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Federal Aviation Administration

Aviation Maintenance Alerts

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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.

ADVISORY CIRCULAR 43.13-1B AVAILABLE

Advisory Circular (AC) 43.13-1B; Acceptable Methods, Techniques, and Practices—Aircraft Inspection and Repair; the long awiated revision of AC 43.13-1A has been completed and is now available on the internet. The internet address is: "http://www.faa.gov/avr/afs/300/pdf/1a-cover.pdf." Once you reach the cover of AC 43.13-1B, click in the blue box which will take you to the first page of the AC. To continue, click in the blue box of the first page. This will take you to the contents. Continue by clicking on the black boxes containing the titles the sections within the chapters.

This document has been updated to include new technological changes since it was originally issued in 1972. Two FAA individuals: Mr. George Torres, AFS-610, and Mr. Bill O'Brien, AFS-300, were primarily responsible for the arduous effort which has now culminated an excellent document. Many thanks to these individuals. Any questions or comments concerning AC 43.13-1B should be directed to Mr. Torres, FAA, Mike Monroney Aeronautical Center, P.O. Box 25082, Oklahoma City, Oklahoma 73125; telephone (405) 954-6923. All comments, both positive and negative, are appreciated.

UNAPPROVED PARTS NOTIFICATION

No. 98-004

AFFECTED ENGINE: General Electric models CJ610 and CF700.

PURPOSE: The purpose of this Unapproved Parts Notification is to advise all owners, operators, and maintenance entities regarding improperly repaired and counterfeit engine parts.

BACKGROUND: A suspected unapproved parts investigation revealed improperly repaired and counterfeit engine parts with accompanying false documentation. The parts were sold between January 1997 and March 1998 by 3D Industries, also known as The Engine Shop, located at 4553 Keller Road, Dallas, TX, 75248. The investigation also determined that many of these parts may have been previously scrapped, life limited military parts that were reconditioned and sold as new, serviceable commercial parts. Falsified engine logbook entries were also discovered. The number of known improperly repaired or counterfeit engine parts is estimated to be in the

hundreds. The installation of these parts could result in sudden engine failure. The parts include, but are not limited to:

Torque Ring	P/N 37D401014P01
Wheel, 1st Stage Turbine	P/N 6028T44P01 & 841B690P7
Case, Combustion	P/N's 6013T84610
Disk, HPC	Various P/N's for stages 1 through 8
Shell, Outer	6008T95G01
Shell, Inner	5016T30G02

RECOMMENDATION: Regulations require that type certificated products conform to their type design. Aircraft owners, operators, maintenance organizations, manufacturers, and parts suppliers should inspect their aircraft and/or aircraft parts inventory for any parts purchased, or which originated, from 3D Industries of Dallas, TX, within the above referenced timeframe. Appropriate action should be taken if any of these parts have been installed on an engine. If found in existing aircraft parts stock, it is recommended they be quarantined to prevent installation in aircraft until they can be inspected for conformity and/or approved for return to service.

The FAA appreciates any information regarding the discovery of the above referenced unapproved parts from any source, the means used to identify the source, and the action taken to remove them from service or stock. The FAA also appreciates information concerning premature engine failures attributed to the parts purchased from 3D Industries.

No. 96-260

AFFECTED PRODUCTS: BO-105 Helicopters

AFFECTED PART: Titanium flange P/N: 4638-303-001, S/N: 1261.

BACKGROUND: The part originated from a transmission involved in an accident and subsequently was inspected and possibly used in the overhaul of another transmission. This part is essential to the installation of the transmission.

RECOMMENDATION: Federal Aviation Administration (FAA) regulations require that U.S. type certificated products conform to their type design. Helicopter owners, operators, maintenance organizations, manufacturers, and parts suppliers should inspect their helicopters and/or parts inventory for the above referenced part. If the item is installed, take the appropriate action. If found in existing aircraft parts stock, it is recommended that the part be quarantined to prevent installation.

The FAA would appreciate any information concerning the discovery of the above referenced unapproved part from any source, the means used to identify the source, and the action taken to remove it from service or stock.

No. 96-243

AFFECTED AIRCRAFT: All aircraft.

PURPOSE: The purpose of this Unapproved Parts Notification is to advise all owners, operators, maintenance entities, and parts suppliers that a large number of surplus aircraft parts have been imported from a foreign military source without documentation attesting to conformity or condition.

BACKGROUND: During a suspected unapproved parts investigation, it was discovered that International Logistics Network Technologies, Inc., (ILN), 21040 Osborne Street, Canoga Park, CA, 91311, formerly of Chatsworth, CA, has been selling numerous aircraft parts that may not conform to their type design. These suspected unapproved parts were obtained by ILN from a foreign military source without documentation regarding the parts' condition, nor was there traceability to an FAA-approved manufacturing process. ILN has been

representing these parts as being in new unused condition. Twenty parts obtained during the investigation were tested and determined not to meet the type design. Some of these parts are considered flight safety critical parts.

RECOMMENDATION: Regulations require that type certificated products conform to their type design. Aircraft owners, operators, maintenance organizations, and parts suppliers should inspect their aircraft and/or aircraft parts inventories for parts purchased directly from ILN or from another source that may have obtained parts from ILN. Any referenced parts that have been purchased from ILN should be inspected for traceability to ensure that the parts conform to current approved standards and technical data. Advisory Circular (AC) 20.62D, Eligibility, Quality, and Identification of Aeronautical Parts, may be used for guidance in inspecting the parts.

AIRPLANES

AMERICAN CHAMPION

American Champion; Model 8KCAB; Citabria; Engine Oil Loss During Flight; ATA 8550

After flying approximately 1 hour, one-half of which was an aerobatic flight, the engine lost 4 quarts of oil.

An investigation by maintenance personnel determined that the engine oil dipstick had vibrated loose allowing the oil to be lost. Improper tightening and security of the dipstick was believed to be the cause of this defect. We recommend that dipstick security and proper installation be closely checked during preflight inspections.

Aircraft total time—544 hours.

BEECH

Beech; Model S-35; Bonanza; Brake Disk Wear; ATA 3242

Supplemental Type Certificate (STC) SA-2146SO was installed on this aircraft. This STC incorporates a wheel brake system using stainless steel brake disks. The brake linings were conditioned in accordance with the STC instructions at the time of installation.

After operating the aircraft for 802 hours, the brake disks (P/N 75-25A) had worn from their new dimension of .445-inch to .391-inch. The submitter stated the .391-inch dimension was far below the allowable wear tolerance. The allowable wear was not given and there was no information in the report concerning brake usage (normal or heavy) or number of landings during the time the brakes were in operation.

Part total time-802 hours.

Beech; Models 36 and 58 Series; Nose Landing Gear Hardware Security; ATA 3230

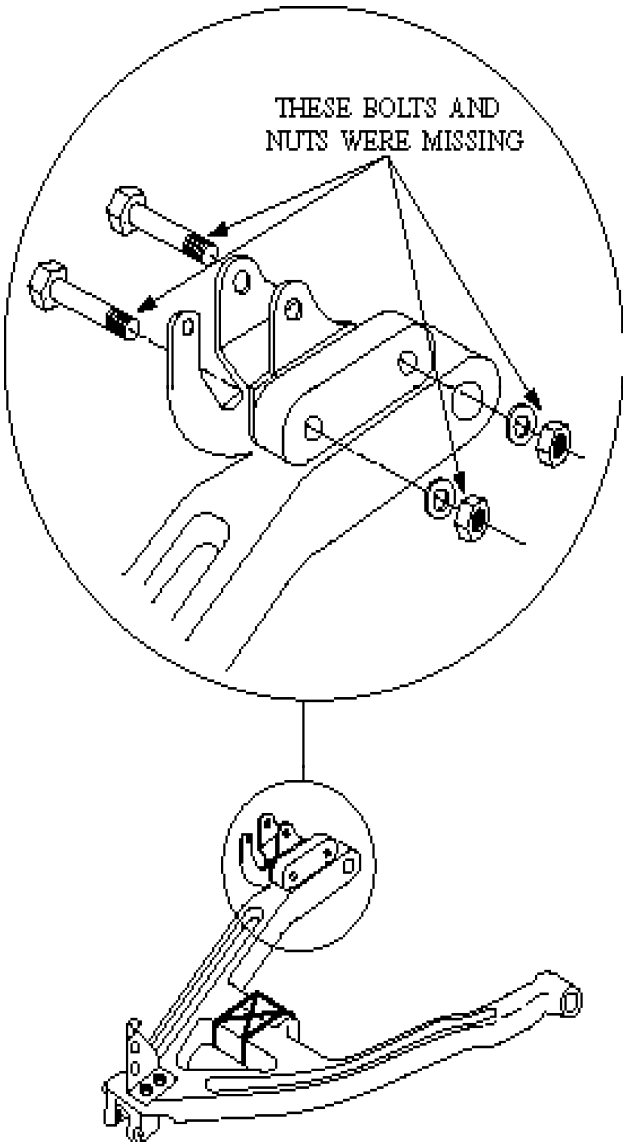
Information for this article was submitted by the FAA Aircraft Certification Office, ACE-118, located in Wichita, Kansas.

A recent landing accident was attributed to the failure of the nose landing gear to remain “down and locked.”

The bolts and nuts that connect the aft drag brace to the nose gear were reported missing. (Refer to the following illustration.) Inspections of other aircraft revealed loose nuts, and in one case the bolt head had separated from the shank. We recommend

that maintenance personnel inspect this hardware for security and proper torque every 100 hours of operation.

The average total time for these inspections was 4,900 hours.

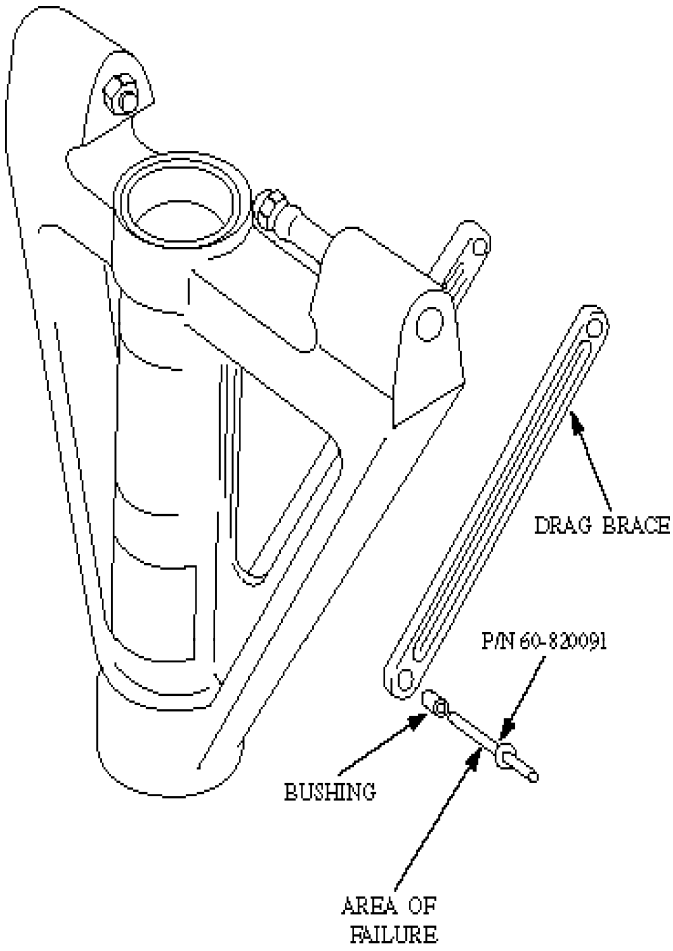


Beech; Model B60; Duke; Defective Nose Landing Gear Uplock; ATA 3230

During a post flight inspection, maintenance personnel discovered that the nose landing gear uplock pin was broken.

The uplock pin (P/N 60-820091) also serves as a bolt which secures the lower end of the left lower drag brace. (Refer to the following illustration.) The submitter speculated that this failure was caused by improper adjustment (high tension) of the nose gear uplock mechanism. Metal fatigue, corrosion, and stress were also factors in this failure. It was implied that maintenance personnel had not complied with the manufacturer's required 2,000-hour overhaul time.

Part total time—3,346 hours.



Beech; Models E-90, F-90, H-90, and C-90 Series; King Air; Flight Control Cable Interference; ATA 2730

Information for this article was submitted by the FAA Aircraft Certification Office, ACE-118 located in Wichita, Kansas.

The FAA has received several reports concerning interference between the elevator down-control cable (P/N 50-524439-31) and the pneumatic ducts. The interference and chafing has caused defects varying from a few broken cable strands to complete cable failure. In one case the elevator down-control cable failed after chafing against a stainless steel clamp used to secure a pneumatic duct joint.

Beech issued Safety Communiqué Number 143, Elevator Control Cable Inspection, advising operators to inspect for this condition. The suspect area is under the floorboards between fuselage stations 116.0 and 147.6.

Beech; Model 200; King Air; Defective Wheel; ATA 3246

While completing a non-destructive test (NDT) on the landing gear wheel assemblies, a wheel half was found cracked.

The wheel half (P/N 40-172) crack was located at the inboard tangent of the bead radius and was approximately 1.25 inches long. The crack was not detected by visual inspection. This area deserves close attention at every opportunity.

Part total time—5,230 hours.

Beech; Model B200; King Air; Defective Hydraulic Indicator; ATA 2911

During a scheduled inspection, the hydraulic accumulator pressure gauge was found stuck indicating 1,150 PSI.

The accumulator pressure gauge was installed as part of Supplemental Type Certificate (STC) SA-4378WP. This STC incorporated a hydraulic landing gear retraction system. The submitter stated that the gauge quality was suspect and suggested checking the entire system thoroughly during scheduled inspections.

Part total time—290 hours.

Beech; Model 300; King Air; Flight Crew Seat Security; ATA 2510

During a scheduled inspection, maintenance personnel discovered that the co-pilot's seat (P/N 101-531017-2) would not lock in the front holes of the seat track.

Airworthiness Directive (AD) 97-06-06 was issued dealing with this subject and references Service Bulletin (SB) 2444 R2. However, neither AD 97-06-06 nor SB 2444 R2 is applicable to King Air 300 series aircraft. The submitter suggested that AD 87-06-06 be revised to include 300 series aircraft. It was recommended that 300 series aircraft be inspected for seat track locking pin interference and necessary repairs be accomplished in accordance with the manufacturer's technical data.

Part total time-6,921 hours.

CESSNA

Cessna; Models 150 and 152 Series; Landing Gear STC Installations; ATA 3230

The following article was submitted for publication by the FAA Aircraft Certification Office, ACE-115W, located in Wichita, Kansas.

The FAA received a report concerning the failure of a landing ski adapter (Bolen Drawing 8978). The landing gear ski system was installed in accordance with Supplemental Type Certificate (STC) SA268GL. As a result of interference between the landing gear and the adapter, gouging occurred on the underside of the adapter. The gouging weakened the adapter and caused it to break due to fatigue cracking.

Aircraft employing this STC should be checked closely during scheduled inspections. The adapter should be visually monitored for

gouging or cracking at the lower side of the extensions. It is also suggested that owners/operators of aircraft with STC SA268GL installed do an initial check of the ski adapters as soon as possible.

Part total time not reported.

Cessna; Model 172N; Skyhawk; Horizontal Stabilizer Cracks; ATA 5510

During a 100-hour inspection, a crack was found in the horizontal stabilizer front spar.

The crack was approximately 1.25 inches long and was located at a lightening hole at the center front face of the front spar (P/N 0532001-98). The submitter speculated that this damage was caused by pulling down, or sitting on, the horizontal stabilizer to reposition the aircraft. The practice of using the tail as a leverage point for ground positioning of the aircraft is common. However, it can do severe and costly damage to the empennage structure and is highly discouraged by the manufacturer.

Part total time-6,909 hours.

Cessna; Model 182N; Skylane; Throttle Control Defect; ATA 7322

During an engine operational test, the throttle stuck at the "full power" position.

Maintenance personnel discovered that the "full open" stop on the carburetor and the throttle stop arm were severely worn causing the power enrichment lever to push the air metering pin past its design limit. Eventually, this action broke the air metering pin and jammed it between the power enrichment lever and the air metering jet. The submitter recommends the "stops" be inspected frequently for excessive wear, especially at the "full open" position.

Part time since overhaul—288 hours.

Cessna; Model TU 206G; Turbo Stationair; Stall Warning Inoperative; ATA 3418

During an annual inspection, the warning system was found inoperative.

An electrical test revealed that the lift switch had high resistance. Also, it was discovered that the lift switch (Safe Flight P/N 146) was incorrect for this installation. The correct lift switch (Safe flight P/N 150) was installed and the system operated properly.

Part total time—947 hours.

Cessna; Model P210N; Centurion; Fuel Line Security; ATA 7310

During an operational flight test after installing a factory rebuilt engine, the fuel pressure dropped suddenly. The pilot made a safe precautionary landing. While taxiing off the runway, the engine failed. As the occupants departed the aircraft, they noticed fuel running from the lower cowling.

The "B" nut on the high pressure fuel line going from the fuel pump to the fuel control was loose. The submitter stated that the "B" nut had been installed by the manufacturer and was still marked with an unbroken "torque stripe." All the preflight checks, engine operational tests, and inspections failed to reveal this defect.

Part total time "0" hours.

Cessna; Model 340A; Alternator/Engine Failure; ATA 2410

The pilot reported that during flight, the left alternator failed. This was followed shortly by failure of the engine. The pilot made a safe single-engine landing.

An investigation revealed the alternator drive clutch failed. Broken metal parts were ingested into the engine oil system. The metallic material completely blocked the engine oil pump inlet screen, shutting off the engine oil supply.

An inspection of the alternator drive shaft revealed evidence indicating the shaft seized due to lack of lubrication.

Part total time—900 hours.

Cessna; Model 401; Nose Landing Gear Bellcrank Failure; ATA 3230

While taxiing to the parking ramp, the pilot heard a "popping" noise which seemed to come from the nose gear area.

An inspection revealed that the "adjusting bellcrank" (P/N 0842104-2) was broken. The bellcrank had broken at the point where the wheel well actuating rod is attached. The submitter could not determine the cause of this failure. The fractured surfaces were clean and fresh indicating an instantaneous separation. There was no evidence of excessive stress, pre-existing cracks, or other related damage in the area.

Aircraft total time—6,623 hours.

Cessna; Model 421C; Golden Eagle; Landing Gear Warning Horn Malfunction; ATA 3260

The pilot reported that with the landing gear extended, the warning horn sounded each time the throttles were retarded or the wings flaps were extended. All of the landing gear indicator lights were green, and a the pilot made a safe landing.

During an investigation, maintenance personnel discovered that the wires going to the throttle position switches were chafed through the insulation. The wires were contacting a castle nut and cotter pin used to secure the pitch trim wheel. The wire-chafing damage was repaired and the wires were repositioned to provide clearance. It is wise to check this area during scheduled inspections.

Aircraft total time—3,710 hours.

Cessna; Model 550; Citation; Fuel Line Chafing; ATA 2820

During a scheduled inspection, a fuel pressure line was found chafing against a "Wiggins" fitting.

The fuel pressure line (P/N 6526355-23) ran to the ejector transfer pump and was contacting the Wiggins coupling on the "T" connection between the manual shutoff and the fuel filter. The U.S. Customs Service, who operates an FAA certificated repair station, submitted this report. They conducted an inspection of their fleet of like aircraft and discovered one other similar defect. It is recommended that the manufacturer redesign the fuel line to provide proper clearance and routing. Also, all operators of like aircraft should conduct a one-time inspection of their aircraft to determine if this condition is present.

Part total time not reported.

Cessna; Model 750; Citation; Wing Flap Failure; ATA 2750

During a landing approach, the trailing edge wing flaps failed to extend. The flaps moved approximately ½-inch, then stopped. The pilot made a safe landing.

An investigation revealed that the right inboard wing flap drive flexible shaft (P/N 9914344-11) had broken. The submitter did not offer a cause for this defect.

All of the wing flap system components should be checked closely for wear, security, and serviceability during inspections and maintenance.

Part total time—782 hours.

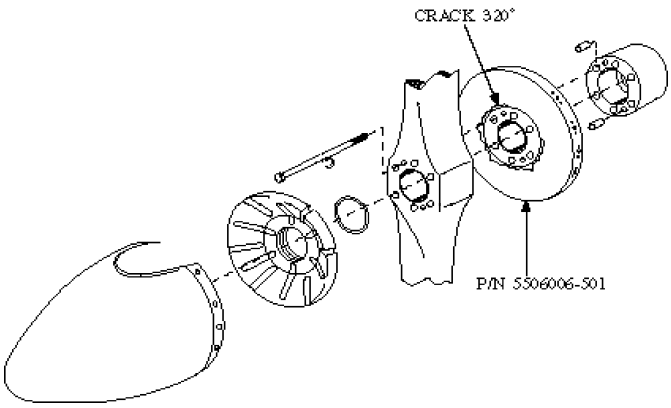
GRUMMAN AMERICAN

Gruman American; Model AA-5; Propeller Spinner Cracks; ATA 6113

When the propeller was removed for installation of a new alternator belt, the maintenance technician found a cracked propeller spinner backing plate.

The crack passed around the mounting holes and traveled through approximately 320 degrees of the backing plate (P/N 5506006-501) circumference. (Refer to the following illustration.) This defect cannot be seen without removal of the propeller and the spacer (P/N B4381). This was the third such failure this submitter discovered. The submitter recommends that the FAA issue an Airworthiness Directive (AD) to require both visual and dye-penetrant inspection of the propeller components.

Part total time—3,268 hours.



Grumman American; Model AA-5B; Brake Line Corrosion; ATA 3242

While installing avionics equipment, the right brake line was found leaking.

The brake line (P/N 5403009-501) is located behind the instrument panel and the side panel. This area is very difficult to properly inspect without some disassembly. The line was severely corroded and leaking from several deep corrosion pits. The line had chafed at several locations on an "old-style scat" duct made of cotton and steel reinforcement wire. Over time, the cotton fabric deteriorated and the steel wire corroded and penetrated the fabric. Evidently, the corrosion was caused by contact between the aluminum brake line and the duct steel reinforcement wire. Although the system and components were not identified, the submitter found another line on this aircraft had corroded due to the same circumstances.

Part total time—1,258 hours.

LEAR

Lear; Model 35A; Centry; Loss of Hydraulic Pressure; ATA 2752

The flightcrew reported that the airplane lost hydraulic pressure during flight.

After landing, maintenance personnel investigated the problem. They determined that the left wing flap actuator (P/N 48C48609) housing had ruptured causing a complete loss of hydraulic fluid. The submitter did not offer a cause for this defect.

Part total time not reported.

MOONEY

Mooney; Model M20B; Mark 21; Faulty Brake ; ATA 3243

During the landing roll, when the pilot first applied brakes, the left main wheel's brake locked. This caused the left tire to skid. The extra friction on the surface of the runway caused the aircraft to veer off the left side of the runway and come to rest in an unpaved portion of the airport.

The aircraft was freed from the area adjacent to the runway and brought to the maintenance hanger for inspection. The technician noted that there was fluid seepage around the brake

piston in question. The fluid had congealed, thus preventing the piston's (P/N 35-202) retraction.

Part total time—Unknown hours

Mooney; Model M20C; Ranger; Nose Retracting Strut Failure; ATA 3230

The aircraft was being taxied for a post annual flight when the nose gear collapsed, followed by the right main and left main gear.

An inspection of the aircraft's landing system revealed the nose gear's retraction truss (P/N 540002-020) had broken on the right side just below the right retraction rod.

The assembly tube which centers inward, showed signs of internal corrosion. The only evidence of corrosion on the outside was a small area of discoloration at a point that is very difficult to see under normal conditions, due to the confined space it occupies.

Part total time—3970 hours

Mooney; Model M20C; Ranger; Oil Filter Screen Separation; ATA 8550

During an annual inspection, the oil pressure filter screen (P/N 62817) was removed and checked for foreign debris. After the screen was cleaned the technician noted that the soldered seam of the inner fine mesh screen was split.

Upon closer examination, the technician noted that the outer screen had approximately a four-strand separation from the solder and showed signs of being swollen.

The submitter speculates differential pressure acting on trapped dirt, grit, and congealed oil when temperatures were low may have stretched the screen. This, combined with aging, may have contributed to the problem. The submitter recommends more frequent and thorough cleaning of the screen, or replacement at intervals not to exceed 500 hours or 5 years, which ever occurs first.

Part total time—Listed as unknown hours

Mooney; Model M20F; Executive; Landing Gear Actuator Failure; ATA 3233

The pilot was unable to get the landing gear to extend by the normal electrical means. Attempts to extend the gear by the use of the manual extension procedures also failed. The aircraft had to be landed in the wheels up configuration.

The resulting investigation revealed that the actuator's (P/N 3214-00) pinion gear had worn beyond limits. This allowed the pinion and drive gear to slip under a load, resulting in a total electric and manual backup failure.

The aircraft had undergone compliance with Airworthiness Directive 75-23-04 which addressed the above mentioned pinion gear's servicing, 33 hours prior to this incident.

Part total time—2804 hours

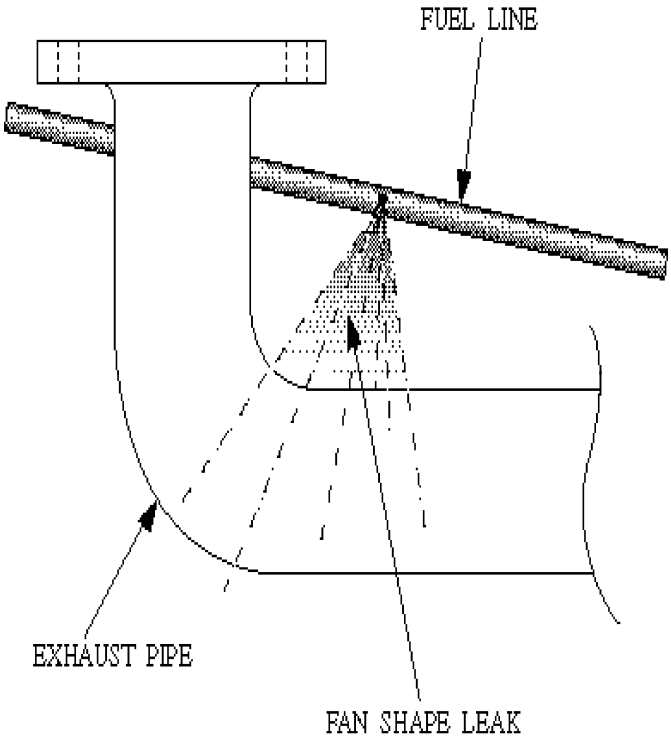
Mooney; Model M20F; Executive; Fuel Leak; ATA 7310

The pilot reported that he had noticed fuel dripping from the right side of the engine cowling.

Inspection of the engine compartment did not show any apparent leaking. When the technician pressurized the system, a "fan-shaped" pattern of fuel was noted emitting from the fuel line (P/N 303-3) which leads to the cockpit pressure gauge. The specific point of the leak was between the fuel control and the firewall.

The pattern was spraying directly on the engine exhaust pipe. (See the following illustration.) This situation posed a potential for an inflight fire.

Part total time—Not reported



Mooney; Model M20J; 201; Loose Skin on the Elevators; ATA 5522

During an inspection, the technician noted that the skin on the top surface of both elevators (P/N's 430026-001 &-002) was loose. The area affected was the row of rivets located along the spar.

It was also noted that the skin on the underside of the left elevator was loose. The balance weights at the tip of each elevator could be flexed vertically approximately 1 inch in either direction.

Aerodynamic flutter and the subsequent structural failure was eminent if this condition was undetected.

Part total time—925 hours

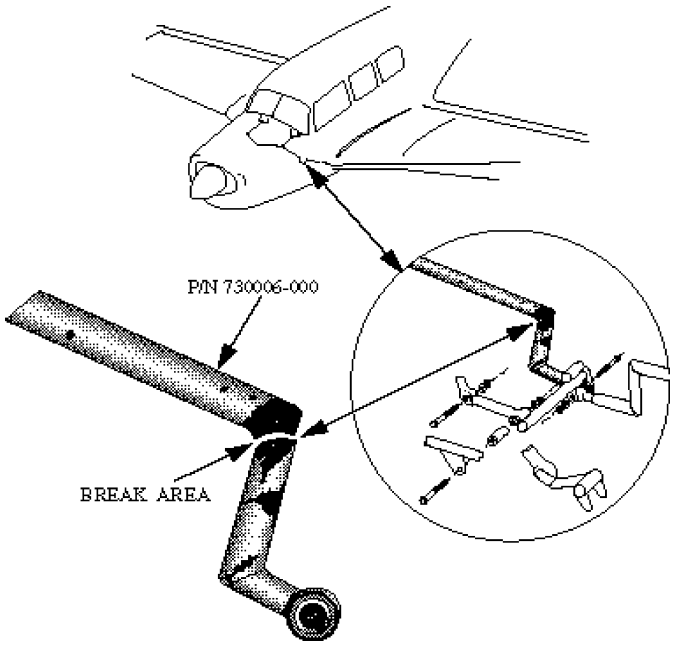
Mooney; Model M20J; 201; Control Link Failure; ATA 2710

The pilot noticed sloppy aileron response. He observed the right aileron vibrating excessively and not responding to control inputs. The pilot made a landing without further incident.

Upon inspection, the technician discovered that the right control link rod assembly (P/N 730006-000) was damaged. The point of damage was located below the cabin floor, at the bellcrank. The link had cracked along a factory weld and then through the tubing wall. (See the following illustration.) The break along the weld showed signs of age. The break through the tubing wall seemed more recent.

Inspectors determined that the aileron's limit stops showed no signs of damage and the rest of the aileron system showed no signs of damage or abuse. The replacement part has the same part number, but reinforcement has been added at both 90-degree corners of the link.

Part total time—2,137 hours over 19 years



Mooney; Model M20J; 201; Control Link (Push/ Pull Rod) Failure; ATA 2710

During the preflight inspection, prior to leaving the tie-down area, the pilot noted that the ailerons appeared to move normally. While doing the control check, just prior to takeoff, the pilot noticed that the right aileron did not move.

Investigation revealed that the push rod located in the belly of the aircraft was broken at the weld which is a portion of the part's 90-degree bend. (See the illustration in the previous article.) The break was at the edge of the weld. It appeared that the crack started on the inside of the 90-degree bend and traveled through the metal to the area away from the weld.

The aircraft had been inspected, in accordance with annual inspection specifications, 87 hours prior to this discovery, and there were no signs of a crack at that time.

The submitter speculates that since the ailerons are secured inside at the control wheel, possible buffeting from prop wash may occur because aircraft are parked tail to tail in the tie down area.

Part total time—3545 hours

Mooney; Model M20J; 300 Missile; Broken Muffler Support; ATA 7810

During an annual inspection the technician noted that the foremost exhaust muffler support tube (P/N 305-03-502) was broken at the lower attach strap.

The tube assembly is the same as the one utilized in the 305-Rocket conversion kit for the M20K series Mooneys. However, the tube is of a heavier design and is not required to have a repetitive inspection as outlined in the Rocket Manufacturer's Service Bulletin 95-305-01 and Airworthiness Directive 95-17-06.

The submitter recommends increasing the number of inspections on this part until it can be determined if this will be a recurring problem with the M20J - Missile 300 Conversion.

Part total time—176 hours

Mooney; Model M20M; TLS Mean Machine ; Loose Door Hinge; ATA 5280

During an inspection the technician noted that the rivets holding the landing gear door were sheared off. This caused the door to jam, which prevented full gear retraction. Gear extension was not affected.

All necessary parts were replaced, tests were conducted, and the aircraft was returned to service.

The submitter recommends close inspection of gear door hinge rivets during routine maintenance checks.

Part total time—715 hours

PIPER

Piper; Model J3; Cub; Shoulder Harness Limitation; ATA 2520

When the shoulder harness (P/N'S AF35 and AF36) is installed in accordance with Supplemental Type Certificate SA1581GL, it prevents the sole pilot occupying the rear seat from operating either the carburetor heat handle or the fuel shutoff valve.

The submitter states that the Supplemental Type Certificate should be reviewed to incorporate only an inertial reel-type harness which allows free movement and required control accessibility, as specified in the FAR's.

Part total time—Not reported

Piper; Model PA31T; Cheyenne; Elevator Trim Cable Defect; ATA 2731

During compliance with Piper Service Bulletin No. 897A, the right elevator was removed. Upon inspection of the elevator trim cable

(P/N 40734-48), the technician noted several frayed and broken strands. The damage occurred at a point were the cable rides over two pulleys that measure 1.25 inches in diameter.

The submitter suggests, especially as total aircraft time increases, that one should inspect the cable whenever the area is open because the cable is difficult to inspect unless disassembly occurs.

Part total time—4,005 hours

Piper; Model PA34-220T; Seneca III; Improperly Torqued Bolt ; ATA 3211

During an annual inspection, the inspector discovered that the right main landing gear was loose. The inspector also discovered that the forward pivot bolt for the trunnion was not torqued properly from the factory.

The landing gear was removed, inspected for cracks, and reinstalled in accordance with the aircraft service manual.

The aircraft was then operationally checked and returned to service.

Part total time—189 hours

Piper; Model PA31-350; Chieftain; Faulty Circuit Breaker; ATA 2400

The pilot reported that the aircraft's landing gear handle did not return to the "neutral" position after gear extension. The pilot made a safe landing and sent the aircraft to maintenance for investigation.

The technician traced the trouble to a gear safety solenoid circuit breaker. This breaker is tied to the safety system, the indicator lights, and the door solenoid on the power pack.

The breaker had internal resistance which caused it to be intermittent. The breaker was replaced and the aircraft returned to service.

Part total time—Unknown hours

RAYTHEON

Raytheon; Model BH-125-400A; Smoke and Excessive Heat in the Cockpit and Cabin; ATA 2160

After 2 hours of cruise flight, the auxiliary heat was selected to warm the cockpit. Approximately 35 seconds later, smoke and excessive heat were noted in the cockpit and cabin. Selecting the "cold" position had no effect. Reducing power on the right engine was the only means of lowering the temperature. The pilot made a safe landing at the nearest airport.

During an investigation, maintenance personnel determined that the auxiliary heat valve (P/N 104568) had malfunctioned. After changing the valve, the system operated properly. This was the second auxiliary heat valve failure experienced by the submitter in the past year. Since the Pilot's Operating Handbook (POH) does not address the situation encountered and there is no provision to manually close the valve during flight, it was suggested that the manufacturer consider redesigning the system to prevent uncontrolled heat entering the cabin. Also, the submitter suggested that a mandatory overhaul time be established for the valve.

Part time since overhaul—281 hours.

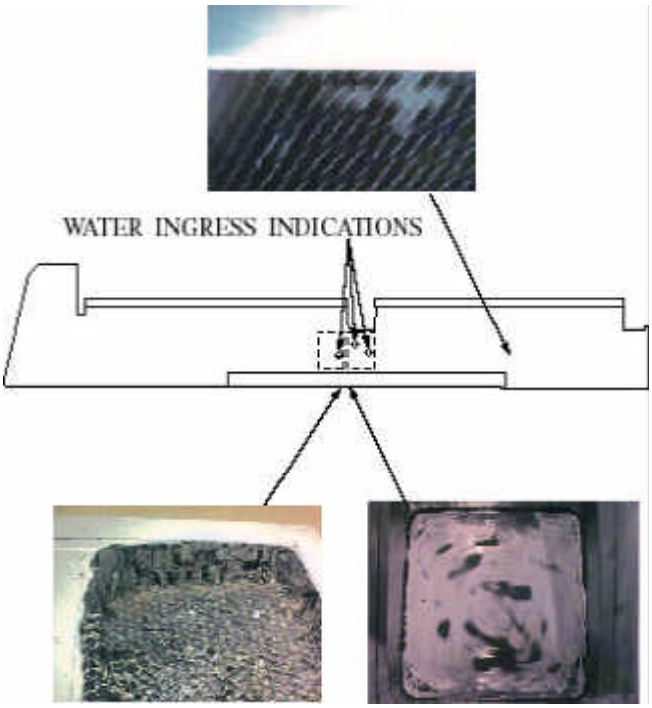
Raytheon; Model BAE-125-800A; Hawker; Aileron Damage; ATA 5751

During compliance with a 4-year x-ray inspection, film of the left aileron indicated water ingress. The aileron is constructed from composite material.

During the repair process, performed in accordance with the manufacturer's technical data, water was not found in the areas indicating water ingress. However, corrosion was found in the honeycomb and lower aileron skin. (Refer to the following illustrations.) In one area pitting corrosion had penetrated the lower aileron skin. The submitter stated that the "x-rays per the Raytheon Non-Destructive manuals are not indicating the presence of

corrosion in the ailerons." It was suggested that the manufacturer design an alternate method for the detection of corrosion.

Part total time—4,563 hours.



HELICOPTERS

AMERICAN EUROCOPTER

American Eurocopter; Model BO-105; Fuel Leak; ATA 2810

During an emergency medical service (EMS) flight, the pilot landed at a heliport on top of a hospital. Upon departing, one of the paramedics notified the pilot that fuel was leaking from the underside of the aircraft.

Buckets were placed under the aircraft to contain the fuel. The pilot opted to fly the helicopter to a nearby airport for repair. He stated that approximately 15 gallons of fuel were lost. A witness at the airport reported that the helicopter was leaking fuel "badly" during the landing approach.

The report did not contain much detail concerning the cause of this problem. However, the forward main fuel cell was replaced to correct the defect.

Part total time not reported.

BELL

Bell; Model 205A-1, 205B, 212, 412, and 412CF; Unapproved Flight Control Components; ATA 6700

The following article was submitted for publication by the FAA Rotorcraft Certification Office, ASW-170, located in Fort Worth, Texas.

Recently, Bell issued several Alert Service Bulletins (ASB), one for each of the models listed above. All of the ASB's refer to HR Textron Alert Service Bulletin 41000570-67A-04, Revision 1, dated August 12, 1998, which deals with flight control hydraulic servo actuators. The Textron ASB recommends an inspection of the servo actuators for "unauthorized" parts. HR Textron recently discovered five bogus actuating lever assemblies in its exchange pool. The bogus parts differ from genuine parts in two important ways: 1. Bogus parts are machined as opposed to genuine parts which are forged. 2. Bogus parts have a thicker end flange and bushing that is approximately 1/8-inch wider than the genuine parts. The ASB applies to hydraulic servo actuators (BHTI P/N 212-076-004 and HR P/N 41000570) used to control the tail rotor on these model helicopters.

Unless actuators are new (never been repaired or overhauled), operators are advised to conduct an inspection to identify unauthorized actuating lever assemblies used in the yoke and linkage on the actuator. Refer to the appropriate ASB for serial number applicability and additional information.

Copies of the HR Textron ASB may be obtained from: HR Textron, 25200 W. Rye Canyon Road, Santa Clarita, California 91355-1265.

Bell; Models 206 A, B, and L Series; Flight Control Rigging; ATA 6710

This article was submitted for publication by the FAA Rotorcraft Certification Office, ASW-170, located in Fort Worth, Texas.

Bell recently issued Operational Safety Notices (OSN's) 206-98-34 and 206L-98-40, both dated November 2, 1998. These documents were generated due to a recent "hard-fouling" condition found in the flight control systems of the models listed. The condition resulted in a broken swashplate drive collar set. Further investigation disclosed that an unapproved method was used to adjust the rotor autorotation RPM during rigging procedures.

The two OSN's were issued to stress the importance of adhering to the approved rigging procedures published in the manufacturer's maintenance manuals.

Bell; Model 206L-4; Defective External Load Manual Release Cable; ATA 2550

While conducting external load operations, the cargo separated without command.

The Model E-72 electronic load weigh system installed was manufactured by Onboard Systems. The load cell is installed between the cargo hook and the load trolley. Using the cargo hook manual release cable (Bell P/N 206-072-903-104) prevents full travel of the trolley. A load swing can pull the manual release cable tight, break the fitting connecting it to the hook, and activate the manual release. Onboard Systems now offers a longer manual release cable (P/N 268-011-00) for their Model E-72 kit which eliminates this problem.

Part total time—2,970.

AMATEUR, EXPERIMENTAL, AND SPORT AIRCRAFT

VANS

Vans; Models RV-3 and 3A; Inflight Wing Failures; ATA 7700

In the July 1998 issue of the Alerts we published a special article reporting the background history of wing failures involving Vans Models RV-3 and-3A aircraft. The article recommended that owners and operators be familiar with, and verify accomplishment of, all Vans' minimum equipment, operating limitations, design modifications, service information letters, and change notices requirements.

A Special Airworthiness Information Bulletin (SAIB) No. ACE-99-10 was recently mailed to all registered owners and operators of Vans Models RV-3 and -3A aircraft providing pertinent information including a brief history of in-flight wing failure accidents, and highlighting Vans' minimum required equipment, structural modifications, and operating limitations.

Eight accidents with seven fatalities have occurred in the United States since 1980, and one additional fatal accident occurred in Canada. Five of the nine accidents involved unmodified RV-3's. Four airplanes were modified to Vans' RV-3A configuration. The 3A optional designation incorporates the manufacturer's first wing structural modification (CN-1) for Type I wing spars.

Vans Design, Equipment, and Operating Recommendations:

Vans recommends that aerobatic flight operations be prohibited for Model RV-3 and -3A airplanes that have not had Vans wing spar modifications incorporated, or if they are over 1,050 pounds gross weight (including pilot and wing fuel weight).

RV-3/RV-3A U.S. Accident Summary

No.	Date	NTSB File No.	"N" Number	Model	Fatal Y/N?	Location	Accident Description
1.	8/5/80	3-2810	N66CJ	RV-3	Y	Streator, IL	Cruise flight; left wing separated. Aircraft rebuilt from previous landing accident Pre modification accident.
2.	3/11/81	3-0469	N55F	RV-3	Y	Kennett, MO	Low level/high speed flyby; left wing separated from aircraft. Undersized wing spar attach bolts.
3.	11/27/86	2051	N135RV	RV-3	Y	Carmel Valley, CA	Acrobatic flight; wings separated at top of climb.
4.	3/14/88	578	N87JP	RV-3A	N	Antioch, CA	Acrobatic flight; spin recovery, left wing bent upward, impacted nearly level attitude.
5.	8/6/92	2667	N50WP	RV-3	Y	Jackson, MI	Acrobatic flight; abrupt pitch up/top of loop, wings folded. CN-1 spar modification.
6.	10/8/95	1760	N27RV	RV-3A	Y	Forest Grove, OR	Acrobatic flight; rapid rate climb; right wing separated; +9.2 G's indicated.
7.	3/8/98	FTW98F A145	N99HV	RV-3A	Y	Elbert, CO	Acrobatic flight; wing folded top of loop.
8.	9/26/98	LAX98L A305	N244WW	RV-3	Y	Arbuckle, CA	Pilot rated for VFR only, in 400'overcast (IMC); pulled up from dive; +7/-4.5 G's indicated.

a. Design and Weight Limitations: RV-3 and -3A model airplanes properly modified to Vans' Change Notice No. 1 (CN-1) and Change Notice No. 2, Type I (CN-2-I); Spar Modification Instructions for Type I Wings (1/8-inch thick spar bar stock with 1/8-inch rivets); or CN-2-II, Spar Modification Instructions for Type II Wings (3/16-inch thick spar bar stock with 3/16-inch rivets) should not be prohibited by design from aerobatics, unless the airplane's aerobatic gross weight (including pilot and wing fuel weight) exceeds 1,050 pounds. Vans CN-1, re-enforcement of the root rib and rear spar, if not previously incorporated, is designed to be incorporated in conjunction with CN-2-I.

b. Required Aerobatic Equipment and Operating Limitation Placards: In addition to Vans' wing spar modifications, Vans models RV-3 and -3A design includes the following minimum flight equipment and placard installation for aerobatic flight operations:

Placards:

Plus (+)6 G maximum positive load limit at maximum aerobatic gross weight of 1,050 pounds (including pilot and wing fuel weight).

Minus (-)3 G maximum negative load at 1,050 pounds gross weight (including pilot and wing fuel weight).

A 210-mph never exceed speed (V_{NE}).

A 132-mph design maneuvering speed (V_A).

Equipment: A recording accelerometer (G meter) required.

RECOMMENDATION:

Design, Equipment, and Operation: The FAA highly recommends registered owners of amateur-built models RV-3 and -3A airplanes incorporate Vans' required design changes,

placards, and equipment prior to normal or aerobatic flight and observe Vans' aerobatic flight operational limitations. In no case should the airplane be operated above 1,050 pounds maximum gross weight, above +6/-3 G's, or beyond V_{NE} or V_A.

Overload: In the event of inadvertently encountering in-flight "G" loads above +6/-3 G's, it is highly recommended that registered owners immediately contact Vans for detailed inspection criteria. A detailed wing structural inspection in accordance with Vans' design criteria should be completed prior to the next flight. Any structural damage should be corrected prior to the next flight using specifications obtained from Vans.

Condition Inspection: If you are not the original builder, you should not assume your model RV-3 meets all of Vans' design specifications, unless a thorough internal inspection has been conducted. When documenting the wing's internal condition, check for:

- evidence of aircraft quality workmanship standards;
- over or under driven rivets;
- corrosion;
- insufficient edge distance for rivets and center section bolts, and oversized or elongated fastener holes;
- extra holes in spar flange strips;
- corroded, damaged or defective control push rod linkages;
- cracks around the aileron bellcrank mount in the wing rib web; and
- evidence of previous damage to the internal wing structure, i.e. bent ribs, etc.

POWERPLANTS AND PROPELLERS

PRATT & WHITNEY

Pratt & Whitney; Model R-1340; Cylinder Failure; ATA 8530

This engine was installed in an Air Tractor Model AT 301 aircraft. The pilot made a safe emergency landing after experiencing a sudden and unexpected loss of engine power. An investigation revealed that the number 9 cylinder head had separated just above the top of the piston travel. It appeared that the separation began as fatigue cracking at the exhaust valve seat. The submitter speculated that this failure was due to age and metal fatigue, or as he stated "it just died of old age."

Part time since major overhaul—675 hours.

TELEDYNE CONTINENTAL

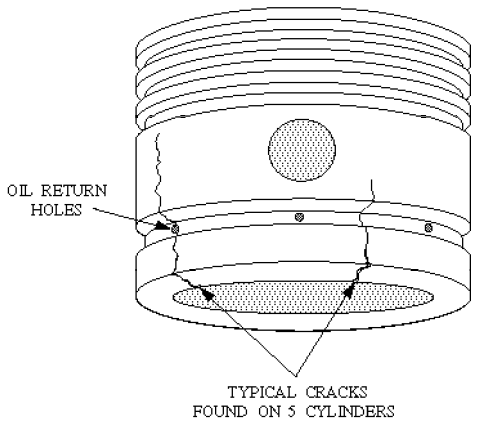
Teledyne Continental; Model GO 300; Piston Failures; ATA 8530

This engine was installed in a Cessna Model 175A aircraft. During an annual inspection, an engine compression test showed three cylinders below the acceptable limits.

After removing the three cylinders, broken rings were found on two and the third had a burned exhaust valve. All three pistons were cracked. (Refer to the following illustration.)

The three remaining cylinders were removed for inspection. A total of five of the six cylinder pistons were cracked. Two of the cracked pistons also had broken rings. The piston cracks appeared to originate at the oil return holes under the ring. The submitter did not offer a conclusion concerning the cause of this damage.

Part total time—680.



TEXTRON LYCOMING

Textron Lycoming; Model IO-360A1B6D; Crankcase Crack; ATA 8520

This engine was installed in a Cessna Model 177RG aircraft. The pilot reported a large oil leak coming from the left side of the cowling.

Maintenance personnel investigated the report and found a crack on the engine crankcase. The crack was located 1 inch below the number 2 cylinder flange and followed the lower circumference of the cylinder approximately 5.5 inches. The submitter stated the cause of this defect could not be determined; however, experience with other similar engine defects was related to this occurrence. It was recommended that this area be checked closely during scheduled inspections.

Part time since overhaul—1,300 hours.

AIR NOTES

AIRWORTHINESS DIRECTIVES (AD's) ISSUED IN NOVEMBER 1998

96-10-01R1, Piper PA-28 series airplanes - requires landing light support replacement.

97-01-01R1, Piper PA-24, PA-28, PA-30, PA-32R, PA-34, PA-39 series airplanes - requires inspecting main gear sidebrace studs for cracks.

98-15-25, Eurocopter Deutschland GmbH Model EC135 helicopters - requires a tail rotor drive shaft vibration survey

98-21-09, Robinson R22 helicopters - requires installing fuel tank vent tubes

98-22-11, AlliedSignal T5317A-1 turboshaft engines

98-22-14, Rolladen Schneider LS sailplanes - requires inspecting forward elevator mounting bracket

98-22-15, Slingsby Dart T.51 sailplanes - requires inspecting aluminum alloy spar booms

98-22-16, Robinson R44 helicopters - requires main rotor blade inspections.

98-23-01, Parker Hannifan Airborne dry air pumps, conversion kits, and coupling kits.

98-23-02, Cessna 180 and 185 series - requires modifying ski bungee assemblies.

98-23-03, Eurocopter France SA330 series helicopters - requires replacing tail rotor electrical bonding braid.

98-23-04, Eurocopter France AS332 series helicopters - requires replacing main rotor blades.

98-23-09, Eurocopter France SA330 series helicopters - requires inspection of tail rotor shaft hinge retainer

98-23-10, Burkhart GROB G109B gliders - requires inspecting engine mounting frame

98-23-14, Piaggio P-180 airplanes - requires inspecting elevator and aileron control pins.

98-23-18, Bell 214 series helicopters - requires inspection of barrel nuts.

98-24-03, BMW Rolls-Royce BR700 series turbofan engines.

98-24-04, SOCATA - Groupe Aerospatiale TBM 700 airplanes - requires inspecting web of flap carriage.

98-24-05, HOAC-Austria DV-20 Katana airplanes - requires replacing engine electronic modules.

98-24-06, Dornier-Werke Do 27 Q-6 airplanes - requires inspecting rivets on forward stabilizer.

98-24-07, EXTRA Flugzeugbau EA-300 series airplanes - requires inspecting rudder pedal for proper alignment.

98-24-08, Burkhart Grob G115 series airplanes - requires inspecting area of elevator trim tab hinges.

98-24-09, Burkhart Grob G109B gliders - requires inspecting elevator and trim tab.

98-24-10, Stemme GmbH KG Model S10 sailplane - requires replacing flap drive rocker.

98-24-11, Mooney M20 series airplanes - requires inspecting aileron control links.

98-24-12, Ursula Hanle Model H101 "Salto" sailplanes - requires replacing airbrake lever.

98-24-13, Eurocopter Deutschland Model MBB-BK117 helicopters - requires inspections of surfaces of tail boom vertical fin.

98-24-14, Cessna 340 and 414A airplanes - requires inspecting engine exhaust components in WYE tube.

98-24-15, Bell 204, 205, 212 helicopters - requires creation of component history cards.

98-24-20, Grob G109 and G109B sailplanes - requires inspecting radius of landing gear retaining bars.

98-24-21, Eurocopter France AS332 series helicopters - requires inserting instructions into RFM's.

98-24-22, Agusta A109C helicopters - requires replacing tail rotor blade grip assemblies.

98-24-23, Eurocopter France SE.3160, SA.316, SA.319B helicopters - requires inspecting horizontal stabilizer spar tubes.

98-24-27, First Technology Fire and Safety Toilet Compartment Fire Extinguishers

98-24-29, Aerostar PA-60 series airplanes - requires inspecting forward face of upper spar cap.

98-24-30, Stemme KG models S10 sailplanes - requires inspecting areas in flight control system.

98-24-31, Bell Model 430 helicopters - requires inspecting of inner surface of forward fairing assembly.

98-24-32, Eurocopter France AS-365, SA-360, SA-365, and SA-366 helicopters - requires inspecting for broken or out-of-tolerance attachments springs.

SUSPECTED UNAPPROVED PARTS (SUP) SEMINAR

As announced in previous editions of the Alerts, the Designee Standardization Branch, AFS-640, is once again presenting the Suspected Unapproved Parts (SUP) seminar. A schedule of the seminars and information for requesting an SUP seminar in your area is listed in this article.

Seminar dates will be announced in the Alerts, the Designee Update newsletter, and on the Internet under FedWorld.gov. You may access the FedWorld BBS directly at (703) 321-3339. You may access the Alerts through the Internet, using the Regulatory Support Division, AFS-600, "HomePage" at the following address.

http://www.mmac.jccbi.gov/afs/afs600

The seminar will discuss the following:

1. Introduction to the policy of the Suspected Unapproved Part Program Office, AVR-20.
2. What is an approved part/unapproved part?
3. How can approved parts be produced?
4. What is a suspected unapproved part?

5. How is a suspected unapproved part reported in accordance with FAA Order 8120.10A, Suspected Unapproved Parts Program, and utilizing FAA Form 8120-11, Suspected Unapproved Parts Notification?
6. How do you determine the status of parts?
7. What is the procurement process?
8. How do you use the Internet and FedWorld to find a list of unapproved parts?

The cost of this 1-day, 8-hour seminar is $60. The seminar may be used for the Inspection Authorization (IA) renewal training requirement specified in Title 14 of the Code of Federal Regulations (14 CFR) part 65, section 65.93(a)(4).

The seminar is open to the aviation industry. Anyone wishing to attend may telephone (405) 954-0138. Payment is required in advance by using VISA, MasterCard, or a check. **When scheduling attendance, please reference the seminar number.**

SCHEDULE FOR SUSPECTED UNAPPROVED PARTS (SUP) SEMINARS

Seminar No.	1999	Location
759905	Jan 27	Raleigh, NC
759906	Jan 28	Raleigh, NC
759907	Feb 10	San Antonio, TX
759908	Feb 11	San Antonio, TX
759909	Mar 3	Cincinnati, OH
759910	Mar 4	Cincinnati, OH
759927	Mar 17	Jackson, MS
759911	Apr 14	Albany, NY
759912	Apr 15	Albany, NY
759913	Apr 28	Scottsdale, AZ
759914	Apr 29	Scottsdale, AZ
759915	May 12	Miami, FL
759916	May 13	Miami, FL
759917	Jun 9	Helena, MT
759918	Jun 10	Helena, MT
759919	Jun 23	Minneapolis, MN
759920	Jun 24	Minneapolis, MN
759928	Jul 14	Portland, ME
759921	Aug 11	San Diego, CA
759922	Aug 12	San Diego, CA
759923	Aug 25	Denver, CO
759924	Aug 26	Denver, CO
759925	Sep 15	Little Rock, AR
759926	Sep 16	Little Rock, AR

If you require an ADDITIONAL SUP seminar, please write to: FAA, ATTN: Les Sargent (AFS-640), P.O. Box 25082, Oklahoma City, OK 73125. Depending on the availability of AFS-640 personnel, the requests for additional SUP seminars may be authorized. The registration process is the same as that previously discussed in this article. If you have specific questions regarding an ADDITIONAL SUP seminar, please contact Les Sargent at (405) 954-6494.

CHANGES TO THIS PUBLICATION

We have created a new Internet web site which includes an electronic version of FAA Form 8010-4, Malfunction or Defect (M or D) Report. You may use the electronic version to send M or D reports to us. The web site also includes a search function for older copies of the Alerts. The address for this web site is:

http://www.mmac.jccbi.gov/alerts/

IF YOU WANT TO CONTACT US

If you want to contact the staff of this publication we welcome your comments, suggestions, and questions. Also, you may use any of the following means of communication to submit reports concerning aviation-related occurrences.

Editor: Phil Lomax
Phone: (405) 954-6487
FAX: (405) 954-4570 or (405) 954-4748
or Ed Galasso
Phone: (405)954-6471

Mailing address:
FAA
ATTN: AFS-640 ALERTS
P.O. Box 25082
Oklahoma City, OK 73125-5029

Internet E-mail address:
ga-alerts@mmacmail.jccbi.gov

AFS-600 HomePage Internet address:

http://www.mmac.jccbi.gov/afs/afs600

Current and back issues of this publication may still be obtained from the FedWorld Bulletin Board System (BBS) via the Internet at the following address:

http://www.fedworld.gov/pub/faa-asi/faa-asi.htm

FAA FORM 8010-4, MALFUNCTION OR DEFECT REPORT

For your convenience, FAA Form 8010-4, Malfunction or Defect Report, will be printed in every issue of this publication. You may complete the form, fold, staple, and return it to the address printed on the form. (No postage is required.)

AIRWORTHINESS AVIATION SAFETY PROGRAM MANAGERS

This is a current list of headquarters and regional FAA Airworthiness Aviation Safety Program Managers, and we encourage you to use their services. They provide a contact in your local Flight Standards District Office (FSDO) where you can learn about programs, seminars, services, and exchange knowledge and experience.

NATIONAL

FAA
Attn: Lee Norvell, AFS-340
800 Independence Ave., S.W.
Washington, DC 20591
(202) 267-8616
FAX: (202) 267-5115

AERONAUTICAL CENTER

FAA
Attn: Eric Baird, AFS-641
P.O. Box 25082
Oklahoma City, OK 73125
(405) 954-6474
FAX: (405) 954-4748

ALASKAN REGION

FAA
Attn: Johnnie Wallace
Federal Building
222 W. 7th Ave., Box 14
Anchorage, AK 99513-7587
(907) 271-5335
FAX: (907) 276-6207

CENTRAL REGION

FAA
Attn: Danny Morford
601 East 12th Street
Kansas City, MO 64106
(816) 426-3237 Ext. 227
FAX: (816) 426-6811

EASTERN REGION

FAA
Attn: Charlie Fowler
Fitzerald Federal Building 111
JFK International Airport
Jamaica, NY 11430
(718) 553-3231
FAX: (718) 995-5696

GREAT LAKES REGION

FAA
Attn: Rich Mileham
2300 East Devon Avenue
Des Plaines, IL 60018
(847) 294-7623
FAX: (847) 294-8001

NEW ENGLAND REGION

FAA
Attn: Tony Janco
12 New England Executive Park
181 S. Franklin Ave., Room 202
Burlington, MA 01803-5299
(781) 238-7229
FAX: (781) 238-7245

NORTHWEST MOUNTAIN REGION

FAA, Seattle FSDO
Attn: Greg Young
1601 Lind Ave., S.W.
Renton, WA 98055
(425) 227-2254
FAX: (425) 227-1200

and/or

FAA, Seattle FSDO
Attn: Lou Lerda
1601 Lind Ave., S.W.
Renton, WA 98055
(425) 227-2887
FAX: (425) 227-1810

SOUTHERN REGION (NONE)

SOUTHWEST REGION

FAA
Attn: Fred Dryden
2601 Meachem Blvd.
Fort Worth, TX 76137-4298
(817) 222-5251
FAX (817) 222-5285

WESTERN PACIFIC REGION

FAA
Attn: Don Green
6650 Belleau Wood Lane
Sacramento, CA 95822
(916) 422-0272
FAX: (916) 422-0462

OMB No. 2120-0003

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

MALFUNCTION OR DEFECT REPORT

OPER. Control No.
ATA Code
1. A/C Reg. No. N-

Enter pertinent data:	MANUFACTURER	MODEL/SERIES	SERIAL NUMBER
2. AIRCRAFT			
3. POWERPLANT			
4. PROPELLER			

5. SPECIFIC PART (of component) CAUSING TROUBLE

Part Name	MFG. Model or Part No.	Serial No.	Part/Defect Location

6. APPLIANCE/COMPONENT (Assembly that includes part)

Comp/Appl Name	Manufacturer	Model or Part No.	Serial Number

Part TT	Part TSO	Part Condition	7. Date Sub.

8. Comments (Describe the malfunction or defect and the circumstances under which it occurred. State probable cause and recommendations to prevent recurrence.)

Optional Information:

Check a box below, if this report is related to an aircraft

☐ Accident; Date _____ ☐ Incident; Date _____

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OTHER	
COMMUTER	
FAR	
UPS.	—
AIR TAXI	( )
HELICOPTER	
OPER.	SUBMITTED BY:
REP. AIR.	TELEPHONE NUMBER:

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Use this space for continuation of Block 8 (*if required*).

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