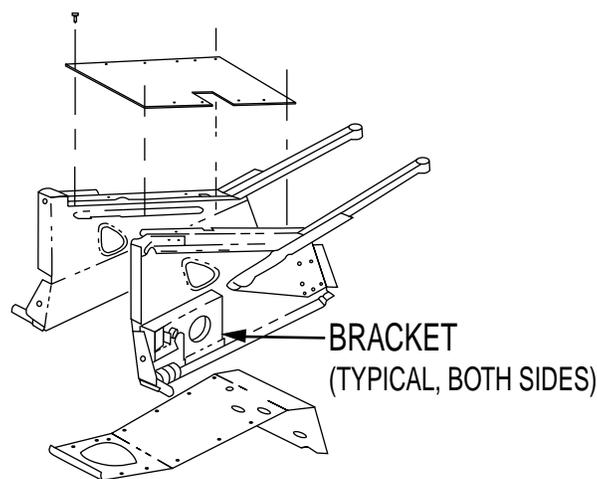
Part total time-2.5 hours.

Cessna; Model R182; Skylane RG; Defective Rudder Pedal Security; ATA 2720

A technician submitted reports on five different aircraft with identical defects. All of these aircraft had approximately 10,000 hours operating time. The FAA Service Difficulty Program data base contains one additional report that is similar.

During an annual inspection, he discovered cracks in the inboard rudder pedal bar bearing block brackets. In order to inspect the area, he moved the rudder pedals and noticed the bearing blocks flexed. After he cleaned the area, he discovered the cracks on the left and right bracket assemblies (P/N's 0713628-5 and -6). (Refer to the following illustration.) The submitter suggested that all maintenance personnel clean the area well and conduct a diligent inspection of the brackets during scheduled inspections.

Part total time as indicated above.



Cessna; Model 182N; Skylane; Defective Engine Mount Installation; ATA 7120

While conducting an annual inspection, the technician discovered that all four engine mount attachments were installed improperly.

The engine mount safety locks (P/N 0851559) were missing from all of the attachment points. Evidently, the previous installer used an extra washer on each mount to take up the extra bolt length and discarded the locks. Consulting the appropriate technical data would have eliminated this defect and the hazardous condition it created.

Part total time not reported.

Cessna; Model 182S; Skylane; Autopilot Roll Servo Defect; ATA 2215

While complying with Bendix/King Service Bulletin (SB) KS271C-5, the maintenance technician discovered problems with the autopilot roll servo assembly unrelated to the SB.

The roll servo idler gear attachment nut backed off the threads. The output gear bearings were contaminated with dirt and metal shavings from an unknown origin. The submitter stated, "Failure could cause the servo to remain engaged when the autopilot is disengaged." All maintenance personnel should check for these conditions when complying with SB KS271C-5.

Part total time-143 hours.

Cessna; Model 310C; In-Flight Engine Failure; ATA 7300

During a critical stage of flight, the aircraft experienced right engine failure. All efforts to restart the right engine failed and an off-airport accident occurred.

During an investigation, the inspector discovered the right engine mixture control cable conduit (P/N 0850250-189) broken. Due to the broken conduit, the mixture control cable flexed when the pilot exerted pressure on it instead of moving the mixture control on

the fuel control unit. When the conduit failed, the engine mixture control went to "idle cut-off," and the pilot could not move it from that position.

The available evidence indicated the conduit failed due to metal fatigue caused by lack of adequate support.

Part total time not reported.

Cessna; Model 337G; Skymaster; Airframe Corrosion; ATA 5330

During a 100-hour inspection, the technician discovered severe corrosion on the fuselage skin.

The technician removed a piece of loose soundproofing or dampening material from inside the fuselage skin and found a large area of severe corrosion just below the left aft side window. He speculated the damage occurred due to window leakage, and the accumulation and retention of moisture, as well as other contaminants. The dampening material held these materials in contact with the skin.

Since this material is used extensively in the cabin area, technicians should be suspect of any anomaly found during inspections or maintenance.

Part total time not reported.

Cessna; Model 340A; Electrical Power Failure; ATA 2400

During flight, the pilot experienced avionics electrical power system failure. The flight was being conducted under visual flight rules (VFR), and the pilot landed the aircraft safely.

A technician investigated the problem and found the avionics bus bar, located behind the circuit breaker panel, had worn through a chafe strip and contacted the aircraft structure. The avionics bus bar was .25-inch longer than the adjacent bus bars which caused it to bear hard on the chafe strip installed between it and the structure. As a corrective action, the technician trimmed the

bus bar to provide additional clearance and installed a new chafe strip.

Technicians should exercise extreme caution when installing electrical system components to ensure the components are properly insulated and adequate clearance is maintained.

Part total time-2,700 hours.

Cessna; Model 421C; Golden Eagle; Split Flap; ATA 2750

During a landing approach, the pilot selected the wing flaps to the “full down” position, and the aircraft entered a steep right bank. The pilot regained and maintained control by using full left aileron deflection and engine power, and landed the aircraft safely.

During an investigation, the technician discovered the right flap down cable (P/N 5000008-62) frayed and broken. The cable failed approximately 2.5 inches inboard of the location where the flap preselect system cable clamp was installed. When the cable broke, the right flap went to the “retracted” position and pulled the preselect system and flap indicator to the full “up” position rendering the flap selector inoperative.

The submitter suggested the manufacturer make design changes to the wing flap system to prevent this type of occurrence. Although access to the location of the cable failure is difficult, using all means and effort necessary for a diligent inspection is recommended.

Part total time-7,700 hours.

Cessna; Model 550; Citation; Elevator Trim Failure; ATA 2731

The pilot reported that during a landing approach he noticed the elevator electric trim was unresponsive. The manual elevator trim wheel turned freely with no response, and the elevator control was heavy and hard to move. The crew made a safe landing and turned the aircraft over to maintenance personnel.

During an investigation, the technician found a control cable lying loose in the bottom of the aircraft. He also found the elevator trim system cable forward attachment chain master link (P/N C419175) dislodged and in the bottom of the aircraft along with the attaching hardware. The submitter did not offer a cause for the chain master link failure.

Part total time-225 hours.

LAKE

Lake; Model LA-250; Elevator Horn Cracks; ATA 2730

While completing an annual inspection, the technician found the elevator horn attachment brackets broken.

The breaks appeared in the upper ears of both attachment brackets (P/N 3-2255-29). The submitter believes metal fatigue caused the defects. He replaced the elevator horn attachment brackets. He suggested closely checking this area during scheduled inspections and maintenance.

Part total time-1,900 hours.

LOCKHEED

Lockheed; Model 1329-25; Jetstar II; Vertical Stabilizer Structural Defects; ATA 5530

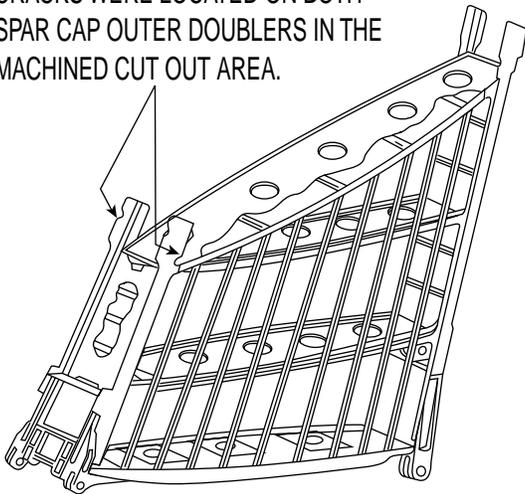
During a scheduled inspection, the technician found cracks in the vertical stabilizer front spar cap doublers.

The cracks appeared on both the left and right outer spar cap doublers. (Refer to the following illustration.) The submitter reported this is the fourth instance of this defect he found in the past month. He recommended using an eddy-current inspection technique to inspect the vertical stabilizer front spar cap doublers during each applicable scheduled inspection. He also recommended this area immediately receive a one-time inspection on all Models 1329-23 and 1329-25 series aircraft.

The FAA published two Airworthiness Directives (AD) 84-23-01 and 91-11-13 which deal with a similar subject on the rear spar. The submitter suggested that maintenance personnel inspect the front spar cap at the same time they comply with these ADs. The manufacturer does not stock replacement doublers; however, authorized repair procedures, on a case-by-case basis, include fabrication of new doublers.

Part total time-7,487 hours.

CRACKS WERE LOCATED ON BOTH SPAR CAP OUTER DOUBLERS IN THE MACHINED CUT OUT AREA.



PIPER

Piper; Model PA 23-250; Aztec; Main Landing Gear Retraction Defect; ATA 3230

While conducting a landing gear retraction test during an annual inspection, the technician discovered the left main landing gear would not fully retract into the wheel well.

A gap of approximately 1.5 inches remained between the gear doors at the completion of the retraction cycle. The technician investigated and found a section of the

actuating cylinder (P/N 35030-02) rod broken out of the threaded end and the end cap severely damaged.

The submitter speculated an improper adjustment of the cylinder during previous maintenance caused the end cap damage. He suggested close attention to detail would prevent this type of defect.

Part total time not reported.

Piper; Model PA 28-140; Cherokee; Main Landing Gear Strut Cracks; ATA 3213

After a flight, the student pilot reported experiencing shimmy and vibration during the landing rollout.

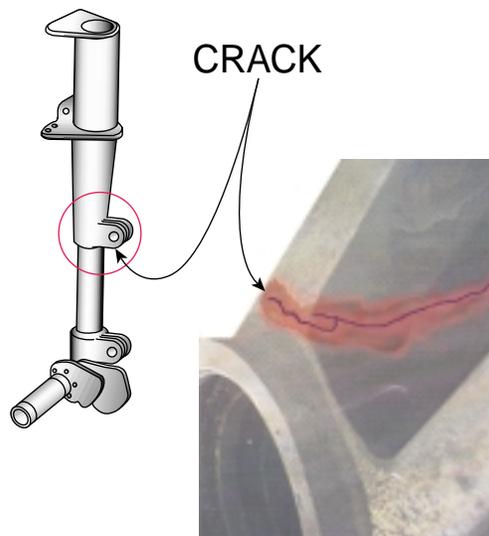
A maintenance technician investigated and found the left main gear strut (P/N 65319-04) attachment ears for the upper torque link broken. (Refer to the following illustration.) The broken ears left the wheel assembly free to rotate, restrained only by the brake line.

The submitter speculated side loads imposed on the gear during landing might have caused this damage. Also, age, metal fatigue, and improper landing techniques may be contributing factors.

The FAA Service Difficulty Program data base contains 11 additional reports concerning similar failures. Piper Service Letter 760, dated November 12, 1975, deals with this subject and gives inspection procedures. Although the "dash number" following the strut part number varies, the basic part design, with the upper torque link attachment ears, is the same for models PA28-140, -151, -161, -181, and PA32 aircraft. Most of these defects occurred on aircraft with operating time equal to, or greater than, this aircraft.

All maintenance personnel should be aware of these findings and exercise due diligence during maintenance and inspections.

Part total time-7,354 hours.



Piper; Model PA 28-181; Archer; Defective Starter Armature; ATA 8011

This submitter reported finding six Electrosystem starter armatures (P/N MHB2399S) with the drive end spline worn or stripped away.

The metal debris produced by the spline removal, contaminates the gear case causing damage to the roller bearings. The submitter reported the drive gear did not display damage, and the shear pin remained intact in all cases.

It is the submitter's opinion that the armature spline area metal is too soft for this application. He speculated the armature drive end spline area may not be properly heat-treated or the shear pin may be too hard.

Part total time-839 hours.

Piper; Model PA 28R-201; Arrow; Main Landing Gear Crack; ATA 3213

During a scheduled inspection, the technician discovered a hydraulic leak in the left main landing gear area.

After further investigation, he discovered a crack in the landing gear trunnion (P/N 67926-16) at the point where the web joins the trunnion tube. This is a typical area for crack development, especially on high-time components used in a training environment.

Part total time-9,165 hours.

Piper; Model PA 28R-201; Arrow; Defective Wing Attachment Bolts; ATA 5710

As part of a wing repair process, the submitter removed the wing attachment bolts.

All the bolts (P/N AN176-X) displayed severe corrosion and required replacement. The submitter stated the bolts appeared to be in good condition. However, he discovered the damage when he removed the bolts.

This was the third occurrence of this defect found by the submitter in the past 6 months. He cautioned all maintenance personnel to give the wing attachment bolts special attention at every opportunity. This defect presents the possibility of in-flight wing separation and demands close scrutiny.

Part total time-3,273 hours.

Piper; Model PA 31-325; Navajo; Cabin Fuel Odor; ATA 2820

After a flight, the pilot reported a strong fuel odor in the aircraft cabin.

A maintenance technician investigated and found a cracked reducer (P/N 484-297) on the fuel cross-feed line drain. Fuel seeped through the crack, and he found a puddle beneath the assembly.

The submitter did not give a cause for this defect. Fuel fumes in an aircraft cabin, or other enclosed areas, create a very hazardous condition and can lead to explosion and/or fire. Maintenance personnel should be ever vigilant for fuel leakage and eliminate the leak source as quickly as possible.

Part total time not reported.

Piper; Model PA 31-350; Chieftain; Numerous Magneto Problems; ATA 7414

This aircraft is equipped with Textron Lycoming Model TIO-540 and LTIO-540 engines using the Teledyne Continental Motors (TCM)/Bendix dual magneto system.

According to the aircraft maintenance records, this aircraft experienced numerous and recurring problems which included “unusual drop-off, completely dead magneto, hard engine starting, and the engine failing to start.” The records attributed all these defects to faulty capacitors. The technician contacted TCM concerning the repetitive nature of these problems. TCM representatives informed him that TCM Service Bulletin (SB) 662A listed capacitors coded prior to 9946 which should have been removed from service and replaced with newer code-number capacitors. After complying with SB 662A, engine operation has been satisfactory for this operator.

Part total time not reported.

Piper; Model PA 31-350; Chieftain; Engine Starter Failure; ATA 8011

The pilot reported that efforts to start the right engine failed.

A maintenance technician investigated and found both of the field brush leads broken. The available evidence indicated one of the brush leads separated due to electrical arcing. This placed the entire starting load on the other brush lead, causing it to fail at the lead attachment point. Otherwise, the starter appeared to be in good condition, and there was very little brush wear. The submitter speculated “a poorly-constructed brush/lead assembly” caused arcing and resulted in the original failure.

Part total time-1,071 hours.

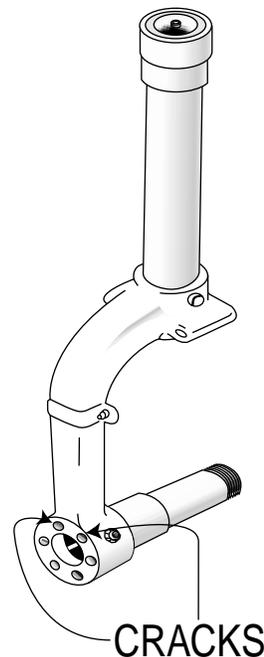
Piper; Model PA 32R-301; Saratoga; Main Landing Gear Cracks; ATA 3213

During an annual inspection, a technician found cracks in both of the main landing gear strut assemblies.

Using a magnifying glass, the technician discovered cracks adjacent to the two top axle bolt holes on both the left and right strut assemblies. (Refer to the following illustration.) These six holes attach the wheel brake anchor plate to the strut. The metal is thinnest at this location. The aircraft maintenance records did not include any damage history or hard landings. The submitter stated this defect resulted from age and metal fatigue.

The FAA Service Difficulty Reporting program data base contains five other similar defects.

Part total time-3,351 hours.



Piper; Model PA 39; Twin Comanche; Wing Structural Damage; ATA 5711

The pilot reported experiencing an unusual vibration during flight. He also noticed the right wing tip tank trailing edge “fluttering” approximately 1 inch. The pilot reduced power and made a safe, precautionary landing.

During an inspection, a technician discovered a crack extending through the lower spar cap and approximately 1 inch up into the face of the aft wing spar at wing station (WS) 132. Several solid rivets, originally used to attach the upper wing skin to the rib and aft spar at WS 132, had been replaced with “cherry type” rivets during previous maintenance.

The technician reviewed the aircraft maintenance records which stated the aircraft experienced a hard landing 2 years prior. At that time, a technician made repairs which included replacing the right main landing gear and repair of the aft tail bulkhead. He speculated the previous technicians repaired the right wing area at the same time but failed to record it in the maintenance records.

The submitter obtained Designated Engineering Representative (DER) approved data to repair the damage. He suggested that transferring or using fuel from the tip tanks prior to landing may help prevent unnecessary stress on the wing structure during landing.

Aircraft total time-3,376 hours.

SHORTS**Shorts; Model SD3-30; Burning Odor in the Cockpit; ATA 3060**

The flightcrew noticed a burning odor in the cockpit during flight. The pilot followed emergency procedures and made a safe, precautionary landing.

A technician discovered the right propeller heat deicer system timer (P/N 3E1150-10) and the associated relay displayed heat damaged. He speculated the heat damage caused the burning odor in the cockpit. He found the

propeller deicer system circuit breaker open. After changing these components and resetting the circuit breaker, the system operated properly during an operational test.

The submitter did not offer the cause of this defect or a recommendation to prevent a recurrence.

Part total time not reported.

HELICOPTERS**BELL****Bell; Model 206-B3; Jet Ranger; Tail Boom Bulkhead Crack; ATA 5500**

During a routine inspection, the technician discovered a crack in the tail boom structure.

The hairline crack appeared in the tail boom aft bulkhead (P/N 206-030-4461F) skin. The tail rotor gearbox is mounted at this location and transmits vibrations to the structure. The submitter believes excessive vibration caused this defect. He suggested that technicians balance and track the tail rotor assembly at more frequent intervals. He also suggested inspecting the bulkhead area and the tail rotor gearbox casting for damage at every opportunity.

The FAA Service Difficulty Reporting program data base contains four additional similar reports.

Part total time-7,527 hours.

EUROCOPTER**Eurocopter; Model EC-120B; Colibri; In-Flight Door Separation; ATA 5210**

Prior to a photography flight, the pilot stowed the sliding right door and locked it in the open position.

During the flight, the door separated from the aircraft. The airstream pulled the door out of

the lower forward rail attachment first, and then the upper forward attachment. For a short time, the door remained attached to the upper and lower aft hinge points and impacted the airframe structure aft of the door several times before separating from the aircraft.

The submitter recommended close tolerance be maintained between the door frame rails and the rollers.

Part total time-862 hours.

Eurocopter; Model AS350BA; Ecureuil; Tail Rotor Spider Defect; ATA 6500

During a maintenance inspection after the last flight of the day, the technician discovered a castellated nut on the tail rotor spider assembly (P/N 350A33.2004.06) lost torque.

The castellated nut secures the rotating and nonrotating assemblies of the spider assembly. The technician removed and replaced the entire spider assembly. He could not determine a cause for the nut losing torque. He suggested the manufacturer increase the torque value for installation of the castellated nut.

Part total time-187 hours.

Eurocopter; Model AS350B2; Ecureuil; Hydraulic System Failure; ATA 2913

During flight, the pilot experienced a total loss of hydraulic system pressure and made a safe precautionary landing.

A technician discovered the female splines at the hydraulic drive coupling and the male splines at the hydraulic pump failed due to premature wear.

The submitter believes the spline engagement for this application is insufficient for the drive demand. The appropriate technical data requires inspection of this assembly at 500-hour intervals or 18-month intervals. He suggested reducing the inspection interval

100-hours. He also suggested checking the area for the accumulation of wear and collecting the data for trend analysis tracking.

Part total time-370 hours.

HILLER

Hiller; Model UH-12E; Main Rotor Blade Skin Security; ATA 6210

During a scheduled inspection, the technician discovered that a main rotor blade (P/N 53200-03) skin was debonded. After removing the blade, he returned it to the repair shop.

During an initial inspection, the inspector determined compliance with the bonding process was not adequately accomplished. It appeared the cleaning and metal preparation was not sufficient to attain a secure bond.

The submitter recommended all operators review their bonding procedures and ensure the metal preparation process is adequate and in accordance with the appropriate technical data.

Part total time-246 hours.

AMATEUR, EXPERIMENTAL, AND SPORT AIRCRAFT

FISHER

Fisher; Celebrity; Propeller Crack; ATA 6114

This aircraft is equipped with a Teledyne Continental, Model C-90 engine and a McCauley, Model 1B90 propeller.

During an annual condition inspection, the technician noticed a suspect area. Using a dye-penetrant inspection procedure, he found

a crack in the propeller hub. The crack radiated away from the center pilot hole toward one of the mounting bolt holes.

The submitter gave no cause or cure for this defect.

Part total time not reported.

RAND ROBINSON

Rand Robinson; Model KR-2; Engine Failure Accident; ATA 7320

This aircraft is equipped with a Volkswagon engine. Fuel starvation caused an engine failure which resulted in an aircraft accident.

The accident investigator traced the fuel starvation and engine malfunction to the main mixture control adjustment needle locking device. The broken locking device allowed the mixture control to migrate to the rich position which caused increased fuel consumption, poor engine operation, and eventually engine failure.

The submitter recommended modifying the locknut by adding an additional safety, replacing the (POSA carburetor) mixture control with a more reliable component.

Part total time not reported.

TITAN

Titan; Tornado II; Engine Failure; ATA 2840

During a flight, the pilot experienced a complete engine failure. The loss of engine power resulted in an off-airport landing and substantial damage to the aircraft.

During an accident investigation, the inspector found the engine failed due to fuel starvation even though adequate fuel remained in the tank. Further investigation revealed a fuel quantity sending unit in the tank was installed using a silicone sealing material. The silicone material dissolved and dislodged when it was exposed to fuel, and the

residue clogged the fuel filter. Close attention and proper use of fuel system materials may have prevented this accident.

Part total time not reported.

VAN'S

Van's Aircraft; Models RV-3, RV-4, RV-6, RV-6A, RV-8, and RV-8A; Improper Fuel Pick-Up Positioning; ATA 2820

The following article is printed as it was received from Mr. Steve McCreary of the National Transportation Safety Board (NTSB).

This article concerns aircraft with wing tanks that have fixed (non-flop) fuel pick-up tubes. The NTSB investigated an accident involving the forced landing of a Van's RV-8, which occurred immediately after takeoff.

The investigation determined that the aircraft had approximately 10 gallons of fuel in the right wing (21.0 gallon capacity) fuel tank, which had been selected for takeoff. A post-crash examination revealed that the fuel pick-up tube in the right tank was crimped just outboard of its threaded fitting, and the tube had rotated more than 180 degrees. This resulted in the pick-up intake end of the pick-up tube being positioned midway between the top and bottom of the tank (Refer to the following illustration.) The pilot/builder reported that several weeks previous to the event, he had accomplished maintenance on the right fuel tank and had tightened the nut, which secured the fuel pick-up tube 90-degree elbow fitting to the right fuel tank access plate.

Examination of the aircraft design drawings for the left tank (reversed for the right tank) revealed that the nut which secured the 90-degree elbow fitting tight against the access plate, would be tightened by rotating the nut clockwise when looking outboard. With no opposing force on the elbow, it would be possible to

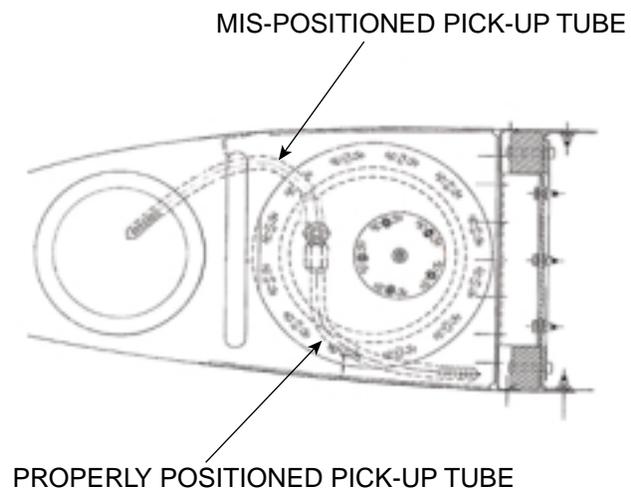
rotate the elbow and thus inadvertently deform and reposition the fuel pickup tube within the tank while tightening the nut. This condition would not be recognized, unless the access panel was removed and the pick-up tube examined visually after the tightening process.

The original design drawings for the RV-8 fuel system were dated 9/25/96. A later version (R6), dated 8/99, shows a modification which addresses the installation of an "Anti-rotation bracket on the fuel line." The design drawings issued on or after September 1999, contained the details for the anti-rotation bracket design and installation. The registration date of the accident aircraft was 6/11/98, and the aircraft underwent an annual in July of 1999. The anti-rotation bracket was not installed on the aircraft's right fuel tank access panel.

The aircraft manufacturer, Van's Aircraft, is notifying all RV series aircraft owners through their website, and a newsletter article which will be issued in August 2000, describing the details of the anti-rotation bracket. Installation of the bracket is applicable to all RV aircraft with wing tanks that have fixed fuel pick-up tubes (not those with "flop-tube" pick-ups). For aircraft completed and already flying, no action is required until and unless the fuel line fittings at the tank are tightened, loosened, or removed. Any time the fuel line fittings at the fuel tank are tightened loosened, or removed, the fuel pick-up tube installation should be modified in accordance with the details provided in the Newsletter.

Additional details may be obtained from the kit-plane producer: Van's Aircraft, P.O. Box 160, North Plains, OR 97133, telephone: (503) 647-5117, fax (503) 647-2206. E-mail address: <http://www.vansaircraft.com>

Part total time-231 hours.



ACCESSORIES

CARBURETOR FLOATS

A carburetor overhaul shop reported finding several leaking plastic (Delrin) carburetor floats. The floats (P/N 30800) have three chambers and are used in Precision, Model HA6 carburetors.

Fuel leaking from the carburetor throat is common with reports accompanying these units. Most of the problems involved fuel filling the float chamber furthest from the pivot point, causing the float to sink. When the float sinks, the bowl overfills and fuel exits at the point of least resistance. The excessive fuel in the carburetor causes a fire hazard and results in an excessively rich fuel/air mixture being delivered to the engine. This will produce poor engine operation and, in some cases, engine failure.

The FAA Service Difficulty Reporting program data base contains two additional similar reports. The submitter believes the integrity of the adhesive used to join the float halves is compromised by exposure to aviation fuel (100LL). He suggested the manufacturer

evaluate the bonding process for the float halves and revise their procedures to eliminate this defect.

Part total time not reported.

AIR NOTES

AGE

It is true that all things created by man have a natural tendency to revert to their natural state!

The critical factors in this process are time and the environment to which they are exposed. I know this hypothesis to be true when I observe the deteriorating state of my body. With time (age), eyesight dims, joints ache, energy diminishes, hearing fades, and basically things just don't seem to work as they once did. (Hopefully, one attribute of increased age is a proportional increase in knowledge.)

Likewise, the products of man's creation tend to digress from their created state to the natural state of the raw materials of which they are composed.

As recent events have proven, aviation products are not excluded from the aging process. With many aircraft over 70 years old still operating, the effects of age are very evident. The passing of time is directly proportional to the state of deterioration with the variant of environmental exposure affecting the rate. In addition to time and environment, the frequency of operation induces wear and stress which affect the rate of decay. As with environment, operational frequency or use is a variant particular to each individual aircraft. This brings to mind the phenomenon of an aircraft that sits in the hangar and breaks! Some have said, with tongue in cheek, that each aircraft has a unique character and personality and when left unattended for long periods of time

they become depressed, despondent, and "break" for no apparent reason. As we attempt to maintain older aircraft in an airworthy condition, the challenges become increasingly difficult and costly; requiring more diligence, time, and attention.

The deterioration (corrosion) of metal aircraft parts is probably the most detrimental factor related to the aging process. However, fabric (external covering and interior upholstery), wiring, rubber products, and even aviation fluids will decompose over time. Exposure to the environment, harshness of environmental conditions, and the length of exposure time are all factors that affect the rate of deterioration. We can control the exposure of our aircraft to the environment by keeping them in a climate-controlled hangar. We can even use preservatives on the various aircraft components to delay the effects of time. However, we cannot always control the harshness of environmental conditions during operation of the aircraft. The value of enjoyment and use of our aircraft must be weighed against the desire to stop the deteriorating effects of time. This might be compared to not eating a cake because we want to keep it!

However, if we subjected our aircraft to all known precautions and preventive measures, we can only delay, we cannot prevent, the deteriorating effects of time.

The underlying message here is that the rate of required maintenance is directly proportional to the age of the aircraft.

ELECTRONIC VERSION OF THE FAA FORM 8010-4, MALFUNCTION OR DEFECT REPORT

One of the recent improvements to the AFS-600 Internet web site is the inclusion of FAA Form 8010-4, Malfunction or Defect Report. This web site is still under

construction and further changes will be made; however, the site is now active, usable, and contains a great deal of information.

Various electronic versions of this form have been used in the past; however, this new electronic version is more user friendly and replaces all other versions. You can complete the form online and submit the information electronically. The form is used for all aircraft except certificated air carriers who are provided a different electronic form. The Internet address is:
<<http://av-info.faa.gov/isdr/>>.

When the page opens, select "SDR Submissions Forms" and, when complete, use the "Add Service Difficulty Report" button at the top left to send the form. Many of you have inquired about this service. It is now available, and we encourage everyone to use this format when submitting aviation, service-related information.

SERVICE DIFFICULTY PROGRAM DATA AVAILABLE ON THE INTERNET

The FAA, Service Difficulty Reporting (SDR) Program is managed by the Aviation Data Systems Branch, AFS-620, located in Oklahoma City, Oklahoma. The information supplied to the FAA in the form of Malfunction or Defect Reports, Service Difficulty Reports, or by other means, is entered into the SDR data base. This information has been available to the public through individual written request. This method has provided the aviation public with an invaluable source of data for research or finding specific problems and trends.

The Service Difficulty Reporting Program relies on the support of the aviation public to maintain the high quality of data. AFS-620 has included the SDR data on an Internet web site,

which is now available to the public. Using the web site will expedite the availability of information. The Internet web site address is:

<http://av-info.faa.gov>

On this web site, select "Aircraft" along the top of the page, next select "Service Difficulty Reporting," and then select "Query SDR Data."

This web site is now active; however, it is still under development and improvements are being made. We ask for your patience, ideas, and suggestions. If you find the web site useful, let us know. Also, spread the word about the availability of information on the web site. To offer comments or suggestions, you may contact the web master or call Tom Marcotte at (405) 954-4391.

Please remember that the information contained in the SDR data base is only as good as the input we receive from the aviation public. Also, the data used in production of this publication is derived from the SDR data base. In that regard, we solicit and encourage your participation and input of information.

This publication, as well as many other publications, was previously included on the "FedWorld" internet site. The FedWorld site was terminated on April 15, 2000. The data previously listed there is presently being transferred to the "av-info" web site.

ADDRESS CHANGES

In the past, the Designee Standardization Branch (AFS-640) maintained the mailing list for this publication. Now, the Government Printing Office (GPO) sells this publication and maintains the mailing list; therefore, please send your address change to:

U.S. Government Printing Office
ATTN: SSOM, ALERT-2G
710 N. Capital Street N. W.
Washington, DC 20402

You may also send your address change to GPO via FAX at: (202) 512-2168. If you FAX your address change, please address it to the attention of: **SSOM, ALERT-2G**.

Whether you mail or FAX your address change, please include a copy of your old address label, and write your new address clearly.

SUBSCRIPTION FORM

Many of our readers voiced their concern when, due to a budget reduction, it was necessary to stop printing and distributing paper copies free of charge.

The Government Printing Office (GPO) agreed to print and distribute the Alerts. However, there will be a 1-year subscription charge for this service. The charge will be \$25 per year for domestic mailings and \$31.25 per year for foreign mailings. For your convenience, a subscription form is included in this publication.

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.

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You can access current and back issues of this publication from the internet at:
<http://afs600.faa.gov>

This web site also has view, search, E-Mail, and M or D submit functions.

AVIATION SERVICE DIFFICULTY REPORTS

The following are abbreviated reports submitted between May 3, 2000, and June 15, 2000, 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. The full SDR reports can be found on the internet at: <<http://www.fedworld.gov/pub/faa-asi/faa-asi.htm>>. This internet address takes you to the FAA ASI Library and the SDR reports are listed by weekly entries. This data base is maintained by 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

These reports contain raw data that has not been edited. 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.

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ACFT MODEL REMARKS	ENG MODEL	COMP MODEL	PARTNUMBER	PART LOCATION	FAA REPORT NO.	TSO
		MCAULY	FLYWEIGHT B20268	CRACKED GOV	05/22/2000 2000061700100	
RELEVANT CRACK INDICATION ON BASE OF FLYWEIGHT DISC. (X)	GARRTT TFE731*		DISK 30747522	OUT OF POST FIR TREE	06/01/2000 2000061700502	
NEW PART RECEIVED FROM HONEYWELL WITH DAMAGE IN POST FIR TREE AREA. NICK MORE THAN .001 INCH IN DEPTH ON FORWARD SIDE. LOT NUMBER 00P0130. (X)			ATTACH 3010610	CORRODED HORIZ STAB STRUT	05/15/2000 2000061700639	5253
INTERNAL CORROSION CAUSED FAILURE OF HORIZONTAL STABILIZER STRUT AT LOWER ATTACH FITTING. SUBMITTER RECOMMENDED LOWER ATTACH POINT DESIGNED SIMILAR TO UPPER FITTING AND LINSEED OIL APPLIED TO INSIDE OF STRUT. (X)			RELAY B3651M0250	FAILED AIRFRAME	05/03/2000 2000061700054	
DURING AIRFRAME INSPECTION, THE REVERSE CURRENT RELAY WAS REMOVED FOR INSPECTION AND RECERTIFICATION. THE RELAY, WHICH WAS FUNCTIONING NORMALLY WHEN REMOVED, WAS ROUTED TO A RATED REPAIR STATION FOR CHECK AND RECERTIFICATION. UPON RETURN FROM VENDOR, UNIT WAS RE-INSTALLED AND OPER CHKS PER MM. AFTER ELEC POWER APPLIED, EXTENSIVE DAMAGE OCCURRED TO WIRING FROM MAIN POWER JUNCTION BOX TO OVERHEAD PANEL START SWITCHES. REVERSE CURRENT RELAY, PN B3651M0-250, SN 2324, WAS DETERMINED DEFECTIVE AND REPLACED. RELAY REPLACED WITH NEW UNIT PN B3651M0-250 AND DAMAGED WIRING REPLACED FROM MAIN POWER JUNCTION BOX TO OVERHEAD PANEL START SWITCHES.						
SUBSEQUENT OPER			ENVELOPE	DETERIORATED FABRIC PNLS	06/05/2000 2000061700642	
BALWKS FIREFLY11						
EXCESSIVE AND PREMATURE DETERIORATION OF FABRIC PANELS AT GORE TAPE SEAM. GORE TAPE MATERIAL IS STIFF WITH SHARP EDGES AND CUTS INTO FABRIC PANELS WHERE PANELS OVERLAP TAPE APPROXIMATELY 1 INCH FROM PANEL EDGE. IT APPEARED THE AIRCRAFT MANUFACTURER HAD CHANGED THE GORE TAPE MATERIAL FROM A SOFTER MORE PLIABLE TAPE TO A STIFF TAPE WITH SHARP EDGES. (X)						
BBAVIA 8KCAB	LYC AEIO320E1B		MAGNETO 4150	CONTAMINATED	05/05/2000 2000061700326	
OWNER COMPLAINED OF ROUGH RUNNING/MISSING WHEN ENGINE HOT WHILE AT LOW POWER SETTINGS. RT MAG (4150) REMOVED. EXCESS PLAY IN DIST END BEARING (APPROX PLAY, .030 INCH) SN 9010274. LT MAG REMOVED (4151) SN 9010270. FOUND ENTIRE INTERIOR OF MAG CONTAMINATED BY GREASE FROM DRIVE END BEARING. THESE MAGS (4100 SERIES) ARE NOT REBUILDABLE AND SLICK SB RECOMMENDS REPLACEMENT AND TIS TO BE NOT IN EXCESS OF 800 HRS. ENGINE TT: 494 HRS SINCE NEW.						

BELL 206B		FRAME 206031308015	CRACKED FUSELAGE	03/02/2000 2000061700048	2378
FRAME CRACKED AT TOP RIGHT HAND POSITION, (1:00 O'CLOCK). (X)					
BELL 407	ALLSN 250C47B	BELL 407030801105	BEARING TAIL ROTOR G/B	FRETTED 2000061700677	04/15/2000 634
WHILE PERFORMING SCHEDULED LUBRICATION OF TAIL ROTOR HANGER BEARINGS, MECHANIC NOTICED METALLIC FRETTING DUST AROUND TAIL ROTOR GEARBOX MOUNTING AREA. FURTHER INVESTIGATION REVEALED MOVEMENT BETWEEN TAIL ROTOR GEARBOX AND TAILBOOM. THIS MALFUNCTION IS UNDER INVESTIGATION BY MANUFACTURER AND SUBMITTER IS AWAITING RESULTS OF THIS INVESTIGATION. (X)					
BNORM BN2A26	LYC O540E4C5	GEAR	BROKEN CRANKSHAFT	04/14/2000 2000061700401	6418 2106
ON CRUISE FLIGHT, LEFT ENGINE QUIT. PILOT LANDED, INVESTIGATION REVEALED BROKEN CRANKSHAFT GEAR. ENGINE RETIRED FROM SERVICE AND OVERHAULED ENGINE INSTALLED ON AIRCRAFT. (X)					
BOLKMS BK117A1	LYC LTS101650B1	BLADE	DAMAGED GAS PRODUCER	09/29/1999 2000061700049	2756
BLADES SUBJECTED TO CARBON BALL BLASTING. REPLACED WITH NEW UNIT, CORRECTED PROBLEM. (X)					
CESSNA 150L		PLATE 04120101	MISMANUFACTURE FUSELAGE	04/27/2000 2000052600211	
RECEIVED 2 EACH NEW PLATES, P/N 0412010-1. ONE PLATE HAS CASING LINE ACROSS FLAT SURFACE THROUGH TWO MOUNTING HOLES. THESE TWO PLATES ARE VERY IMPORTANT AND HARD TO INSPECT FOR CRACKS AFTER INSTALLATION. SUBMITTER STATED PART APPEARED TO HAVE BEEN BURNISHED. (X)					
CESSNA 172		SHIMMY 08424008	FAILED NOSE	04/22/2000 2000061700546	
AFTER LANDING, THE PIC WAS TAXIING TO THE RAMP WHEN THE NOSE WHEEL STARTED TO SHIMMY. HE APPLIED BRAKES AND THE AIRCRAFT MADE A HARD RIGHT TURN CAUSING THE AIRCRAFT TO TOP OVER TO THE LEFT/FRONT SIDE AND THE LEFT WING TIP AND PROPELLER MADE CONTACT WITH THE GROUND. INSPECTIONS OF THE AIRCRAFT REVEALED THE NOSE GEAR SHIMMY DAMPER AND BOTH STEERING RODS WERE BROKEN. (X)					
CESSNA 172N	LYC O320H2AD	LYC	ROCKER BOSS LW15318	FAILED 2000061700397	03/24/2000 85
VALVE ROCKER RETAINING STUD, PN 31-16, SHEARED FLUSH WITH THE CYL HEAD SURFACE. THIS CAUSED PARTS TO MOVE AROUND AT RANDOM IN THE HEAD. IT IS SUSPECTED THESE LOOSE PARTS INTERFERRED WITH OPER OF INTAKE VALVE MECHANISM CAUSING THE INTAKE PUSH ROD TO BEND, CREATING AN OIL LEAK AT THE PUSH ROD HOUSING. SAME PROBLEM OCCURRED 65.7 HRS EARLIER WITH NR 1 CYL, 19.2 HRS SINCE O/H. INSP OF ENG REVEALED EXH ROTATOR CAP DISLODGED, LAYING IN BOTTOM OF VALVE COVER ON NR 2 CYL. SUSPECTED EXH VALVES MAY BE STICKING IN OPEN POSITION ALLOWING ROTATOR CAP TO FALL OUT OF POSITION. THE EXCESSIVE CLEARANCE THEN CREATED BETWEEN ROCKER ARM AND EXH VALVE STEM COULD POSSIBLY CAUSE ABNORMAL STRESS TO ROCKER ARM					
CESSNA 172R		LIGHT	CHAFED WIRING BUNDLE	04/17/2000 2000061700038	953
PILOT REPORTED THE RADIO LIGHTS WERE FLICKERING WHILE ENGINE WAS RUNNING. UPON INSPECTION, WIRING BUNDLE THAT RUNS HORIZONTALLY ACROSS BOTTOM OF INSTRUMENT PANEL WAS FOUND CHAFING ON "RADIO INSTRUMENT LIGHT POTENTIOMETER" PN S2091-9 (REF: R10021 CESSNA WIRING DIAGRAM 33-10-01). THE CHAFING HAD DAMAGED AND CREATED BARE SPOTS ON THREE WIRES THAT WERE TRACED TO THE AVIONICS LIGHTING BUS" CREATING A SHORT AND CAUSING THE FLICKERING OF LIGHTS. THE WIRES WERE REPAIRED AND WIRING BUNDLE WAS SECURED AND REPOSITIONED IN A WAY TO PREVENT FURTHER CHAFING ON POTENTIOMETER. (X)					
CESSNA 172RG	CESSNA	BOLT AN743A	LOOSE ALTERNATOR	03/07/2000 2000061700194	
AIRCRAFT EXPERIENCED AN IN-FLIGHT ELECTRICAL FAILURE. UPON LANDING, ALTERNATOR WAS FOUND HANGING FROM THE BELT TENSION BRACKET. THE PRIMARY MOUNT BOLT, AN7-43A, WAS FOUND IN THE LOWER COWLING. WHEN THE MOUNT BOLT FELL OUT, THE COOLING FAN CONTACTED THE ENGINE CASE AND STOPPED THE ALTERNATOR. WITH THE ENGINE RUNNING AND THE ALTERNATOR LOCKED UP, THE ALTERNATOR BELT BURNED UP ON THE ALTERNATOR PULLEY. ALTERNATOR BELT HAD RECENTLY BEEN TIGHTENED. (X)					
CESSNA 172RG		BEARING J199744G16	LACK OF LUBE TRUNNION ASSY N/	04/02/2000 2000061700398	1770
AIRCRAFT WOULD NOT STEER ON TAKEOFF ROLL. BRAKES INEFFECTIVE TO TURN. DISASSEMBLED NOSE GEAR TRUNNION AND FOUND UPPER AND LOWER NACELLE BEARINGS RUSTED AND FROZEN. NO PROVISIONS FOR LUBRICATION AT THESE POINTS. AIRCRAFT MANUFACTURED 1982.					
CESSNA 177RG	CESSNA	BRACKET 17320312	CRACKED BEND RADIUS	06/13/2000 2000061700500	5000
THREE OF FOUR BALANCE WEIGHT SUPPORT BRACKETS WERE CRACKED ALONG THE BEND RADIUS. CRACKS WERE 1.25 INCHES, 1.50 INCHES, AND 1.75 INCHES ON EACH. THIS WAS NOTICED DURING STABILIZER BEARING REPLACEMENT WITH THE STABILIZER OFF THE AIRCRAFT. SUBMITTER RECOMMENDED FREQUENT INSPECTIONS. UNKNOWN CAUSE.					
CESSNA 182G	CONT O470R	MUFFLER 075016128	SEPARATED EXHAUST	03/29/2000 2000061700030	
DURING ANNUAL INSPECTION, THE LT INTERNAL BAFFLE WAS FOUND TO HAVE SEPARATED AND WAS PARTIALLY BLOCKING THE EXHAUST PORT IN THE MUFFLER. UPON REMOVAL, THE RT EXHAUST STACK WAS FOUND BADLY DETERIORATED WITH SEVERAL PIECES MISSING. ONLY MINOR EXHAUST LEAK WAS NOTED FROM UNDER CLAMP. TIME IN SERVICE OF THESE PARTS IS NOT KNOWN. (X)					

CESSNA 182P		FLAP TRACK 122101015	CRACKED LTWING	04/11/2000 2000061700190	
SHEARED RIVETS AT FORWARD LOWER END OF FLAP TRACK AND CRACKED FLAP TRACK MOUNTING ANGLE LOWER END FORWARD. WING FLAP WAS DAMAGED WHEN FLAPS WERE RETRACTED AND CONTACT WAS MADE WITH BRACKET IN FLAP WELL. POSSIBLE CAUSE, OPERATING FLAPS AT HIGHER THAN NORMAL SPEEDS. (X)					
CESSNA 182Q	CONT O470U	CYLINDER CLASS70	CRACKED NUMBER4	12/01/1999 2000061700399	29
THE ENGINE WAS STOPPED WITH 6 ENGINE COMPONENTS IN CERMIL CYLINDERS. AFTER 29 HOURS OF OPERATION, ENGINE RAN ROUGH AND WAS LOSING OIL. PILOT WAS ABLE TO FIND A PRIVATE STREET AND LANDED SAFELY. IT WAS DETERMINED THAT NR 4 CYLINDER WAS CRACKED .8750 INCH AROUND AND 5.4 INCHES DOWN LOOKING INTO THE					
CESSNA 207A		HOSE 1118	DAMAGED HYD SYSTEM	02/28/2000 2000061000149	
END OF HOSE WAS CUT OFF WITH A CUT-OFF WHEEL AND HOSE INTERIOR WAS FOUND COLLAPSED. ANOTHER 1.50 INCH WAS CUT OFF AND THE SAME CONDITION WAS FOUND. NOTE: SECTION OF HOSE SUBMITTED REPORT FORWARDED TO AEG NE-FSDO-07. (X)					
CESSNA 207A	CONT IO520*	CONT	SPARK PLUG FAILED NR 2 CYLINDER	03/10/2000 2000061700402	
PISTON TOP BEGAN TO DISINTEGRATE CAUSING SEVERAL SPARK PLUG FAILURES AND ENOUGH POWER LOSS TO CAUSE A FORCED LANDING. (X)					
CESSNA 310K		SPINNER 08550301719	CRACKED LEFT	04/13/2000 2000061700328	120
BRAND NEW CESSNA SPINNER DOME INSTALLED ON 4-30-99. LAST INSPECTION ANNUAL ON 7/16/99. APRIL 12, 2000, 100-HOUR INSPECTION REVEALS ONE INCH CRACK AT ONE MOST FORWARD SCREW. TWO SCREW HOLES ARE OVAL, NOT ROUND. TOTAL PART TIME PLUS/MINUS 120 HOURS. (X)					
CESSNA 421C	CESSNA	MOUNT 503403034	CRACKED LT ENGINE BAY	05/19/2000 2000061700193	5233
DURING ANNUAL INSPECTION, FOUND ONE INCH CRACK LEFT SIDE, AFT CORNER, LEFT ENGINE BAY, CANTED BULKHEAD TOP CAP. EXHAUST CORROSION IN THIS AREA WAS NOTED. PER AD 2000-01-16 EXHAUST SYSTEM, FOUND CRACKS ON EXHAUST COMPONENTS ALSO IN THIS AREA THAT MAY HAVE CONTRIBUTED TO THIS FAILURE. (X)					
CONAER LA4		MOUNT LA4180	CRACKED RT LOWER	04/14/2000 2000061700396	757
RIGHT LOWER ENGINE ATTACH POINT CRACKED TO RIGHT STRUT ATTACH POINT. (RADIALLY THROUGH MOUNT TUBE). DETECTED DURING ANNUAL INSPECTION VISUALLY AND VERIFIED BY DIE/PENETRANT. (X)					
DHAV DHC3	PWA R134059	CYLINDER	CRACKED NUMBER 7	05/04/2000 2000061700137	694
UPON CLIMB-OUT AFTER TAKEOFF, PILOT REPORTED ROUGH RUNNING ENGINE AND A LOSS OF POWER. PILOT STARTED TURNING BACK FOR AIRPORT AND DECIDED NOT ENOUGH POWER AND LANDED SAFELY IN A FARMER'S FIELD. DISCOVERED, NR 7 CYLINDER HEAD CRACKED FROM ONE SPARK PLUG HOLE ALL THE WAY TO THE OTHER. MAINTENANCE SUGGESTED ALONG WITH A VISUAL INSPECTION OF CYLINDER AND WHILE DOING A COMPRESSION CHECK, ALSO DO A SOAP AND WATER CHECK FOR CRACKS WHEN AIR IS PUT TO THE CYLINDER. (X)					
ENSTRM 280C		GEAR 28135000	BROKEN T/R GEARBOX	04/18/2000 2000052600052	
PILOT REPORTED NOT BEING ABLE TO SEE OIL LEVEL IN SIGHT GLASS. WHEN SIGHT GLASS REMOVED, A PIECE OF GEAR SET (TOOTH) ABOUT .4375 INCH LONG WAS FOUND INSIDE. ACFT HAD RETURNED FROM FLYING, AND THERE WAS NO VIBS OF NOISE. WEAR MARKS ON BROKEN PART GAVE APPEARANCE OF HAVING BEEN BROKEN FOR QUITE SOME TIME. INSP OF CHIP PLUG SHOWED NO METAL FLAKES OR CHIPS. SUBMITTER RECOMMENDED PULLING SIGHT GLASS AND LOOKING INSIDE TAIL GEARBOX AT EACH 100-HR OIL CHANGE/AD 90-01-06 INSPECTING IT FOR METAL FLAKES. (X)					
GROB G103ATWINII		PUSH ROD TUBE	FAILED 96 INCH OUT BD	05/10/2000 2000061700497	7775
LEFT WING AILERON PUSH ROD FOUND MISSING PLASTIC BEARING CAUSING RIVETS TO WEAR THROUGH PUSH ROD IN 2 PLACES. (X)					
HUGHES 369D	HUGHES 369D25100505	PINION GEAR 369D2512511	FAILED TRANSMISSION	02/22/2000 2000061700547	7931 1778
AIRCRAFT WAS FLYING WHEN A NOISE WAS HEARD. A PRECAUTIONARY LANDING WAS MADE. THE PROBLEM WAS A BROKEN GEAR IN THE MAIN TRANSMISSION. THE BROKEN PART WAS SENT TO THE MANUFACTURER FOR					
PIPER PA28160		SPAR 62015	CORRODED	06/15/2000 2000061700717	
FORWARD LOWER EDGE OF MAIN SPAR INBOARD BEHIND FUEL TANK BADLY CORRODED. DEFOLIATED BY ABOUT 50 PERCENT OF THICKNESS. MICE NESTS AND FECAL MATTER FOUND. SUBMITTER RECOMMENDED FUEL TANK REMOVAL FOR INSPECTION AT LEAST EVERY 5 YEARS. ALSO, INSTALL INSPECTION HOLE BEHIND TANKS FOR BETTER					
PIPER PA28161	LYC O320D3G	CYLINDER AEL6510241	CRACKED CYLINDER	04/07/2000 2000061700316	878
FOUND ZERO COMPRESSION ON ROUGH RUNNING ENGINE. FOUND CRACK FROM TOP SPARK PLUG AROUND OUTSIDE OF EXHAUST SEAT TO BOTTOM SPARK PLUG. (X)					
PIPER PA28181	NARCO	SENSOR	LEAKING	03/09/2000 2000061700321	1086

* STATIC SYSTEM LEAK GREATER THAN 100 FEET/MINUTE TRACED TO THIS UNIT. AR850 ONLY TWO YEARS IN SERVICE SINCE AIRCRAFT WAS NEW. AR850'S ARE NOT KNOWN TO BE FAULTY IN THIS MANNER. SUBMITTER STATED POSSIBLE NARCO FACTORY DEFECT IN ASSEMBLY OF SENSOR. THIRD FAILURE KNOWN TO SUBMITTER. (X)

PIPER PA31350	PIPER	BRACE 4204200	CRACKED INSIDERADIUS	05/23/2000 2000061700542	15290
DURING A DETAILED INSPECTION OF THE LANDING GEAR, THIS PART WAS FOUND TO HAVE A SMALL CRACK. THIS PART CONNECTS THE HYDRAULIC ACTUATOR TO THE FORWARD SIDE BRACE WHICH EXTENDS AND RETRACTS THE LANDING GEAR. THE WEIGHT OF THE GEAR AND THE SPEED OF MOVING THE GEAR UP AND DOWN EVENTUALLY FATIGUES PARTS. SUBMITTER STATED RECURRENCE CANNOT BE AVOIDED. (X)					
PIPER PA31350		CONTROLLER LW1009685	DEFECTIVE	05/24/2000 2000061700543	268
ON POST-FLIGHT INSPECTION, PILOT NOTICED OIL ON UNDER SIDE OF ENGINE COWLING AND NOTIFIED MAINTENANCE PERSONNEL. FURTHER INVESTIGATION REVEALED OIL DRIPPING FROM INDUCTION HOUSING DRAIN AND WAS DETERMINED TO BE COMING FROM THE SENSE LINE OUT OF THE DIFFERENTIAL PRESSURE CONTROLLER. (X)					
PIPER PA31P	LYC TIGO541E1A	LYC	BUSHING 75536	FAILED 05/09/2000 2000061700504	
PILOT EXPERIENCED ALTERNATOR FAILURE ON LT ENGINE IN-FLIGHT. UPON INSPECTION AFTER LANDING, FOUND LT SIDE OF AIRCRAFT COVER IN OIL AND LT ALTERNATOR LYING INSIDE OF COWLING. SUSPECT FAILURE OF GOVERNOR ADAPTER ASSY. BUSHING, PN 75539, CAUSED MIS-ALIGNMENT OF ALT DRIVESHAFT WHICH CAUSED COUPLING, PN LW-14464, TO FAIL IN SUCH A MANNER THAT CAUSED ALTERNATOR ADAPTER ASSY, PN LW-10259, TO FAIL. (X)					
PIPER PA32300		SKIN 6208700	CRACKED INBD/OTBDEDGES	04/26/2000 2000061700138	3372
LEFT WING-SKIN ASSY-TOP, INBOARD ROOT HAD NUMEROUS CRACKS AT BOTH ENDS OF BOTH STRINGERS AND FOUND ONE STRINGER INBOARD END CRACKED. THIS SKIN, AFTER REMOVAL, WAS FOUND HAVING NO REINFORCEMENT DOUBLERS AT THE ENDS OF BOTH STRINGERS. THE NEW SKIN HAS THE REINFORCEMENT DOUBLERS AND THIS SHOULD PREVENT CRACKING. SUBMITTER RECOMMENDED THAT ALL PIPERS WITH SAME WING DESIGN SHOULD BE CHECKED THAT THE DOUBLERS ARE INSTALLED. (X)					
PIPER PA34200	PIPER	SPRING 9652200	BROKEN NOSE GEAR ASSY	03/08/2000 2000061700638	5163
DURING A 50-HOUR OIL CHANGE, THE AIRCRAFT WAS JACKED UP IN ORDER TO CHANGE BOTH MLG TIRES. WHILE SPOT-CHECKING NLG TIRE, EXCESSIVE PLAY WAS FOUND IN THE NLG STEERING LINKAGE. CLOSER EXAMINATION REVEALED THE STEERING STOPS WERE DAMAGED AND THE NLG CENTERING SPRING WAS BROKEN. NORMALLY, THE CENTERING SPRING TRAVEL IS GREATER THAN THE STEERING STOPS. SUBMITTER SUSPECTED THE STEERING STOPS WERE DAMAGED DURING TOWING ALLOWING THE STEERING TRAVEL TO EXCEED THE STOPS AND BREAK THE					
PIPER PA44180T	LYC TO360E1A6	ALCO	SWITCH 37756003	SHORTED INTERNAL OF SW 05/14/2000 2000061700135	1350
LEFT ENGINE IN-FLIGHT ROUGH AND SMOKE. FOUND ELECTRICAL FUEL PRIMER SOLENOID ACTIVATED AND TIME MASTER SWITCH ON. PUSH TO PRIME SWITCH AT COCKPIT INSTRUMENT PANEL SHORTED TO A CONTINUOUS CLOSED CIRCUIT. REPLACED DEFECTIVE SWITCH WITH SAME PART NUMBER. PROBLEM REPAIRED. (X)					
PIPER PA46350P		CABLE	BINDING FLIGHT CONTROL	05/19/2000 2000061700139	18
PILOT NOTICED FLIGHT CONTROLS GETTING STIFF IN ROLL DIRECTION. INSPECTED ENTIRE SYSTEM FOR PROPER ROUTING OF CABLES AND CORRECT TENSION ON PRIMARILY AND AUTOPILOT CABLES. NO DISCREPANCY NOTED. WENT THROUGH ENTIRE SYSTEM AND LUBED ALL ROTATIONAL POINTS UNTIL CONTROLS FREED UP. POSSIBLY CAUSED BY LACK OF LUBRICATION OF FACTORY. AIRCRAFT ONLY HAD 18 HOURS SINCE NEW. (X)					
PIPER PA46350P	LYC TIO540AE2A		RIVET AN470	BROKEN BAFFLE 04/27/2000 2000061700559	118
DURING AN OIL CHANGE, TWO RIVET HEADS (AN470) WERE FOUND IN THE OIL SUCTION SCREEN. THE ENGINE WAS REMOVED AND THE OIL SUMP PULLED OFF. TWO RIVET HEADS WERE MISSING FROM THE OIL SUMP BAFFLE. THESE ARE MS20470AD4-4 RIVETS. THE HOLES ON THE DRIVEN SIDE APPEARED TO BE COUNTERSUNK OR EXCESSIVELY DEBURRED, WHICH GAVE LITTLE BEARING SURFACE FOR THE RIVET HEAD. LYCOMING SB489B REFERS TO THESE					
RAYTHN B100		MOUNT 909100141	WORN	03/29/2000 2000061700400	5807
WHILE DOING A HOT SECTION INSPECTION ON THE RIGHT ENGINE AFTER REMOVAL FROM THE AIRCRAFT, NOTICED DAMAGE TO THE TUBULAR ENGINE MOUNT CROSS-MEMBER. AFTER FURTHER INVESTIGATION, FOUND AN ENGINE MOUNT BRACKET RUBBING AGAINST THE TUBULAR CROSS-MEMBER. (X)					
RAYTHN B200		PIN 508103437	WORN MLG DOWNLOCK	05/25/2000 2000061700501	
THE RELEASE LINKS AND PINS IN BOTH MAIN LANDING GEAR DOWNLOCKS WERE REMOVED FROM AIRCRAFT FOR INSPECTION. INSPECTION REVEALED BOTH PINS WERE WORN APPROX .002 INCH BEYOND LIMITS AND BOTH LINK PIN HOLES HAD CIRCUMFERENTIAL SCRATCHES INDICATING THAT PINS HAD AT SOME TIME ROTATED IN LINK. PINS AND LINKS WERE REPLACED. ACFT TIME: 8,933.1 HOURS, 5,559 LANDINGS. SUBMITTER SUGGESTED THAT HOOK AND LINK ASSYS BE DISASSEMBLED AND INSPECTED AT EACH 6 YEAR 8,000 LANDING INSPECTION OF DRAG BRAKE ASSY. (X)					
RAYTHN B95	JANITROL	COMBUSTION 51A45	DEACTIVATED	04/27/2000 2000061700133	
JANITROL COMBUSTION HEAD ASSY, PN 51A45, ON HEATER ASSY, PN D83A28, HAD A ONE INCH DIAMETER RUST HOLE. THIS HOLE WAS CAUSED BY AGE, DETERIORATION AND USE. THE HEATER HAD BEEN IN OPERATION SINCE 1960. SUBMITTER RECOMMENDED A RECURRING ADVISORY DIRECTIVE FOR AGING BEECH BARON MODELS 55, A55, B55, AND B55A, AND BEECH TRAVELAIR MODELS 95, B95, B95A, D95A, AND E95 THAT CORPORATE THE JANITROL 83A28 SERIES COMBUSTION ACFT HEATERS. THERE IS A REGULARLY SCHEDULED MAINTENANCE PROCEDURE CALLED OUT IN THE 83A28 SERIES JANITROL OVERHAUL MANUAL. (X)					
RAYTHN C23		SHIMMY C1000161A	LEAKING INTERNAL	06/07/1999 2000061700394	
SHIMMY DAMPENER HAS NUMEROUS DEAD SPOTS (AIR INSIDE) WHEN ACTUATED. CAUSES NOSE WHEEL TO SHIMMY REAL BAD. (X)					
RAYTHN C23		SHIMMY C10001618	FAILED INTERNAL	06/07/1999 2000061700395	
RETRIEVED SUBJECT SHIMMY DAMPENER FROM STOCK ROOM. ON FUNCTIONAL CHECK, DETERMINED MUCH WORSE THAN THE REMOVED UNIT.					

RAYTHN	CONT	MUFFLER	BULGED	05/11/2000	
V35B	IO550B	70120	LEFT	2000061700637	

DURING A BASIC VISUAL INSPECTION OF THE ENGINE, THE LEFT MUFFLER WAS NOTED AS HAVING SEVERAL BULGES. UPON REMOVAL OF THE MUFFLER AND HEAT SHIELD, THE MUFFLER HAD SEVERAL LARGE HOLES THAT WERE NOT VISIBLE UNTIL THE HEAT SHIELD WAS REMOVED. CAUSE UNKNOWN. SUBMITTER SUGGESTED HEAT SHIELD BE REMOVED FOR CLOSER INSPECTION OF MUFFLER DURING 100 HOUR/ANNUAL INSPECTIONS. (X)

SNIAS	DRIVE GEAR	FAILED	05/31/2000	370
AS350B2	S40	HYD PUMP DRIVE	2000061700136	

HYDRAULIC PUMP FAILED IN-FLIGHT. PRECAUTIONARY LANDING COMPLETED. INSP REVEALED DRIVE SPLINES AT HYD DRIVE COUPLING (FEMALE SPLINES), AND THE DRIVE SPLINES AT THE HYD PUMP (MALE SPLINES) WERE PREMATURELY WORN. SPLINE ENGAGEMENT INSUFFICIENT FOR DRIVE DEMAND. HYD PUMP DRIVE SPLINES INSPECTED AND GREASED AT BASIC INSP. 500 FLYING HRS OR 15 MONTHS BY CALENDER. POSSIBLE CAUSE OF FAILURE UNKNOWN. RECOMMENDED TO PREVENT RECURRENCE, INSPECT HYD DRIVE SPLINES WHEN ACFT IS DELIVERED NEW, AND EACH 100-HOUR AIRFRAME INSP INTERVAL UP TO THE 500-HR INSP FOR A TREND ANALYSIS. ENCOUNTER

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Enter pertinent data		1. A/C Reg. No. N-				
2. AIRCRAFT	MANUFACTURER	MODEL/SERIES	SERIAL NUMBER		OTHER	
3. POWERPLANT					COMPUTER	
4. PROPELLER					FAA	
5. SPECIFIC PART (of component) CAUSING TROUBLE					MFG.	
Part Name	MFG. Model or Part No.	Serial No.	Part/Defect Location.		AIR TAXI	
					MECH.	
6. APPLIANCE/COMPONENT (Assembly that includes part)					OPER.	
Comp/Appl Name	Manufacturer	Model or Part No.	Serial Number		REP. STA.	
Part TT	Part TSO	Part Condition	7. Date Sub.	Optional Information:		
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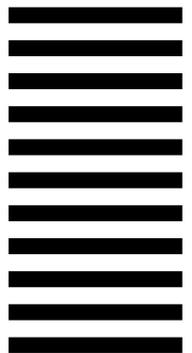
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