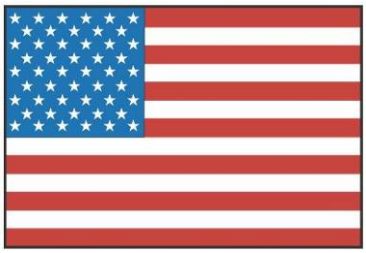
U.S. Department of Transportation
Federal Aviation Administration

AFS-600
Regulatory Support Division

ADVISORY CIRCULAR

43-16A

AVIATION MAINTENANCE ALERTS



ALERT NUMBER 402

JANUARY 2012

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

AVIATION MAINTENANCE ALERTS

The Aviation Maintenance Alerts provides the aviation community with an economical means to exchange service experiences and to assist the FAA in improving aeronautical product durability, reliability, and safety. We prepare this publication from information operators and maintenance personnel who maintain civil aeronautical products pertaining to significant events or items of interest. At the time we prepared this document, we have not fully evaluated the material. As we identify additional facts such as cause and corrective action, we may publish additional data in subsequent issues of the Alerts. This procedure gives Alerts' readers prompt notice of conditions reported to the FAA Service Difficulty Reporting System (SDRS). We welcome your participation, comments, and suggestions for improvement. Send to: FAA; ATTN: Aviation Data Systems Branch (AFS-620); P.O. Box 25082; Oklahoma City, OK 73125-5029.

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

AIRPLANES

Bombardier: 700-1A10: Loose Power Cable; ATA 2497

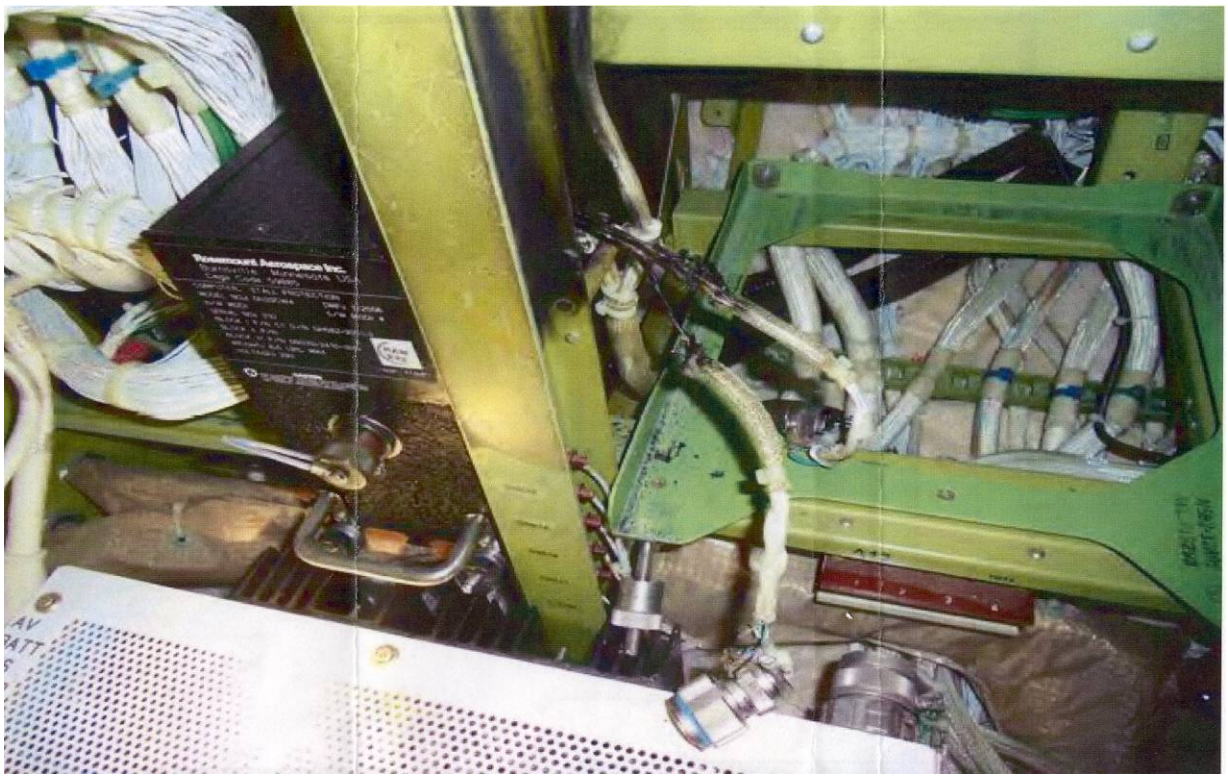
A repair station technician states, "The customer noticed an amber 'electrical system fail' CAS message *(crew advisory system). (Inspection)* found a power cable for the number two TRU *(transformer/rectifier unit)* had come free. Also found were two charred wire harnesses at the number two SPDU (Secondary Power Distribution Unit)—and 'arcing marks' on the unit *(itself).* This arcing appears to have been caused by the loose power cable.

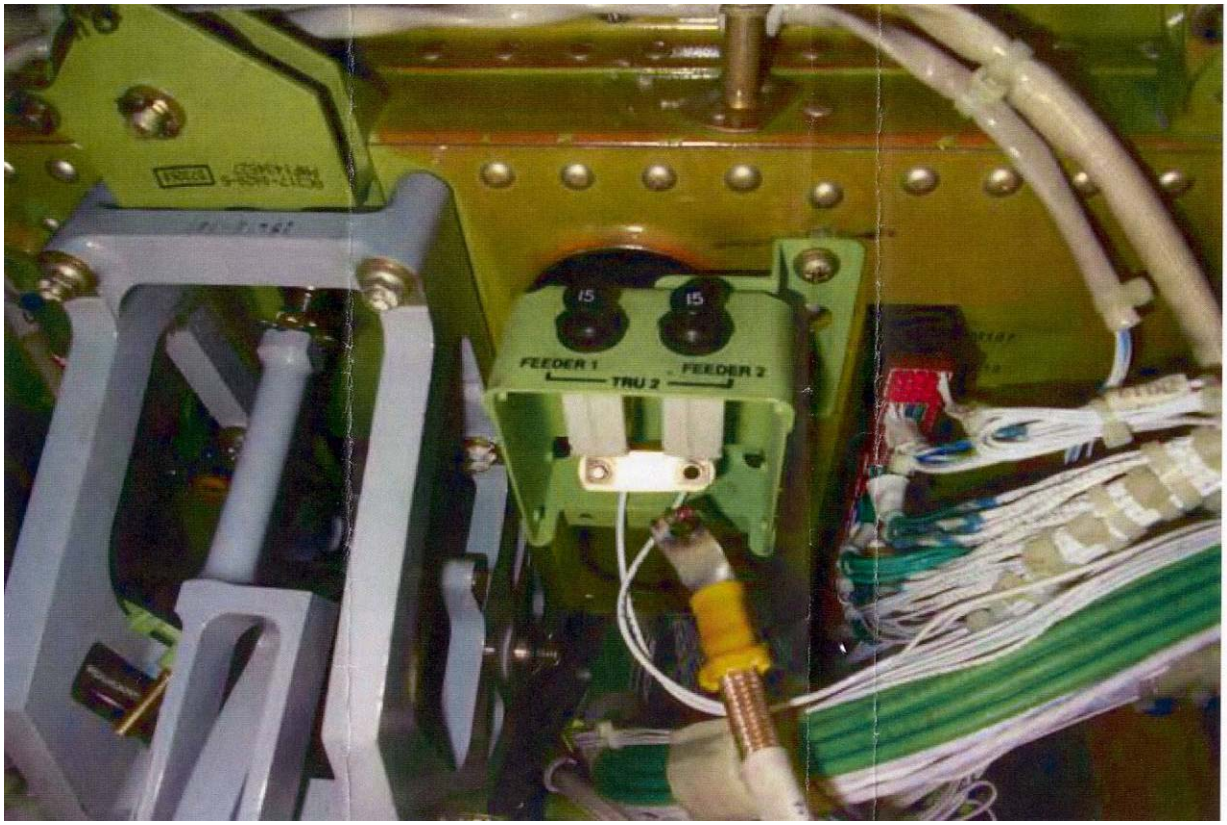
"The power cable P/N is 3PB189A4. It connects at one end to the TRU2 post on the forward side of the unit labeled 'DC Power Center'. This unit is located under the floorboard of the cockpit entry area. The other end connects to the bus bar of a unit (P/N 7274-11-15) which contains two fifteen amp circuit breakers. *(This too is found)* under the floorboards in the same area. The circuit breakers are marked 'Feeder 1' and 'Feeder 2'.

"The charred wire harnesses are P/N's A13P5/A13J5 F230 and A13P6/A13J6 F235. These two harnesses connect to cannon plugs on the SPDU assembly.

"No cause has been determined for the power cable coming loose. Bombardier technical representatives have been notified and *(they)* will evaluate *this issue)."*

AV BATT ESS TRU2
APU BA
TRU2
ESS TRU1
TRU1
AV BATT CHGR
DC EMER FEED 2
SPARE
DC EMER FEED 1
AV BATT MSTR
EMS CDU 1 PWR A
AV BATT CHGR LD
C BOTTOM C6-C1
SPARE
PAX DOOR MOTOR
APU FADEC PWR 2
CLOCK BACKUP
STAIR LTS
AREA LTS
FWD MAINT LTS
B CENTER B7-B1
AV BATT DHR BU
L HYD SOV
APU FIRE SOV
FIREX CH B
A TOP A7-A1





Part Total Time: 2,002.5 hours

Cessna: U206F; Trim Tab Actuator Failure; ATA (N/A)

(Transport Canada provides the following Civil Aviation Safety Alert.)

Transport Canada Transports Canada

Document No. /Document n° : CASA 2011-06
Date : 2011-10-18
Page : 1 of/de 5

CIVIL AVIATION SAFETY ALERT

ALERTE À LA SÉCURITÉ DE L'AVIATION CIVILE

ATTENTION:

Owners and Maintainers of Cessna 206 Aeroplanes

À L'ATTENTION DE :

Propriétaires et spécialistes de la maintenance des aéronefs des modèles 206 de Cessna

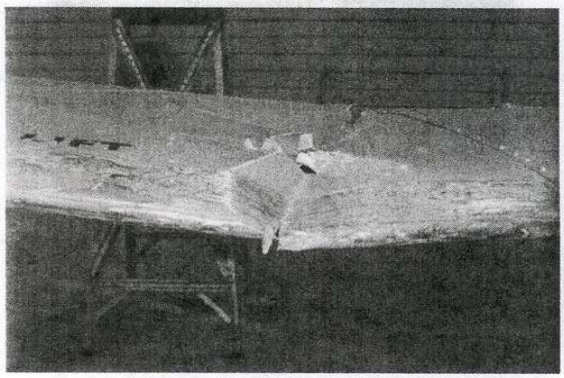
ELEVATOR TRIM ACTUATOR – FAILURE CESSNA U206F

PURPOSE:

This CASA is issued to inform owners and maintainers of Cessna U206 series aeroplanes of a potential unsafe condition regarding corrosion of the Elevator Trim Actuator.

BACKGROUND:

Transport Canada Civil Aviation (TCCA) has received a Service Difficulty Report (SDR) describing an in-flight failure of the threaded rod end of the trim tab actuator (P/N 1260074-1). The threaded rod end fractured and separated from the actuator assembly which then jammed the elevator assembly. When the jam cleared, a serious tailplane flutter occurred that caused major damage to the elevator, elevator trim tab and the horizontal stabilizer.



A damaged R/H Horizontal Stabilizer

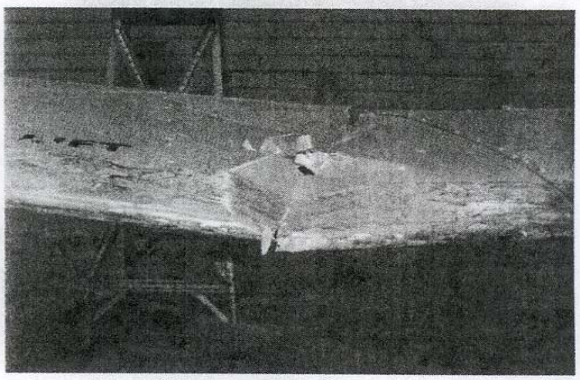
RUPTURE DU VÉRIN DU COMPENSATEUR DE PROFONDEUR D'UN CESSNA U206F

OBJET :

La présente Alerte à la sécurité de l'Aviation civile (ASAC) vise à informer les propriétaires et les spécialistes de la maintenance d'aéronefs Cessna U206 de la présence d'un danger potentiel inhérent à la corrosion du vérin du compensateur de profondeur.

CONTEXTE :

Transports Canada, Aviation civile (TCAC) a reçu un Rapport de difficultés en service (RDS) signalant la rupture en vol de l'extrémité de la tige filetée du vérin du compensateur de profondeur (réf. 1260074-1). Une fois fracturée, l'extrémité de la tige filetée s'est détachée du vérin, qui a ensuite coincé la profondeur. Après décoinçage, l'empennage horizontal s'est mis à battre intensément, ce qui a causé d'importants dommages à la profondeur, au tab de compensation de la profondeur et au stabilisateur.



Un stabilisateur de droite endommagé

- RDIMS Document number / Numéro du document du SGDDI : 5537310
- File Classification Number / Numéro de dossier de classification : Z 5000-35

(For internal use only - Pour usage interne seulement)

Canada

Shortly after departure, the pilot noticed that only limited elevator authority was available. To prevent impending the airframe stall, the pilot increased the engine power and pushed on the control column to get the nose of the aeroplane down. The pilot suddenly heard a loud noise, which was immediately followed by significant airframe vibrations. Fortunately, the pilot was able to regain enough elevator (pitch) authority to execute a forced landing at the nearby airfield.

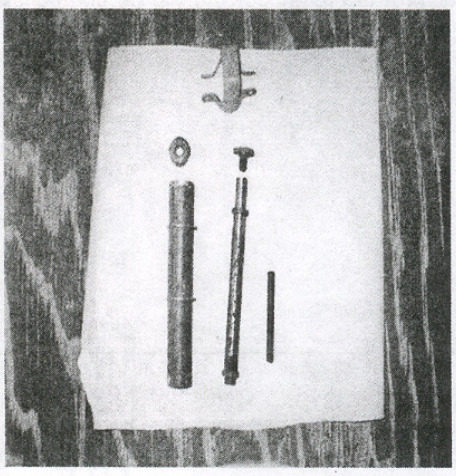
Once the elevator jam cleared itself, the fractured rod end (still attached to the pushpull tube) began to thrash and flail about, causing significant damage to the tail section. The tailplane "flutter" (unstable oscillations) became so severe that both the front and rear spars of the R/H horizontal stabilizer completely fractured. Although, the R/H elevator assembly hinges were still attached, the R/H elevator and horizontal stabilizer assemblies were severely bent, twisted and buckled.

A follow-up investigation found that the threaded rod end (P/N 0310362-5) of the elevator trim tab actuator had completely fractured. The threaded rod end is mated into a long screw (tube) assembly (P/N 1260049-1) that fits inside the body of the actuator assembly (P/N 1260074-1). When the fracture occurred, the now failed trim rod managed to jam the R/H elevator to the down position. Considerable post-fracture damage such as pounding, rubbing and scratching was evident.

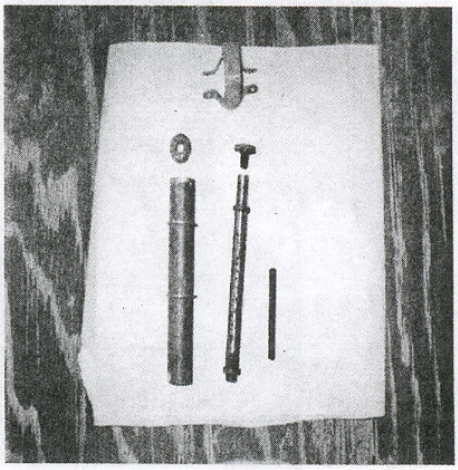
Peu après le départ, le pilote a remarqué qu'il n'avait pas une pleine maîtrise de la profondeur. Pour éviter un décrochage imminent, le pilote a augmenté la puissance du moteur et a poussé sur le volant pour mettre son aéronef en piqué. Le pilote a soudainement entendu un violent bruit immédiatement suivi de fortes vibrations de la cellule. Fort heureusement, le pilote a réussi à reprendre suffisamment la maîtrise de la profondeur (du tangage) pour effectuer un atterrissage forcé à un aérodrome des environs.

La profondeur s'étant décoincée d'elle-même, l'extrémité de la tige fracturée (toujours fixée au tube à double effet) s'est mise à s'agiter et à battre, causant d'importants dommages à l'empennage. Les battements (ou oscillations instables) de l'empennage horizontal ont pris une ampleur telle que les longerons avant et arrière du stabilisateur droit se sont complètement fracturés. Les articulations de la profondeur droite avaient beau être toujours en place, il n'empêche que la profondeur et le stabilisateur de droite ont été fortement pliés, tordus et déformés.

L'enquête qui a suivi a permis de découvrir que l'extrémité de la tige filetée (réf. 0310362-5) du vérin du tab de compensation de la profondeur s'était entièrement rompue. Cette extrémité de la tige filetée est raccordée à un long tube faisant office de vis (réf. 1260049-1) qui est logé à l'intérieur du corps du vérin (réf. 1260074-1). Au moment de la rupture, la tige du compensateur maintenant libre de se déplacer est allée coincer la profondeur droite en position abaissée. Il y avait présence de très importants dommages postérieurs à la rupture sous forme de martèlement, de frottement et d'égratignures



A disassembled R/H Elevator Trim Actuator Assembly



Un vérin du compensateur de profondeur droite démontée

The subject actuator assembly was purchased by the owner as being newly overhauled in August of 2003 from a local source, however, the time since new (TSN) is unknown.

En août 2003, le propriétaire de l'aéronef s'était adressé à un vendeur local pour acheter le vérin en question comme une pièce nouvellement révisée; toutefois, le nombre d'heures d'utilisation depuis la mise en service initiale (TSN) est inconnu.

Currently, there are two different actuator assemblies available. The subject aeroplane was configured with the older-style actuator that is clamped to a bracket and attached to the rear spar of the horizontal stabilizer. The newer style trim tab actuator (P/N 1260149-1) has a grease nipple on the actuator body for ease of lubrication and is secured onto the elevator rear spar position using 4 bolts.

À l'heure actuelle, deux vérins différents sont disponibles. L'aéronef en question était équipé du vérin de l'ancienne conception qui est fixé à une ferrure et attaché au longeron arrière du stabilisateur. Le vérin du tab du compensateur de nouvelle conception (réf. 1260149-1) est muni d'un graisseur sur le corps du vérin pour en faciliter la lubrification et est fixé en position sur le longeron arrière de la profondeur à l'aide de 4 boulons.

For additional information, please refer to Cessna Single Engine Service Letter SE73-25 regarding free play limits, cleaning, inspection and lubrication instructions.

Pour de plus amples renseignements, consulter la *Cessna Single Engine Service Letter* SE73-25 traitant des limites de jeu ainsi que des instructions de nettoyage, d'inspection et de lubrification.

Both types of actuators are disassembled, inspected and lubricated and/or replaced during the scheduled 1000 hour/3 year overhaul inspection.

Les deux types de vérin sont démontés, inspectés et lubrifiés et/ou remplacés pendant les révisions planifiées aux 1000 heures ou aux 3 ans.

The Canadian Transportation Safety Board Engineering Report concluded that the threaded rod failed in reverse bending fatigue (high cycle – low stress) at the 1st or 2nd thread from the shank. The actuator was installed in the overhaul condition in August of 2003 at 7477.5 total airframe hours. The failure occurred at 10 303 total airframe hours; thus the trim tab actuator assembly was in service for 2825.5 flight hours since overhaul. During the period of 6 years, the actuator assembly was visually inspected and checked for freeplay every 50-flight hours in accordance with the operator's own specific requirements. There were no visible defects noted, nor any replacement recorded in the aircraft records.

Le Rapport de laboratoire technique du Bureau de la sécurité des transports (BST) du Canada a conclu que la tige filetée s'était rompue à la suite d'une fatigue en flexion inversée (cycle élevé – contrainte faible) au premier ou au deuxième filet de la tige. Le vérin révisé avait été posé en août 2003 à un total de 7477,5 heures cellule. La rupture s'est produite à 10 303 heures cellule, ce qui veut dire que le vérin du tab du compensateur totalisait 2825,5 heures de service depuis sa dernière révision. Durant ces six ans, le vérin avait été inspecté visuellement et son jeu vérifié aux 50 heures de vol, conformément aux propres exigences particulières de l'exploitant. Aucune défectuosité visible n'a été constatée, et aucun remplacement n'avait été consigné dans les dossiers de l'aéronef.

The TSB Report also concludes that the chemical composition and thread dimensions of the trim tab actuator screw were in agreement with the manufacturers' specifications. Traces of corrosion were found on the threaded rod end and on the outer surface of the screw indicating moisture ingress. Multiple origin sites of reverse bending fatigue suggested that it was not a surface defect that caused the initial fatigue, but rather a general stress concentration in the thread root.

Le rapport du BST a également conclu que la composition chimique et les dimensions des filets de la vis du tab du compensateur respectaient les spécifications du constructeur. Des traces de corrosion ont été découvertes sur l'extrémité de la tige filetée et à la surface extérieure de la vis, signe d'une pénétration d'humidité. Les multiples endroits d'origine de la fatigue en flexion inversée laissent penser que ce n'est pas une défectuosité en surface qui a causé la fatigue initiale, mais plutôt une concentration générale de contraintes au fond du filet.

Cessna Aircraft Company agrees mostly with the TSB analysis and conclusions. Cessna stated that significant corrosion was found on the internal and external threaded screws and the grease showed evidence of old-age and water content. This raises the possibility of corrosion related fatigue having occurred in the initial stages of cracking on the elevator tab screw.

La Cessna Aircraft Company est en majeure partie d'accord avec l'analyse et les conclusions du BST. Cessna a déclaré que d'importantes traces de corrosion avaient été découvertes sur les vis à filet internes et externes et que la graisse présentait des signes de vieillissement et des traces d'eau, ce qui soulève la possibilité d'une fatigue reliée à la corrosion qui se serait produite dans les premières étapes de la fissuration de la vis du tab de profondeur.

RECOMMENDED ACTION:

Transport Canada Civil Aviation (TCCA) recommends that owners, operators and other responsible agencies closely follow the manufacturers maintenance instructions.

Whenever actuator disassembly is required, maintenance personnel need to closely examine the threaded rod for damaged threads or dirt particles. It is also critical to closely examine the threaded rod and its mating screw for wobble/binding and corrosion and carry out the free play check. It is important to note that whenever it is necessary to install new bearings that maintainers carefully drill the bearing so the drill will emerge from the existing hole on the opposite side of the actuator housing. If these holes are drilled oversized, then misalignment/wobble of the threaded rod could induce stress and result in fracture of the threaded rod.

Mechanical failure of any flight control linkage can result in loss of control and severe "flutter" that can significantly overstress the airframe. In this case, a catastrophic event almost occurred as the R/H horizontal stabilizer and elevator had nearly separated from the aeroplane.

Defects, malfunctions and failures occurring on aeronautical products are to be reported to Transport Canada, Continuing Airworthiness in accordance with CAR 521 mandatory Service Difficulty Reporting requirements.

MESURE RECOMMANDÉE :

Transports Canada, Aviation civile (TCAC) recommande aux propriétaires, aux exploitants et aux autres organismes responsables de bien respecter les instructions de maintenance des constructeurs.

À chaque fois qu'il y a démontage d'un vérin, le personnel de maintenance se doit d'examiner attentivement la tige filetée à la recherche de filets endommagés ou de particules de saleté. Il est également de la plus haute importance d'examiner de près la tige filetée et ses vis d'accouplement à la recherche de battement axial/ de blocage ainsi que de corrosion, et de vérifier le jeu. Il est important de noter que s'il est nécessaire d'installer de nouveaux paliers, le personnel de maintenance doit percer avec soin le palier de manière que la mèche sorte du trou existant du côté opposé du logement du vérin. Si les trous percés sont trop grands, un mauvais alignement ou un battement axial de la tige filetée risque de générer des contraintes et d'entraîner une rupture de la tige filetée.

Toute défaillance mécanique de la tringlerie des commandes de vol peut provoquer une perte de maîtrise et un important « battement » qui va soumettre la cellule à de fortes contraintes. Dans le présent cas, un événement catastrophique a failli se produire, le stabilisateur et la profondeur de droite s'étant presque détachés de l'aéronef.

Les défectuosités, les mauvais fonctionnements et les pannes de produits aéronautiques devraient être signalés au Maintien de la navigabilité aérienne de Transports Canada, conformément aux exigences du RAC 521 qui obligent à transmettre des rapports de difficultés en service.

CONTACT OFFICE:

For further information, contact a Transport Canada Center, or Barry Caldwell, Continuing Airworthiness, Ottawa at 613-952-4357, facsimile 613-996-9178, or email CAWWEBFeedback@tc.gc.ca

Note:

For the electronic version of this document, please consult the following Web address: **www.tc.gc.ca/CivilAviation/certification/menu.htm**

For the Director, National Aircraft Certification

BUREAU RESPONSABLE :

Pour obtenir davantage de renseignements communiquer avec un Centre de Transports Canada ou avec Barry Caldwell, Maintien de la navigabilité aérienne, à Ottawa, téléphone 613-952-4357 télécopieur 613-996-9178 ou courrier électronique CAWWEBFeedback@tc.gc.ca.

Nota :

La version électronique de ce document se trouve à l'adresse Web suivante : **www.tc.gc.ca/aviationcivile/certification/menu.htm**

Pour le directeur, Certification nationale des aéronefs,

Derek Ferguson
Chief, Continuing Airworthiness
Chef, Maintien de la navigabilité aérienne

THE TRANSPORT CANADA CIVIL AVIATION SAFETY ALERT (CASA) IS USED TO CONVEY IMPORTANT SAFETY INFORMATION AND CONTAINS RECOMMENDED ACTION ITEMS. THE CASA STRIVES TO ASSIST THE AVIATION INDUSTRY'S EFFORTS TO PROVIDE A SERVICE WITH THE HIGHEST POSSIBLE DEGREE OF SAFETY. THE INFORMATION CONTAINED HEREIN IS OFTEN CRITICAL AND MUST BE CONVEYED TO THE APPROPRIATE OFFICE IN A TIMELY MANNER. THE CASA MAY BE CHANGED OR AMENDED SHOULD NEW INFORMATION BECOME AVAILABLE.	*L'ALERTE À LA SÉCURITÉ DE L'AVIATION CIVILE (ASAC) DE TRANSPORTS CANADA SERT À COMMUNIQUER DES RENSEIGNEMENTS DE SÉCURITÉ IMPORTANTS ET CONTIENT DES MESURES DE SUIVI RECOMMANDÉES. UNE ASAC VISE À AIDER LE MILIEU AÉRONAUTIQUE DANS SES EFFORTS VISANT À OFFRIR UN SERVICE AYANT UN NIVEAU DE SÉCURITÉ AUSSI ÉLEVÉ QUE POSSIBLE. LES RENSEIGNEMENTS QU'ELLE CONTIENT SONT SOUVENT CRITIQUES ET DOIVENT ÊTRE TRANSMIS RAPIDEMENT PAR LE BUREAU APPROPRIÉ. L'ASAC POURRA ÊTRE MODIFIÉE OU MISE À JOUR SI DE NOUVEAUX RENSEIGNEMENTS DEVIENNENT DISPONIBLES.*

- RDIMS Document number / Numéro du document du SGDDI : 5537310
- File Classification Number / Numéro de dossier de classification : Z 5000-35
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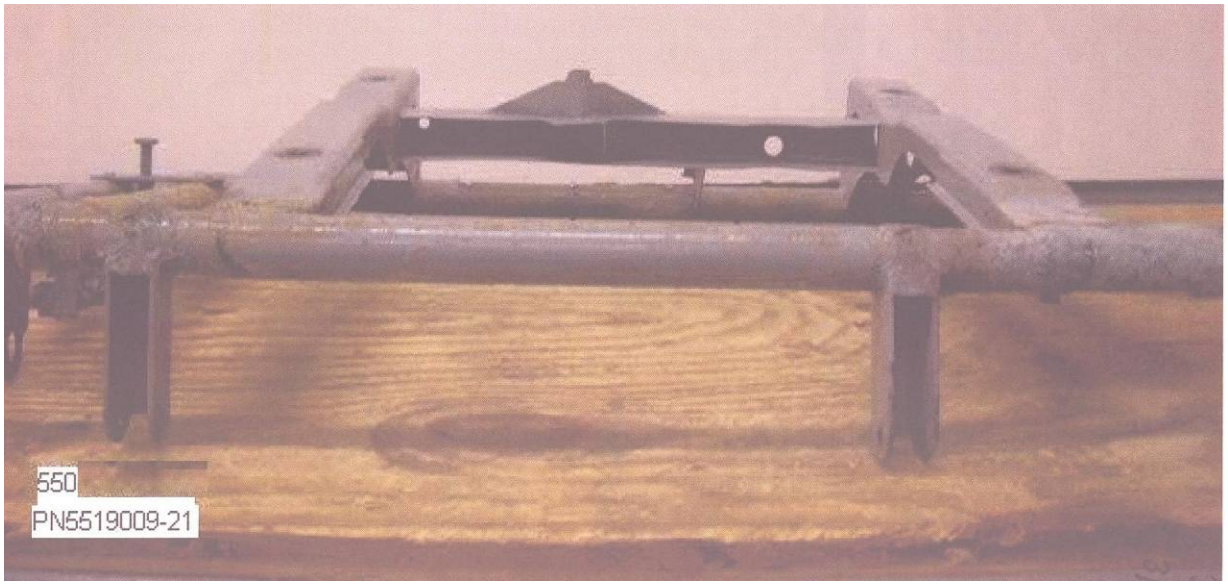
Part Total Time: (N/A)

Cessna: 550; Cracked Seat Base Assembly; ATA 2510

(Note the next Alerts entry for a similar report—Ed.)

"The upper Seat Base Assembly *(P/N 5519015—15)* was found cracked at the chair back attach points," states this repair station mechanic. "Stress on the chair back and metal fatigue are the probable cause. Also *(observed)* was a previous, inappropriate repair.

"This chair was repaired in accordance with STC ST01042WI." *(Seat base P/N: 5519009-21.)*



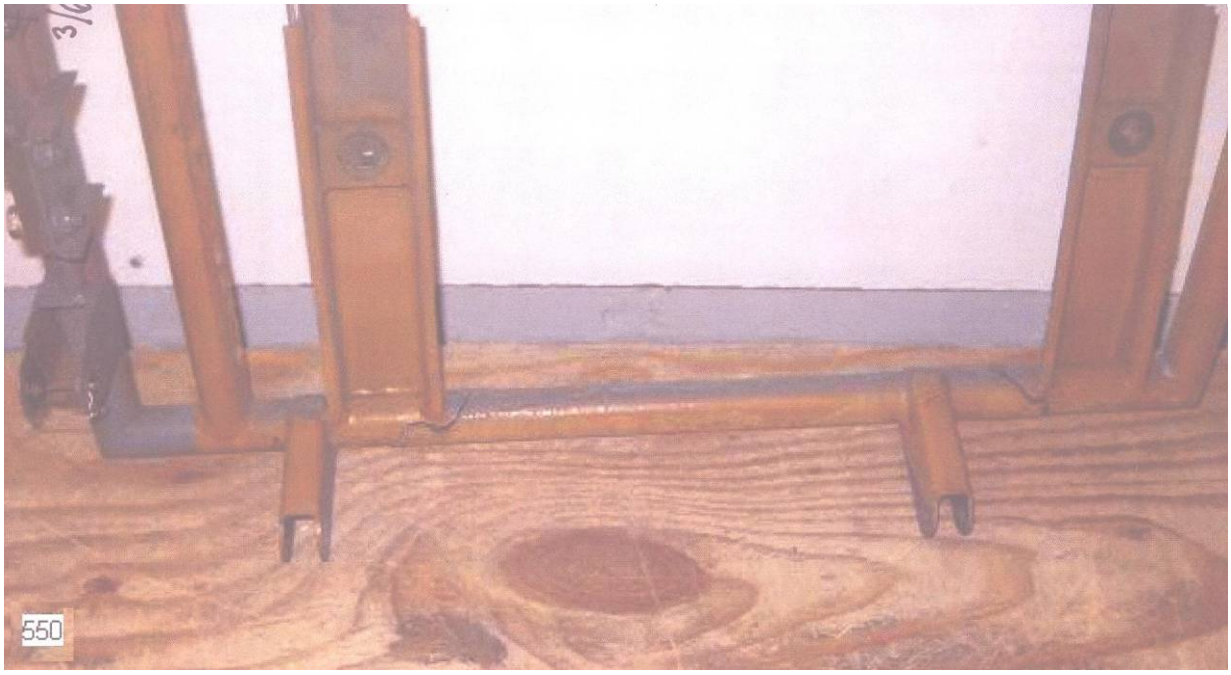
(This -21 P/N reflects thirteen times in the SDRS database.)

Part Total Time: (unknown)

Cessna: 550; Cracked Seat Base Assembly; ATA 2510

The previous *Alerts* submitter provides another seat defect report from a different airplane. "The upper Seat base assembly *(P/N 5519015-16)* was found cracked at the chair back attach points *(seat base P/N: 5519009-22).* Metal fatigue and stress on the chair back is the probable cause. This chair was repaired in accordance with STC STO1042WI."

(Note: extra "plywood" has been eliminated from the following photos to save a little space—Ed.)



(The -22 P/N is found in the SDRS database eleven times.)

Part Total Time: (unknown)

Cessna: 550B; Failed Landing Gear Retraction; ATA 3230

A submission from a corporate charter operation reads, "After departure from *(the airport)* the crew was unable to retract the landing gear. The left main gear initially retracted—then returned to a down and locked position. The right *(main gear)* and nose landing gear operated normally. After completing the gear malfunction checklist, the crew returned to *(the airport)* for a normal approach and landing.

"Upon inspection, the cable for the emergency release on the left main gear was found to be adjusted too tight."

(The SDRS database has six entries for this aircraft's gear up-lock actuator: P/N: 5527504-2.)

Part Total Time: 4,375.5 hours

Cessna: 560; Fuel Ejector Contamination; ATA 7313

(This report references a Pratt and Whitney 535A engine.)

"After a normal start," states this mechanic, "the L/H power lever was advanced to 'taxi'—and when retarded slightly to adjust power setting, the 'low fuel pressure' annunciator was noted to be illuminated briefly, then followed by the 'L/H Fuel Pump On' annunciator. Turning the electric fuel pump switch to 'off' and back to 'normal' extinguished the 'L/H Fuel Pump On' annunciator. The throttle lever was advanced and retarded as before—and the problem repeated itself. Conferring with Cessna Citation technical representatives, it was suggested to inspect the engine fuel filter (which was done). No contaminates were found. The fuel pump pressure switch (P/N 9912033-2) was swapped Right to Left, but the problem did not follow. These were returned to their normal positions. Cessna sent a maintenance team to defuel, inspect, and troubleshoot the problem. Their results: a small plastic fragment was found restricting the output of the L/H fuel ejector (jet) pump (P/N 9912190-5). The aircraft was refueled, operationally and leaked checked (okay), and returned to service. As of this writing, the *(plastic)* particle and its source have not been identified. The fuel control was recently replaced on the L/H engine—this may have been the source as it provides the motive flow fuel pressure to the ejector."

Part Total Time: 850.0 hours

Diamond: DA20-C1; Cracked Nose Landing Gear Forks; ATA (N/A)

(Transport Canada provides the following Civil Aviation Safety Alert.)

Transport Canada Transports Canada

Document No. /Document n° : CASA 2011-07
Date : 2011-10-21
Page : 1 of/de 2

CIVIL AVIATION SAFETY ALERT

ALERTE À LA SÉCURITÉ DE L'AVIATION CIVILE

ATTENTION:

Owners and Maintainers of Diamond Aircraft Industries Inc., aeroplane models DA20-A1 and DA20-C1

À L'ATTENTION DE :

Propriétaires et spécialistes de la maintenance des aéronefs des modèles DA20-A1 et DA20-C1 de Diamond Aircraft Industries Inc.

NOSE LANDING GEAR FORK ASSEMBLY - INSPECTION / REPLACEMENT

INSPECTION / REMPLACEMENT DE LA FOURCHE DE TRAIN AVANT

PURPOSE:

This Civil Aviation Safety Alert (CASA) is issued to inform owners and maintainers of a potential unsafe condition regarding cracking of the nose landing gear fork (NLG) assembly.

OBJET :

La présente Alerte à la Sécurité de l'Aviation Civile (ASAC) est publiée pour informer les propriétaires et les spécialistes de la maintenance au sujet d'une situation potentiellement dangereuse à l'égard du fissurage de la fourche du train avant.

BACKGROUND:

Cracks have been discovered on the NLG fork assembly, part number (P/N) 20-3220-08-00, during routine NLG inspections. The cracks appear just above the axle hole on the cut out flange. A review of the Service Difficulty Report Database from 2005 to 2010 has revealed 10 reports concerning this issue.

In order to better detect cracking of the NLG fork assembly, Diamond Aircraft Industries has revised their DA20-A1 and DA20-C1 Aircraft Maintenance Manual Chapter 05-20-00, Scheduled Maintenance Checks. These changes require more frequent and more detailed inspections. Furthermore, Diamond offers a more robust fork assembly, P/N 20-3220-08-00_1, as a replacement for the original P/N 20-3220-08-00. The new part will be installed on new production models and supplied for future procurement orders.

Further detail on this product improvement is available from Diamond Service Information Letters SIL20A1-008 and SIL20C1-005 or by contacting Diamond Aircraft Industries Inc. at www.diamondaircraft.com.

CONTEXTE :

On a découvert des fissures sur la fourche de référence (réf.) 20-3220-08-00 du train avant lors d'inspections régulières du train avant. Les fissures se trouvaient juste au-dessus du trou d'essieu sur la bride ajourée. Un examen de la base de données des rapports de difficultés en service de 2005 à 2010 a révélé l'existence de 10 rapports relatifs à ce problème.

Afin de mieux déceler les fissures de la fourche du train avant, Diamond Aircraft Industries a modifié le chapitre 05-20-00, Vérifications de maintenance planifiée, du manuel de maintenance de ses aéronefs DA20-A1 et DA20-C1. Ces modifications exigent des inspections plus fréquentes et plus approfondies. De plus, Diamond offre une fourche réf. 20-3220-08-00_1 plus robuste en remplacement de la fourche d'origine réf. 20-3220-08-00. La nouvelle pièce équipera les nouveaux modèles de série et sera livrée dans les prochaines commandes d'approvisionnement.

On peut obtenir de plus amples renseignements sur les améliorations apportées à ce produit dans les bulletins d'information sur l'entretien de Diamond SIL20A1-008 et SIL20C1-005 ou en contactant Diamond Aircraft Industries Inc. à l'adresse suivante : www.diamondaircraft.com.

RDIMS Document number / Numéro du document du SGDDI : 6572085

Internal Classification Number / Numéro du dossier de classification : Z 5000-35
(For internal use only - Pour usage interne seulement)

Canada

RECOMMENDED ACTION:

Transport Canada Civil Aviation (TCCA) recommends aeroplane owners and maintainers acquaint themselves with and adhere to the changes in Diamond's revised inspection schedule. TCCA also recommends aeroplane owners replace their original NLG fork assembly with the improved part.

MESURE RECOMMANDÉE :

Transports Canada, Aviation civile (TCAC) recommande fortement à tous les propriétaires et exploitants visés de prendre connaissance des modifications apportées au calendrier d'inspection de Diamond et de s'y conformer. TCAC recommande également aux propriétaires visés de remplacer la fourche de train avant d'origine par la nouvelle fourche améliorée.

CONTACT OFFICE:

For more information concerning this issue, contact Robert Dixon, Accident/Incident Investigation, Continuing Airworthiness, National Aircraft Certification in Ottawa, by telephone at 613-952-4308, by fax at 613-996-9178 or by e-mail at robert.dixon@tc.gc.ca.

BUREAU RESPONSABLE :

Pour davantage de renseignements à ce sujet, veuillez communiquer avec un Centre de Transports Canada ou avec Robert Dixon, Enquêtes des accidents et incidents, Maintien de la navigabilité, Certification nationale des aéronefs à Ottawa, par téléphone au 613-952-4308, par télécopieur au 613-996-9178 ou par courriel à robert.dixon@tc.gc.ca.

Derek Ferguson
Chief, Continuing Airworthiness
Chef, Maintien de la navigabilité aérienne

THE TRANSPORT CANADA CIVIL AVIATION SAFETY ALERT (CASA) IS USED TO CONVEY IMPORTANT SAFETY INFORMATION AND CONTAINS RECOMMENDED ACTION ITEMS. THE CASA STRIVES TO ASSIST THE AVIATION INDUSTRY'S EFFORTS TO PROVIDE A SERVICE WITH THE HIGHEST POSSIBLE DEGREE OF SAFETY. THE INFORMATION CONTAINED HEREIN IS OFTEN CRITICAL AND MUST BE CONVEYED TO THE APPROPRIATE OFFICE IN A TIMELY MANNER. THE CASA MAY BE CHANGED OR AMENDED SHOULD NEW INFORMATION BECOME AVAILABLE.	*L'ALERTE À LA SÉCURITÉ DE L'AVIATION CIVILE (ASAC) DE TRANSPORTS CANADA SERT À COMMUNIQUER DES RENSEIGNEMENTS DE SÉCURITÉ IMPORTANTS ET CONTIENT DES MESURES DE SUIVI RECOMMANDÉES. UNE ASAC VISE À AIDER LE MILIEU AÉRONAUTIQUE DANS SES EFFORTS VISANT À OFFRIR UN SERVICE AYANT UN NIVEAU DE SÉCURITÉ AUSSI ÉLEVÉ QUE POSSIBLE. LES RENSEIGNEMENTS QU'ELLE CONTIENT SONT SOUVENT CRITIQUES ET DOIVENT ÊTRE TRANSMIS RAPIDEMENT PAR LE BUREAU APPROPRIÉ. L'ASAC POURRA ÊTRE MODIFIÉE OU MISE À JOUR SI DE NOUVEAUX RENSEIGNEMENTS DEVIENNENT DISPONIBLES.*

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(The fork assembly part number has seven entries in the SDRS database—Ed.)

Part Total Time: (N/A)

HELICOPTERS

Bell: 206L (-1,-3,-4); Main Rotor Blade Fatigue Cracking; ATA (N/A)

(Transport Canada provides the following Civil Aviation Safety Alert.)

Transport Canada Transports Canada

Document No. /Document n° : CASA 2011-08
Date : 2011-11-17
Page : 1 of/de 2

CIVIL AVIATION SAFETY ALERT

ALERTE À LA SÉCURITÉ DE L'AVIATION CIVILE

ATTENTION:

OWNERS & OPERATORS OF BELL HELICOPTER TEXTRON CANADA HELICOPTER MODELS 206L, L-1, L-3 AND L-4 AFFECTED BY ASB 206L-09-159 LATEST REVISION.

À L'ATTENTION DE :

PROPRIÉTAIRES ET EXPLOITANTS D'HÉLICOPTÈRES DE BELL HELICOPTER TEXTRON CANADA DE MODÈLES 206L, L-1, L-3 ET L-4 VISÉS PAR LA PLUS RÉCENTE RÉVISION DU BSA 206L-09-159.

Main Rotor Blade separation in-flight.

PURPOSE:

The purposes of this CASA is to disseminate information relevant to Owners and Operators of Bell 206L series helicopters affected by Alert Service Bulletin (ASB) 206L-09-159, "MAIN ROTOR BLADE 206-015-001-107, /-109, /- 111, /-115, /-117, /-119 and -121 CHECK OF." Revision A, dated November 13, 2009.

BACKGROUND:

Transport Canada Civil Aviation (TCCA) was advised of a Bell 206L-1 helicopter accident, August 31, 2008, in the United States.

The National Transportation Safety Board Materials Laboratory conducted a metallurgical examination of the failed main rotor blade. The report indicated that a combination of residual stresses in the spar, and excessive voids between the spar and the blade's internal lead inertia weight, may lead to fatigue cracking in the blade.

TCCA consulted with Bell Helicopter Textron Canada (BHTC) regarding this issue. BHTC completed an extensive investigation and examination of the relevant main rotor blade records and ASB 206L-09-159 was subsequently issued. Considering the findings and results of the investigation and examination of this accident, this main rotor blade failure was considered an isolated incident. Consequently, ASB 206L-09-159 was not mandated by an Airworthiness Directive.

Détachement en vol d'une pale de rotor principal

OBJET :

La présente ASAC vise à distribuer de l'information pertinente aux propriétaires et exploitants des hélicoptères Bell de la série 206L visés par le bulletin service d'alerte (BSA) 206L-09-159, « VÉRIFICATION DE LA PALE DE ROTOR PRINCIPAL 206-015-001-107, /-109, /-111, /-115, /-117, /-119 et -121 ». révision A, en date du 13 novembre 2009.

CONTEXTE :

On a avisé Transports Canada, Aviation civile (TCAC) d'un accident de Bell 206L-1 survenu le 31 août 2008 aux États-Unis.

Le laboratoire des matériaux du National Transportation Safety Board a procédé à un examen métallurgique de la pale du rotor principal qui s'était rompue. Le rapport a indiqué qu'une combinaison de contraintes résiduelles dans le longeron et un vide trop important entre ce dernier et la masse d'inertie interne de la pale peuvent entraîner le fissurage par fatigue de cette dernière.

TCAC a consulté Bell Helicopter Textron Canada (BHTC) concernant ce problème. BHTC a procédé à une vaste enquête et à un examen des dossiers de la pale du rotor principal pertinente et a par la suite publié le BSA 206L-09-159. En tenant compte des constatations et des résultats auxquels ont mené l'enquête et l'examen en rapport avec cet accident, on a considéré la rupture de cette pale de rotor principal comme un incident isolé. Par conséquent, on n'a pas rendu obligatoire le BSA 206L-09 159 au moyen d'une consigne de navigabilité.

- RDIMS Document number / Numéro du document du SGDDI : 7127641
- File Classification Number / Numéro de dossier de classification : Z 5000-35
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Canada

TCCA has recently been advised of another Bell Helicopter 206L accident in Canada, November 9, 2011, with similar main rotor blade failure characteristics as the 2008 blade failure noted above. TCCA is consulting with the investigative authority, the Canadian Transportation Safety Board (CTSB) and BHTC, to collect all relevant information for possible mandatory corrective action.

On a récemment signalé à TCAC un autre accident d'hélicoptère Bell 206L au Canada, survenu le 9 novembre 2011, dans lequel les caractéristiques de rupture d'une pale du rotor principal ressemblaient à celles de l'accident survenu en 2008 mentionné ci-dessus. TCAC consulte actuellement le responsable de l'enquête, le Bureau de la sécurité des transports (BST) du Canada et BHTC, afin de recueillir toute information pertinente pour les possibilités de mesures correctives obligatoires.

TCCA advises that the wipe check with blue food coloring solution, as recommended in ASB 206L-09-159 Rev "A" Part II, is not eligible as an "Elementary Task" as specified in the Canadian Aviation Regulation (CAR) Standard 625, Appendix A, item 29.

TCAC affirme que l'épreuve de contamination par frottis au moyen du colorant alimentaire bleu que recommande la partie II de la rév. A du BSA 206L-09-159 n'est pas admissible comme « travail élémentaire », comme le mentionne le point 29 de l'appendice A de la norme 625 du Règlement de l'aviation canadien (RAC).

RECOMMENDED ACTION:

TCCA strongly recommends that affected main rotor blades be subjected to radiograph inspection (X-Ray) as soon as possible, per Part III of ASB 206L-09-159 Rev "A", dated November 13, 2009.

MESURE RECOMMANDÉE :

TCAC recommande fortement que les pales de rotor principal visées fassent dès que possible l'objet d'une inspection radiographique (aux rayons X), conformément à la partie III de la rév. A du BSA 206L-09-159, en date du 13 novembre 2009.

CONTACT OFFICE:

For more information contact a Transport Canada Centre; or Marcel Gauthier, Continuing Airworthiness, Ottawa, at 613-952-4357, facsimile 613-996-9178, or e-mail CAWWEBFeedback@tc.gc.ca

BUREAU RESPONSABLE :

Pour obtenir davantage de renseignements communiquer avec un Centre de Transports Canada ou avec Marcel Gauthier, Maintien de la navigabilité aérienne, à Ottawa, téléphone 613-952-4357 télécopieur 613-996-9178 ou courrier électronique CAWWEBFeedback@tc.gc.ca.

Note: For the electronic version of this document, please consult the following Web address: **http://www.tc.gc.ca/eng/civilaviation/certification/menu.htm**

Nota : La version électronique de ce document se trouve à l'adresse Web suivante : **http://www.tc.gc.ca/fra/aviationcivile/certification/menu.htm**

For the Director, National Aircraft Certification

Pour le directeur, certification nationale des aéronefs

Derek Ferguson
Chief, Continuing Airworthiness
Chef, Maintien de la navigabilité aérienne

THE TRANSPORT CANADA CIVIL AVIATION SAFETY ALERT (CASA) IS USED TO CONVEY IMPORTANT SAFETY INFORMATION AND CONTAINS RECOMMENDED ACTION ITEMS. THE CASA STRIVES TO ASSIST THE AVIATION INDUSTRY'S EFFORTS TO PROVIDE A SERVICE WITH THE HIGHEST POSSIBLE DEGREE OF SAFETY. THE INFORMATION CONTAINED HEREIN IS OFTEN CRITICAL AND MUST BE CONVEYED TO THE APPROPRIATE OFFICE IN A TIMELY MANNER. THE CASA MAY BE CHANGED OR AMENDED SHOULD NEW INFORMATION BECOME AVAILABLE.	*L'ALERTE À LA SÉCURITÉ DE L'AVIATION CIVILE (ASAC) DE TRANSPORTS CANADA SERT À COMMUNIQUER DES RENSEIGNEMENTS DE SÉCURITÉ IMPORTANTS ET CONTIENT DES MESURES DE SUIVI RECOMMANDÉES. UNE ASAC VISE À AIDER LE MILIEU AÉRONAUTIQUE DANS SES EFFORTS VISANT À OFFRIR UN SERVICE AYANT UN NIVEAU DE SÉCURITÉ AUSSI ÉLEVÉ QUE POSSIBLE. LES RENSEIGNEMENTS QU'ELLE CONTIENT SONT SOUVENT CRITIQUES ET DOIVENT ÊTRE TRANSMIS RAPIDEMENT PAR LE BUREAU APPROPRIÉ. L'ASAC POURRA ÊTRE MODIFIÉE OU MISE À JOUR SI DE NOUVEAUX RENSEIGNEMENTS DEVIENNENT DISPONIBLES.*

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(The -107 part number has ninety entries in the SDRS database—Ed.)

Part Total Time: (N/A)

POWERPLANTS

Pratt & Whitney: PW610F-A; Coked Combustion Liner; ATA 7250

(This engine report references an Eclipse EA500 business jet aircraft.)

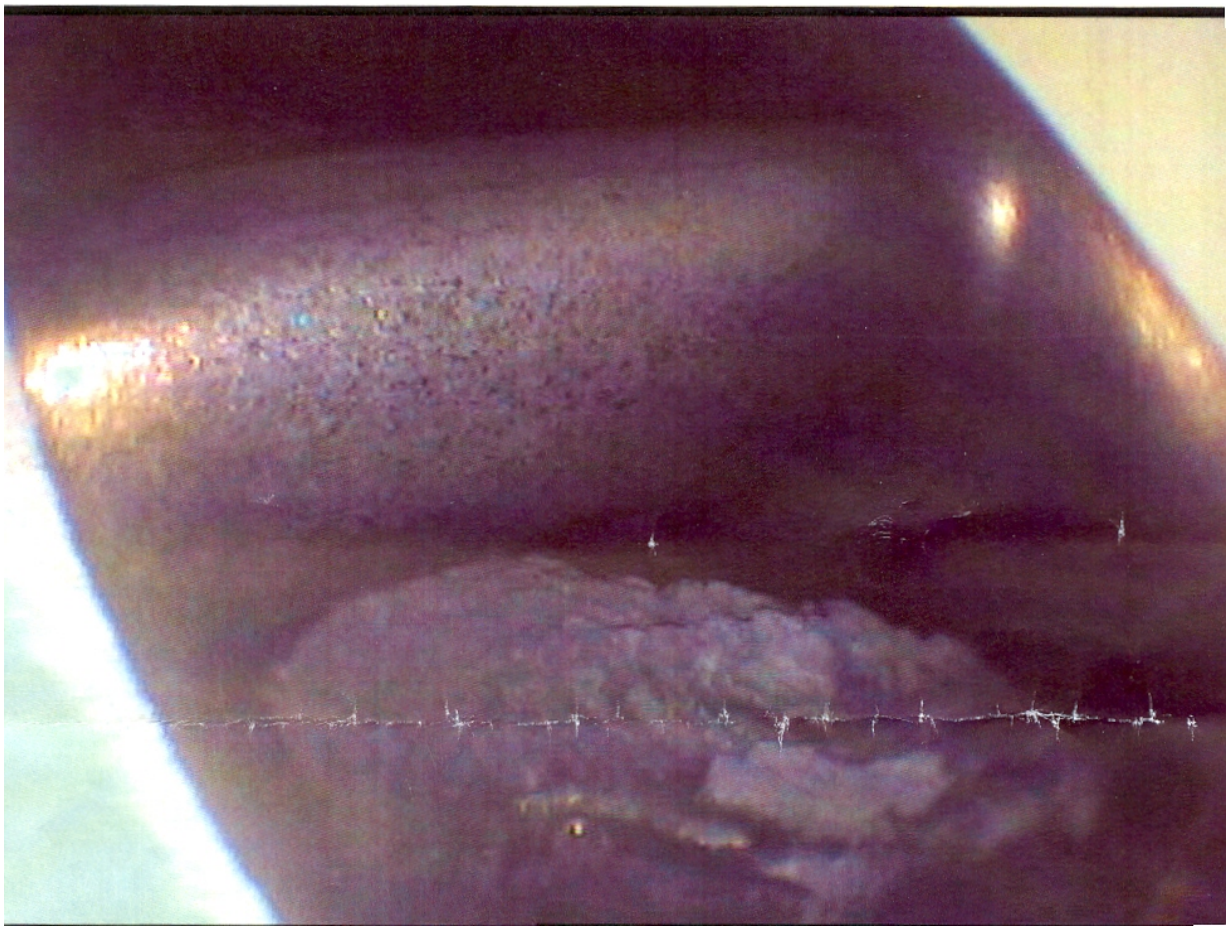
An FAA inspector writes, "*(This aircraft)* developed a problem with the left engine temperature running high, followed by a 'left engine exceed' CAS (Crew Alerting System) message. The pilot reduced power on that engine hoping to reduce its temperature—but the temperature continued to climb. The engine was shut down, and then he notified *(the destination's ATC)* Air Traffic Control center. The aircraft was flying at FL 370 *(flight level 37,000)* when the call was made. The *(flight)* was diverted to an *(alternate)* airport due to the loss of the left engine, landing without incident." *(Here the engine was replaced by Pratt and Whitney.)*

"Airworthiness Directive AD 2008-24-07 limits this aircraft to FL 370—higher altitudes cause this aircraft engine to quickly produce hard carbon buildup (coking)."

(Given the aircraft was operating within its altitude parameters, what caused the coking? Answer: Since this defect report submission early last year, AD 2008-24-07 has been superseded by AD 2011-06-06, lowering the maximum operating altitude to 30,000 feet. Reference:

http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAD.nsf/0/2cc04439cdf7038e8625784f0051ba17/$FILE/2011-06-06.pdf

Only one paper-scanned photo survived multiple e-mail transmissions sufficiently well to show some of the coke (carbon) buildup on what appears to be the turbine's rotor or stator—Ed.)



Part Total Time: 26.8 hours

ACCESSORIES

Aerosekur Floats: *Series* 109-0900-15; Unapproved Repairs; ATA 3212

The Quality Control department for a repair station submitted this report. "*(Our shop)* received several Aerosekur Emergency Flotation Systems used on Agusta A109 helicopters. During inspection/evaluation, unapproved repairs were found to have been incorporated into these emergency float assemblies. In accordance with Aerosekur Component Maintenance Manual (CMM) 25-61-01, section 6, D, Repairs *(it states)*: 'Use no more than three patches per float.' The floats received had up to eleven (and as little as seven) patches on each float. *(Additionally),* the float stowage pack-board/metallic structures had been modified with an unapproved coating/paint, and the Return to Service documentation *(from a previous repair station; March 2009)* referenced technical data that was out of revision (CMM 25-61-01, revision 01). Revision 3 was issued in March 2004."

Part(s) Total Time: (various)

Kelly Alternator: ALU8521; Broken Brush-block Wire; ATA 2421

(This report references a Diamond DA40 aircraft sporting a Lycoming IO360 engine.)

A repair station technician states, "This alternator failed in flight. *(I)* found the brush-block wire broken."

(There are five additional reports for this part number in the SDRS database.)

Part Total Time: 98.8 hours

AIR NOTES

INTERNET SERVICE DIFFICULTY REPORTING (iSDR) WEB SITE

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

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

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

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

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

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

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

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

The SDRS and iSDR web site point of contact is:

Pennie Thompson
Service Difficulty Reporting System, Program Manager
Aviation Data Systems Branch, AFS-620
P.O. Box 25082
Oklahoma City, OK 73125
Telephone: (405) 954-5313
SDRS Program Manager e-mail address: 9-AMC-SDR-ProgMgr@faa.gov

IF YOU WANT TO CONTACT US

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

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

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

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

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

AVIATION SERVICE DIFFICULTY REPORTS

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

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

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

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

Federal Aviation Administration

Service Difficulty Report Data

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

Control Number / Difficulty Date	Aircraft Make / Aircraft Model	Engine Make / Engine Model	Component Make / Component Model	Part Name / Part Number	Part Condition / Part Location
WS9R201110100692				SUN GEAR	DAMAGED
10/10/2011				E3037304	ENGINE
ENGINE CAME IN FOR A CHIP DETECTOR LIGHT AND METAL IN THE OIL. UPON TEARDOWN, FOUND A TOOTH MISSING FROM THE SUN GEAR.					
2011FA0000696		LYC		CARBURETOR	MISOVERHAULED
10/13/2011		O540*		105054	
UPON INSPECTION, CARBURETOR THE THREAD SEALANT HAD BEEN APPLIED TO THE DRAIN PLUG AS WELL AS THE FUEL FITTINGS.					
2011FA0000697		LYC		CARBURETOR	MISOVERHAULED
10/14/2011		O540*		105054	
UPON INSPECTION OF THE CARBURETOR, FOUND THAT THREAD SEALANT HAD BEEN APPLIED TO THE FILTER SCREEN ASSY AS WELL AS THE DRAIN PLUG.					
DT1R2011102701	AGUSTA		AGUSTA	WINDOW	DEPARTED
9/28/2011	AW139		AW139	3G5211A00731	DOOR
CO-PILOT DOOR WINDOW DEPARTED IN FLIGHT AT APPROX 150 KNTS. ACFT WAS SLOWED AND RETURNED TO FIELD WITHOUT INCIDENT. DOOR AND ACFT WERE NOT DAMAGED. WINDOW WAS NOT FOUND. DOOR WAS REMOVED, WIDOW SEAL AREA WAS INSPECTED AND REPAIRED TO PROPER THICKNESS FOR SEAL FIT. NEW SEAL, AND NEW WINDOW, WERE INSTALLED.					
FV7R20111101001	AMD			ELECTRONIC UNIT	FAILED
10/6/2011	FALCON2000			245604128000	
UNIT SMOKING AND EMITTING "BURNING" SMELL. THIS UNIT WAS REMOVED FROM NR M910CS. THE CAUSE OF FAILURE IS ASSIGNABLE TO AN INTERNAL COMPONENT FAILURE Q14 LOCATED ON THE CPU ASSY. ENGINEERING HAS BEGUN A FAILURE ANALYSIS TO IDENTIFY THE ROOT CAUSE. SIMILAR COMPONENTS HAVE BEEN SENT TO THE MFG TO ANALYZE THE PARTS TO SEE IF THEY ARE BUILT IAW SPECIFICATION AND DO NOT PRESENT ANY FORM OF LATENT DEFECT. OPEN					
2011FA0000718	AMTR	ROTAX		LINE	FAILED
10/21/2011	AVIDMARKIV	ROTAX582			OIL COOLER
PROBLEM OCCURED ON SUPPLY LINE TO OIL COOLER ON AN EXPERIMENTAL AIRCRAFT. HOSE CLAMP HOLDING AUTOMOTIVE TYPE OIL HOSE TO BARBED FITTING ON OIL COOLER WAS MOUNTED TO CLOSE TO END OF FITTING. HOSE DEVELOPED A HOLE NEXT TO THE HOSE CLAMP WHICH CAUSED THE OIL TO BE PUMPED OUT.					
2011FA0000705	AMTR			STEERING SYS	DISCONNECTED
10/27/2011	HP14TBRYAN				ZONE 100
MID SHIP STEERING WHEEL LINK BROKE CAUSING AIRCRAFT TO VEER LT ON LANDING.					
2011FA0000674	BEECH	PWC		SHUTOFF VALVE	FAILED

10/10/2011	1900D	PT6A67AG		FUEL SYSTEM

ENROUTE, EXPERIENCED A FAILURE ON THE RT ENGINE. RED MASTER WARNING LIGHT FLASHING, FUEL LOW PRESSURE, OIL LOW PRESSURE LIGHT AND A YAW TO THE RT. FAILURE WAS CONFIRMED WITH INSTRUMENTS. COMPLETED CHECKLIST. AN AIR-START WAS CARRIED OUT ACCORDING TO ABNORMAL CHECKLIST. RESTART WAS SUCCESSFUL & THE FLIGHT COMPLETED WITH BOTH ENGINES. AFTER TOUCHDOWN, DURING TAXI, ENGINE FAILED AGAIN WITH FUEL LOW PRESSURE, OIL LOW PRESSURE ANNUNCIATOR & A AMBER FUEL SHUTOFF VALVE ANNUNCIATOR LIGHT. REPLACED THE FIREWALL SHUTOFF SYS TEE HANDLE ASSY, ACFT HAS CONTINUED TO OPERATE WITH NO FURTHER INCIDENTS.

2011FA0000706	BEECH	LYC	STRUCTURE	MISINSTALLED
10/26/2011	23	O320*		RT WING

ON 1/2011 DURING A WALK AROUND PRIOR TO AN ANNUAL INSPECTION THE RT WING LE WAS FOUND LOOSE. INSPECTION OF THIS AREA DISCLOSED THAT THE LE WAS MISINSTALLED. THE DISCREPANCY WAS CORRECTED.

2011FA0000679	BEECH		ARM	BROKEN
9/17/2011	58		3582517213	NLG

NOSE GEAR ARM FAILED ON EXTENSION OF GEAR ON APPROACH. PILOT REPORTED HEARING A BANG AND COULD NOT GET A NOSE GEAR DOWN INDICATION. AFTER A FLY BY AND ATTEMPTS TO EXTEND THE GEAR, IT WAS DETERMINED THE NOSE GEAR WOULD NOT COME DOWN AND LOCK, ON LANDING, THE NOSE GEAR COLLAPSED AND CAUSED SIGNIFICANT DAMAGE TO THE ACFT INCLUDING PROPELLER STRIKES AND SUDDEN STOPPAGES OF BOTH ENGINES. ACTUAL CAUSE OF PART FAILURE HAS NOT BEEN DETERMINED AT THIS TIME.

2011FA0000723	BEECH		SPAR	CRACKED
11/2/2011	A200			WINGS

INSPECTION OF FLEET ACFT SN IN THE BC AND BD RANGE HAVE REVEALED CRACKING OF THE MAIN WING SPAR WEB IN CARRY THROUGH OPENINGS AND END CAP SUPPORTS. IN THE WHEEL WELL AREA, THERE ARE 2 OPENINGS IN THE WING SPAR WEB FOR FUEL AND HYD LINE PASSAGE. ONE OPENING IS A RECTANGLE APPROX 3" X 6" AND THE OTHER OPENING IS A CIRCULAR HOLE APPROX 1.5" IN DIAMETER. INSP OF THESE AREAS HAVE REVEALED CRACKS EMANATING FROM THE CORNER RADIUS OF THE RECTANGULAR OPENING AND CRACKS EMANATING FOR THE CIRCULAR HOLE. MANY OF THE CRACKS TERMINATE AT AN ADJACENT RIVET HOLE. AS MANY AS 4 CRACKS IAW OPENING HAVE BEEN FOUND, BUT TYPICALLY ONLY 1 OR 2 ARE FOUND. THE OEM REPAIR FOR CRACKS IN THE SPAR WEB OPENINGS HAS BEEN TO BLEND OUT THE CRACKED AREA OR STOP DRILL IT, AND ADD A DOUBLER OVER THE ENTIRE AREA (APPROX 1 SQUARE FOOT). 17 ACFT HAVE BEEN FOUND TO HAVE CRACKS IN THESE AREAS. ADDITIONAL CRACKS HAVE BEEN FOUND IN THE SPAR END CAP SUPPORT, (PN 101-120025-83 LT) AND (101-120025 RT). THE END CAP SUPPORT PROVIDES A STRUCTURAL ATTACHMENT POINT FOR THE LANDING GEAR ACTUATOR FITTING TO THE SPAR. THE CRACKS IN THE SPAR END CAP SUPPORT HAVE PRIMARILY BEEN IN THE LT AND RT VERTICAL CORNERS OF WHERE THE SUPPORT ATTACHES TO THE SPAR. THE CRACKS VARY IN LENGTH FROM .2500" TO 3" LONG. INSP OF THESE AREAS REQUIRES USE OF A BRIGHT LIGHT AND MIRROR. THE OEM HAS NOT APPROVED A REPAIR OF THE SUPPORT AND IT REQUIRES REPLACEMENT IF FOUND CRACKED. 12 ACFT HAVE BEEN FOUND TO HAVE CRACKED SUPPORTS, EITHER ON THE LT OR RT SIDE.

2011FA0000721	BEECH		STRUCTURE	CRACKED
11/1/2011	A200C			MLG WW

DURING TROUBLESHOOTING OF AN OIL LEAK ON ACFT, A CRACK WAS FOUND IN THE UPPER LT WHEELWELL, ABOVE THE LANDING GEAR FENDER. FOUND 3 ADDITIONAL CRACKS IN THE LT WHEELWELL SIDE WALL STRUCTURE LIGHTENING HOLE. ALL 4 CORNERS OF LIGHTENING HOLE WERE CRACKED. THE LOWER FWD CORNER IS CRACKED THROUGH THE OUTER AND INNER DOUBLERS AND YOU CAN VISUALLY SEE SEPARATION. THE OTHER 3 CORNERS ARE CRACKED BUT NOT TO THE SAME DEGREE AS THE FIRST. SIMILAR CRACKS FOUND IN THE RT MAIN GEAR WELL ALSO. INSP OF 14 ADDITIONAL ACFT FOUND CRACKS ON 6 ACFT. CAUSE OF CRACKING IS UNDETERMINED, HOWEVER THESE ACFT HAVE HIGH USAGE AS TRAINERS. ADDITIONALLY, PROP BALANCE ISSUES MAY ALSO BE A CONTRIBUTING FACTOR.

2011FA0000722	BEECH	MCAULY	BETA TUBE	OUT OF ADJUST
11/2/2011	A200C			PROPELLER

THE NR 2 PROPELLER WAS REPLACED WITH AN O/H PROPELLER. GROUND RUNS REVEALED NO DISCREPANCIES AND THE ACFT WAS RETURNED TO SERVICE. THE ACFT FLEW A MISSION AND UPON RETURN THE CREW HAD A PROPELLER REVERSE THRUST WRITE-UP ON THE NR 2 PROPELLER. AFTER TROUBLESHOOTING, IT WAS DISCOVERED THAT A BETA ROD BLOCKING PIN WAS MISSING, UPON FURTHER INVESTIGATION, ALL 4 BETA RODS WERE FOUND TO BE SET AT DIFFERENT LENGTHS. PROPELLER WAS REMOVED AND RETURNED TO O/H FACILITY FOR REPAIR.

2011FA0000729	BEECH	CONT	CIRCUIT BREAKER	FAILED
11/3/2011	F33A	IO520BB	35380132103	BEACON

PILOT REPORTED BEACON LIGHT INOPERATIVE. TROUBLESHOOTING FOUND CIRCUIT BREAKER TO BE AT FAULT. AD 2008-13-17 HAD BEEN COMPLETED 1994 FLIGHT HOURS PRIOR. NO PROBABLE CAUSE OR RECOMMENDATIONS AT THIS TIME.

2011FA0000716	BEECH	CONTROL CABLE	MISROUTED
10/28/2011	V35A		RUDDERVATOR

DURING THE PERFORMANCE OF AN ANNUAL INSPECTION, FOUND THE RT RUDDERVATOR TRIM CONTROL CABLE WAS ROUTED INCORRECTLY AND HAD CUT THROUGH THE RT RUDDERVATOR CONTROL TUBE APPROX 75 PERCENT. THE TUBE ALSO HAS SIGNS OF A CRACK ORIGINATING FROM THE DAMAGED SECTION OF THE TUBE (CUT AREA) AND HAD BEGUN TO BEND AS A RESULT OF WEAKENING OF THE TUBE AS IT WAS CUT. THERE WERE NO MX ENTRIES NOTED IN THE LOG BOOK TO BE ABLE TO DETERMINE WHEN THIS MAY HAVE OCCURRED.

CHIR2011100300001	BOEING	BOEING	BEARING	SPALLED
10/3/2011	234		114DS2511	TRANSMISSION

THE TRANSMISSION SHOP WAS INSPECTING THE AFT TRANSMISSION THAT WAS IN FOR REPAIR. THE MECHANIC FOUND THE INNER RACE OF THE BEARING SPALLED BADLY. THERE WERE NO OTHER INDICATIONS OF ANY OTHER PROBLEMS WITH THE BEARING DUE TO BEING INSTALLED IMPROPERLY.

ABXR2011110700049	BOEING	ATTACH FITTING	CORRODED
11/7/2011	727230	651767313	ZONE 700

DURING NLG REPLACEMENT FOUND OTBD FACE OF NARROW LUG OF NLG DRAG BRACE ATTACH FITTING CORRODED. REPAIRED IAW SRM AND EA NR 2357-5301.

ABXR2011110700050	BOEING	SUPPORT FITTING	CORRODED
11/7/2011	727230	651767640	NLG

DURING NLG REPLACEMENT, FOUND RT NLG SUPPORT FITTING CORRODED AT AFT BOLT HOLE SPOT FACE. REPLACED FITTING IAW SB727-53-0119.

IU6R20111024001	BOEING	MANIFOLD	CRACKED
10/24/2011	737	654484515	PCU

PCU MANIFOLD HOUSING CRACKED AT FILTER BOWL PORT.

2011FA0000698	BOEING	SLIDE	DAMAGED
10/25/2011	737	5A33075	

DURING PRELIMINARY INSPECTION OF EVACUATION SLIDE DAMAGED

DU4R20111018014	BOEING	CREASE BEAM	CORRODED
10/18/2011	737524		BS 967-1006

DURING SCHEDULED INSPECTION, FOUND SEVERAL AREAS OF CORROSION BS 967-1006 CREASE BEAM.

DU4R20111019017	BOEING	SHEAR WEB	CUT
10/19/2011	737524		BS 312

DURING SCHEDULED INSPECTION, FOUND LEFT BS 312, LBL 65 SHEAR WEB CUT.

DU4R20111115018	BOEING		FLOORBEAM	CORRODED
11/15/2011	737524			BS 312

DURING SCHEDULED INSPECTION, FOUND CORROSION ON FWD CABIN FLOORBEAM BS 312, RBL 12 TO LBL 56.

2011FA0000678	CESSNA	CONT	BULKHEAD	CRACKED
9/24/2011	150L	O200A	04500465	PROP SPINNER

THE BULKHEAD WAS INSTALLED ON 5/5/2007, 1476.4 TT. ON LATEST INSPECTION, A CRACK WAS DISCOVERED AT THE BASE OF THE PROPELLER HUB. ON REMOVAL OF PROPELLER, IT WAS DISCOVERED THAT SEVERE CRACK WENT 85 PERCENT THE WAY AROUND THE CENTER OF THE BULKHEAD. SPINNER AND PROPELLER REMAIN UNDAMAGED. THE ORIGINAL BULKHEAD FROM THE FACTORY LASTED 5808.7 HRS BEFORE A CRACK BEGAN TO FORM. THE REPLACEMENT BULKHEAD WAS INSTALLED AND INSPECTED IAW SRM WITH THE PROPER PRELOAD ON THE SPINNER. TO PREVENT CATASTROPHIC FAILURE, MANDATORY PROPELLER REMOVAL SHOULD TAKE PLACE AT LEAST EVERY 200 HOURS OF OPERATION FOR A MORE THOROUGH INSPECTION OF THE BULKHEAD.

2011FA0000688	CESSNA	LYC	TACHOMETER	INOPERATIVE
10/18/2011	152	O235L2C	D11125025	INSTRUMENT PANEL

ACFT IN SHOP FOR ANNUAL INSPECTION. REPLACED MALFUNCTIONING TACHOMETER WITH A NEW TACHOMETER, PN D1-112-5025, SN 25479. FAA-PMA. RAN THE ENGINE--TACHOMETER READINGS WERE VERY SLUGGISH AND WITH SEVERE LAG. TACHOMETER REMOVED FROM THE ACFT AND RETURNED TO THE DISTRIBUTER FOR A REPLACEMENT. ANOTHER NEW TACHOMETER WAS RECEIVED AND INSTALLED. SAME PN WITH SN 25521. TACHOMETER OPERATION APPEARED NORMAL AND THE ACFT WAS RETURNED TO SERVICE. THE OWNER/PILOT REPORTED THAT ON THE WAY TO HIS HOME AIRPORT THIS TACHOMETER WAS NOT RECORDING THE FLIGHT HOURS. HE WAS ADVISED TO REMOVE THE TACHOMETER AND SEND IT BACK TO THE MFG FOR WARRANTY REPAIR. (THE TACH DRIVE CABLE WAS INSPECTED DURING THE ANNUAL INSPECTION, AND FOUND TO BE IN GOOD WORKING CONDITION) SUMMARY: TWO BAD TACHOMETERS IN A ROW! THE MFG WAS CONTACTED AND COULD OFFER NO EXPLAINATIONS, OTHER THAN TO RETURN THE INSTRUMENT FOR REPAIR.

2011FA0000691	CESSNA		LATCH	FAILED
10/19/2011	162			PAX DOOR

RT CABIN DOOR CAME OPEN IN FLIGHT, DOOR WAS LATCHED ON THE GROUND PROIR TO TAKEOFF. BOTH FRONT AND REAR DOOR LATCHES WERE CHECKED BEFORE TAKEOFF BY PUSHING ON CABIN DOOR HARD AFTER LATCHING DOOR. FRONT LATCH FAILED IN FLIGHT, REAR LATCH HELD FOR A SHORT PERIOD OF TIME AND THEN FAILED. THE DOOR LATCH WAS STILL IN THE LATCHED POSITION.

2011FA0000707	CESSNA		LATCH	FAILED
10/2/2011	162			PAX DOOR

RIGHT CABIN DOOR CAME OPEN IN FLIGHT. DOOR WAS LATCHED ON THE GROUND PRIOR TO TAKEOFF. BOTH FRONT AND REAR DOOR LATCHES WERE CHECKED BEFORE TAKEOFF BY PUSHING ON CABIN DOOR, HARD AFTER LATCHING DOOR. FRONT LATCH FAILED IN FLIGHT. REAR LATCH HELD FOR A SHORT PERIOD OF TIME AND THEN FAILED. THE DOOR LATCH HANDLE WAS STILL IN THE LATCHED POSITION.

2011FA0000709	CESSNA		BATTERY	LEAKING
10/24/2011	172			

THE BATTERY IS LEAKING AND CAUSING CORROSION WHICH HAS DESTROYED THE BATTERY BOX. THE DAMAGE HAS OCCURRED SINCE THE LAST ANNUAL INSPECTION. THE CORROSION WAS FOUND BEFORE DAMAGING THE ACFT.

2011FA0000695	CESSNA		CONTROL CABLE	WORN
10/19/2011	172S			AILERON

INSPECTED CONTROL CABLES FOR WEAR IAW SB 11-27-05. CONTROL CABLES WORN AND REPLACED.

NX4R201111010024	CESSNA		CONTROL CABLE	FRAYED
11/1/2011	172S		0510105360	AILERONS

DURING A ROUTINE INSPECTION, THE AILERON PRIMARY CABLE, PN-0510105-360, WAS FOUND WORN AND FRAYED WHERE IT PASSES THROUGH THE SMALL NYLON PULLEYS AT FS 65.33.

NX4R2011110100023	CESSNA	LYC	CONTROL CABLE	FRAYED
11/1/2011	172S	IO360L2A	0510105360	AILERONS

DURING A ROUTINE INSPECTION, THE AILERON PRIMARY CABLE, PN-0510105-360, WAS FOUND WORN AND FRAYED WHERE IT PASSES THROUGH THE SMALL NYLON PULLEYS AT FS 65.33.

M36R20111026004	CESSNA	PWA	VERNATHERM	DETACHED
10/26/2011	208B	PT6A114A	723655	

WHILE IN CRUISE THE PILOT REPORTED ENGINE OIL INDICATORS SHOWING OIL PRESSURE LOWER AND TEMPERATURE HIGHER THAN NORMAL. LATER UPON REMOVAL AND INSPECTION OF THE ENGINE OIL COOLER VERNATHERM IT WAS NOTED THAT IT HAD STARTED TO COME APART DUE TO THE FAILURE OF AN INTERNAL SNAP RING. THIS CAUSED A RESTRICTION OF THE ENGINE OIL COOLING SYS RESULTING IN THE ABNORMAL READINGS. WHEN THE VERNATHERM WAS REPLACED THE ENGINE OIL PARAMETERS RETURNED TO NORMAL.

2011FA0000683	CESSNA	SKIN	CRACKED
10/14/2011	310R	08220009	ZONE 600

A CRACK OF APPROX 8-9 INCHES WAS FOUND IN UPPER INBD RT WING SKIN AND A 6-7 INCH CRACK FOUND IN UPPER INBD OF LT WING SKIN. THIS CRACK WAS LOCATED ON INTERIOR SIDE OF BOTH WING NACELLE LOCKERS, UNDERNEATH THE CARPET, AT INBD SIDE OF RIB WHICH SUPPORTS UPPER MLG SIDE BRACE SUPPORT BRACKET. THE CRACK WAS NOT VISIBLE FROM UNDER SIDE OF SKIN IN WHEEL WELL. THERE IS A CESSNA SB MEB 08-3 WHICH PERTAINS TO THIS AREA, BUT DOES NOT REALLY SPECIFY BY PICTURE PROVIDED IN SB. THE PICTURE SHOWS A LOCATION INBD OF WING NACELLE LOCKER OF APPROX 3 INCHES. THESE CRACKS WERE INTERIOR OF WING NACELLE LOCKER UNDERNEATH THE CARPET. THE CRACKS WERE FOUND DURING THE START OF LANDING GEAR RIGGING CHECK. NOTICE A SMALL SUSPICIOUS PATCH IN BOTH WHEEL WELLS. MOVEMENT OR DEFLECTION OF SKIN WAS NOTICED WHILE APPLYING PRESSURE UPWARD ON SKIN, AFTER FURTHER INVESTIGATION AND CARPE REMOVAL, THESE CRACKS WERE FOUND IN SIDE BOTH WING NACELLE LOCKERS. TECH REP AND ENGINEERING DEPARTMENT ERE NOTIFIED. THEIR RECOMMENDATION FOR REPAIR IS TO REPLACE THE SKIN THAT IS CRACKED. THIS ACFT IS OF HIGH TIME AND SEVERAL YEARS OLD. THE CAUSE IS REALLY UNKNOWN AS TO WHY THE SKINS ARE CRACKING. IT COULD BE FROM MAIN LANDING GEAR IMPROPER RIGGING, OR A RESULT OF A HARD LANDING THAT WAS NOT REPORTED TO ANY MX FACILITY. THERE IS NO INDICATION OF ANY OTHER DAMAGE NOTED IN THE ACFT OR LANDING GEAR AREA. THE LANDING GEAR TENSIONS WERE SLIGHTLY OUT OF RIG, ONE SIDE BEING SLIGHTLY HIGHER, AND THE OPPOSITE SIDE SLIGHTLY LOWER THAN WHAT THE ACFT MM RECOMMENDS. A COMPLETE LANDING GEAR RIGGING WILL BE PERFORMED AFTER ALL REPAIRS HAVE BEEN ACCOMPLISHED.

2011FA0000684	CESSNA	SKIN	CRACKED
10/14/2011	414	08220009	ZONE 500

AFTER FINDING SIMILAR ACFT WITH SIMILAR ISSUES, PERFORMED A VISUAL INSP OF BOTH RT AND LT UPPER INBD RT WING SKIN AND LT WING SKIN FROM WHEEL WELL AREA AND NOTED CRACKS IN SKIN, (APPROX 2-3 INCHES IN LENGTH), IN AREA OF RIB THAT ATTACHES UPPER MLG SIDE BRACE SUPPORT BRACKET. ACCESSED AND REMOVED CARPET FROM INSIDE OF LT WING NACELLE LOCKER TO VISUALLY INSPECT SKIN FROM THE UPPER SIDE OF SKIN AND DETERMINED THERE IS A CRACK APPROX 6 INCHES IN LENGTH JUST OTBD OF RIB. THE VIEW UPPER SIDE OF RT SKIN IS BLOCKED BY AIR CONDITIONER CONDENSER AND PLUMBING. REMOVAL OF AIR CONDITIONER SYS WILL BE REQUIRED TO VIEW SKIN. SB MEB 08-3 AGAIN STATES LOOKING IN AREA FOR CRACKS, BUT THEIR VISUAL PICTURES IN THE SB INFORMS YOU TO INSPECT INBD OF WING NACELLE LOCKER OF APPROX 3 INCHES. THE PROBLEM OR CONDITION FOUND IS ON THE OPPOSITE OF THE RIB LOCATED INSIDE OF WING NACELLE LOCKERS. REPORTS HAVE BEEN MADE AND SENT OFF TO TECH REP AND ENGINEERS. NO WORD HAS COME BACK ON THIS ACFT, BUT OTHER ACFT THAT WAS REPORTED, THEIR RECOMMENDATION WAS TO REPLACE SKIN. SO THAT IS WHAT WE WILL DO TO THIS ACFT ALSO. AT LAST INSPECTION, LANDING GEAR RIGGING TENSIONS WERE CHECKED AND FOUND TO BE WITHIN LIMITS. NO HARD LANDINGS WERE REPORTED BY PILOT. MY RECOMMENDATION IS TO REMOVE CARPET IN WING NACELLE LOCKERS DURING INSPECTIONS OF SB MEB 08-3 IF THEIR IS NO CRACKS NOTED FROM WHEEL WELL AREA. ACFT THAT HAVE AIR CONDITIONING OR FUEL TANKS IN WING LOCKERS WILL REQUIRE SOME OTHER METHOD TO INSPECT TOP SIDE OF SKINS.

2011FA0000760	CESSNA		SHAFT	SHEARED
11/11/2011	550		55651915	FLAP ACTUATOR

FLAP ACTIVATION SHAFT FOUND SHEARED WHILE PERFORMING PHASE 1 INSP TASK 07-51-00-710. FLAP MOTOR OPERATIONAL CHECK. NO OBVIOUS REASONS FOR SHAFT TO SHEAR FOUND. NO OBVIOUS REASON FOR SHAFT TO SHEAR FOUND. NO OTHER DEFECTS NOTED.

2011FA0000727	CESSNA		ANNUNCIATOR	SHORTED
9/13/2011	560CESSNA		991211912	WINDSHIELD OVRHT

WINDSHIELD OVERHEAT ANNUNCIATOR SHORTED INTERNALLY INSIDE THE ANNUNCIATOR PANEL.

CWQR2011110925	CESSNA		TORQUE TUBE	CRACKED
11/9/2011	560CESSNA		55421029	NLG

DURING A SCHEDULED INSPECTION, FOUND THE NLG DOOR TORQUE TUBE CRACKED AT THE MOUNT BOLT PIVOT PLATE. . R & R TORQUE TUBE.

CWQR2011110926	CESSNA		TORQUE TUBE	CRACKED
11/9/2011	560CESSNA		55421029	ZONE 700

DURING A SCHEDULED INSPECTION, FOUND THE NLG DOOR TORQUE TUBE CRACKED AT THE MOUNT BOLT PIVOT PLATE IN 2 PLACES. R & R TORQUE TUBE.

CWQR2011101823	CESSNA		ANGLE	CRACKED
10/18/2011	560XL		665360162	APU COWL

DURING A SCHEDULED MX CHECK, ANGLE WAS FOUND CRACKED THROUGH THE FREE FLOATING LEG INTO THE ANGLE RADIUS, THIS CRACK WAS 4 INCHES FROM THE END OF THE PART. THE ANGLE WAS REPLACED WITH A NEW PART.

CWQR2001101824	CESSNA		ANGLE	CRACKED
10/18/2011	560XL		665360162	APU COWL

DURING A SCHEDULED MX CHECK, ANGLE WAS FOUND CRACKED THROUGH THE FREE FLOATING LEG INTO THE ANGLE RADIUS, THIS CRACK WAS 4.2 INCHES FROM THE END OF THE PART. THE ANGLE WAS REPLACED WITH A NEW PART.

CWQR2011111027	CESSNA		TUBE	CRACKED
11/10/2011	750		671440237	ANTI ICE SYSTEM

CREW REPORTED A LT WING HOT CAS MESSAGE. AFTER REMOVING THE L/E, FOUND LOOSE INSULATION AND TAPE. REMOVED INSULATION AND FOUND 1.59541675 INCH CRACK IN THE TUBE BEND RADIUS. INSTALLED NEW TUBE ASSY.

CWQR2011111028	CESSNA		TUBE	CRACKED
11/10/2011	750		671440238	ZONE 700

CREW REPORTED A LT WING HOT CAS MESSAGE. AFTER REMOVING THE L/E, FOUND LOOSE INSULATION AND TAPE. REMOVED INSULATION AND FOUND 1.85 INCH CRACK IN THE TUBE BEND RADIUS. INSTALLED NEW TUBE ASSY.

2011FA0000702	CIRRUS	CONT	CRANKCASE	CRACKED
10/26/2011	SR20	IO360ES		ENGINE

CRANKCASE CRACKED JUST AFT AND ABOVE NR1 ALTERNATOR MOUNT AREA AND LEAKING.

2011FA0000734	CIRRUS	CONT	PISTON	MISMANUFACTURED
8/26/2011	SR22	IO550N		

IMPROPER PISTON SKIRT MACHINING CAUSED PISTON CONTACT WITH CONNECTING ROD AND CRANK SHAFT. PISTON, PN 654857C. NEED IMPROVED QA IN MACHINING.

2011FA0000700	CIRRUS	CONT	CYLINDER HEAD	CRACKED
10/26/2011	SR22	IO550N	658178A2BP	ENGINE

NR 4 CYLINDER FOUND CRACKED FROM SPARK PLUG HOLE TO FUEL INJECTOR AND LEAKING.

2011FA0000701	CIRRUS	CONT	CYLINDER HEAD	CRACKED
10/26/2011	SR22	IO550N	658178A2BP	ENGINE

NR 6 CYLINDER CRACKED FROM SPARK PLUG HOLE TO FUEL INJECTOR AND LEAKING.

2011FA0000728	CIRRUS	CONT	DISTRIBUTOR GEAR	BROKEN
11/3/2011	SR22	IO550N	10357586	MAGNETO

THIS MAGNETO HAD UNDERGONE A 500 HOUR INSP PRIOR TO FAILURE OF THE COMPONENT SOME 100 TO 150 OPERATING HOURS LATER (AFTER INSPECTION). THIS MAGNETO WAS INSPECTED IAW THE SYSTEM SUPPORT MANUAL. THE MAGNETO WAS OPENED AND THE DISTRIBUTOR GEAR WAS FOUND WITH SEVERAL GEAR TEETH BROKEN AWAY FROM THE GEAR. THE TEETH WERE RETAINED INSIDE THE MAGNETO CASE. NO OTHER PARTS WERE FOUND OUT OF PLACE INSIDE THE MAGNETO CASE. THIS MAGNETO WAS DOCUMENTED TO HAVE APPROX 1000 TOTAL HOURS OF OPERATION.

2011FA0000690	CNDAIR		SIGNAL COND UNIT	FAILED
9/1/2011	CL6002B16		476675120	LT ENGINE

PART WAS RECEIVED DEAD ON ARRIVAL AFTER REPAIR. DURING INSTALL, ALL LT ENGINE DIGITAL INSTRUMENTS AND RT ENGINE LED INSTRUMENTS WERE FULL BRIGHT AND UNCONTROLLABLE ALONG WITH ALL FUEL QUANTITY INDICATIONS EXCEPT FOR TOTALIZER.

EBVD201110040193	CNDAIR		ACTUATOR	WORN
10/4/2011	CL6002B16		60093000114	RT WING TE FLAP

FLAP ACTUATOR FAILED END PLAY CHECK.

EBVD201110040194	CNDAIR		ACTUATOR	WORN
10/4/2011	CL6002B16		60093000116	RT WING TE FLAP

RT WING TE FLAP ACTUATOR FAILED END PLAY CHECK.

2011FA0000724	CNDAIR	GE	BLEED AIR SYS	CONTAMINATED
11/2/2011	CL6002B16	CF34*		

SEVERAL DAYS AFTER A ENGINE COMPRESSOR WASH WAS COMPLETED, IN WHICH THE MM PROCEDURES WERE FOLLOWED FOR ENGINE RUNS AFTER A COMPRESSOR WASH THE ACFT DEPARTED AND AFTER SWITCHING FROM APU BLEED AIR TO ENGINE BLEED AIR THE CABIN FILLED WITH SMOKE FROM RESIDUAL COMPRESSOR WASH SOLUTION.

JR2R2011102600525	CNDAIR		WEB	CRACKED
10/26/2011	CL6002C10		601R31707111	PAX DOOR

PAX DOOR WEB CRACKED AND DEFORMED AT TOP FOLDING STEP. REMOVED AND REPLACED AFT WEB IAW CRJ-700 51-42-06 AND 51-42-10.

JR2R2011102600526	CNDAIR		DIAPHRAGM	CORRODED
10/26/2011	CL6002C10		SH670320754	FUSELAGE

RT DIAPHGRAM FWD OF E&E ACCESS DOOR CORRODED JUST RIGHT OF STRINGER 27. REMOVED AND REPLACED DIAPHGRAM IAW CRJ-700 SRM 51-42-06 AND 51-42-21.

JR2R2011102600527	CNDAIR		DIAPHRAGM	CORRODED
10/26/2011	CL6002C10		SH670320754	FUSELAGE

LT DIAPHGRAM FWD OF E&E ACCESS DOOR CORRODED JUST LEFT OF STRINGER 27. REMOVED AND REPLACED DIAPHGRAM IAW CRJ-700 SRM 51-42-06 AND 51-42-21.

JR2R2011102600528	CNDAIR	DOUBLER	CORRODED
10/26/2011	CL6002C10	0502024T3	FUSELAGE

ANTENNA DOUBLER CORRODED BETWEEN FRAME STATIONS 295 AND 310 IN THE FWD E&E BAY.

JR2R2011103100555	CNDAIR	SEAT TRACK	CORRODED
11/1/2011	CL6002D24	690373851	ZONE 100

LEFT SEAT TRACK NR 6 CORRODED. R & R IAW AMM 53-00-49.

JR2R2011101400465	CNDAIR	ANGLE	CORRODED
10/14/2011	CL6002D24	CC67033292135	FUSELAGE

FS 280 FLIGHTDECK FLOOR LANDING ANGLE CORRODED. REMOVED AND REPLACED FS 280 FLIGHTDECK FLOOR LANDING ANGLE IAW CRJ900 SRM 51-42-21.

JR2R2011101400466	CNDAIR	WEB	CORRODED
10/14/2011	CL6002D24	CC670341706	FUSELAGE

RT 280 WEB CORRODED. REMOVED AND REPLACED RT STA 280 WEB IAW CRJ 900 SRM 53-11-10.

JR2R2011101400467	CNDAIR	WEB	CORRODED
10/14/2011	CL6002D24	SH670320041	FUSELAGE

WEB HAS CORROSION AT STRINGER 20R JUST BELOW SERVICE DOOR OPENING, BETWEEN FRAMES 349.00 AND 333.00. REMOVED AND REPLACED WEB IAW CRJ 900 SRM 51-42-21.

JR2R2011101400468	CNDAIR	WEB	CORRODED
10/14/2011	CL6002D24	SH670320041	FUSELAGE

STRINGER 20R AND WEB HAS CORROSION BETWEEN FRAMES 319.00 AND 310.00 IN FWD E&E BAY. REMOVED AND REPLACED WEB IAW CRJ 900 SRM 51-42-21.

JR2R2011102000478	CNDAIR	STRINGER	CORRODED
10/20/2011	CL6002D24	SH670316341	FUSELAGE

STGR 26L HAS CORROSION BETWEEN FRAMES 295 AND 280 IN THE FWD E&E BAY. REMOVED AND REPLACED STGR 26L FS 280 TO 333 IAW CRJ 900 SRM 51-42-06 AND 51-42-21.

JR2R2011102000490	CNDAIR	STRINGER	CORRODED
10/20/2011	CL6002D24	SH690313581	FUSELAGE

STGR 24R HAS CORROSION BETWEEN FRAMES 349 AND 333 IN THE FWD E&E BAY. REPAIRED STRINGER 24R IAW CRJ900 RO CRJ9-53-0835.

2011FA0000726	DIAMON	ROTAX	ATTACH BOLT	SHEARED
10/18/2011	DA20A1	ROTAX912S3	TAS108	VALVE COVER

THE SINGLE BOLT THAT HOLDS VALVE COVER ON THE NR 2 CYLINDER SHEARED IN FLIGHT. ALL OIL LEFT THE ENGINE. EMERGENCY LANDING IN A FIELD.

2011FA0000699	GULSTM	GARRTT	STRUT	CRACKED
10/26/2011	690B	TPE331*	ES12394	MLG

LEFT MAIN GEAR STRUT WAS FLAT, TRIED TO SERVICE, WHEN WE APPLIED NITROGEN PRESSURE HYDRAULIC FLUID CAME OUT OF A 3 INCH LONG CRACK IN THE STRUT BODY AND BEARING ASSY. AFTER TALKING WITH MFG THEY HAVE NEVER SEEN THIS TYPE OF FAILURE BEFORE.

2011FA0000682	GULSTM	GARRTT	SELECTOR VALVE	FAILED

10/12/2011	G150	TFE73140	71758	THRUST REVERSER

CREW WAS PERFORMING NIGHT PROFICIENCY FLIGHT. UPON 1ST LANDING, AIRCRAFT TAXIED AROUND FOR SECOND TAKEOFF. ON POWER UP FOR TAKEOFF ROLL, THE RIGHT ENGINE THRUST REVERSER HAD AN UNCOMMANDED DEPLOYMENT. CREW ABORTED TAKEOFF. RIGHT REVERSER WOULD NOT STOW. ACFT RETURNED TO HANGAR. TROUBLESHOT REVERSER SYSTEM. FOUND RT T/R SELECTOR VALVE DEFECTIVE. THE SAFETY FEATURE TO PREVENT THE THROTTLE FROM BEING ADVANCED IS CONTROLLED BY THE SELECTOR VALVE WAS ALSO INOPERABLE.

GR4D20111111009	GULSTM		LUG	CORRODED
11/11/2011	GIV		1159CSM2002220	ZONE 300

VERTICAL LUG CORRODED.

GR4D20111111010	GULSTM		ANGLE	CRACKED
11/11/2011	GIV		1159B40799921B	ZONE 200

CAP ANGLE CRACKED.

2011FA0000730	GULSTM		DISPLAY	FAILED
11/3/2011	GV		245604128000	COCKPIT

AFTER 2.5 HOURS OF GROUND AND FLIGHT OPERATION ON 10-21-2011, AN ACRID/SMOKEY ODOR WAS NOTICED IN THE COCKPIT. ALL SYS WERE FOUND TO BE OPERATING NORMALLY. APPROX 40 MINUTES LATER, SMOKE WAS OBSERVED EMANATING FROM THE PILOT'S CMC1100 EDU. THE UNIT WAS THEN IMMEDIATELY POWERED OFF AND REMOVED FROM ITS YOKE MOUNT AND REMOVED FROM THE COCKPIT. AN UNEVENTFUL LANDING WAS PERFORMED AT THE INTENDED DESTINATION. UPON RETURN TO HOME BASE THE UNIT WAS SENT (THE MFG) FOR A COMPLETE INSPECTION AND EVALUATION.

2011FA0000717	MOONEY	CONT	MAGNETO	FAILED
7/7/2011	M20K	TSIO360*	6324	ENGINE

DURING A POST ACFT ACCIDENT ENGINE TEARDOWN IT WAS NOTED THAT THE RT MAGNETO FIRED ERRATICALLY BELOW 1400 RPM. FURTHER INVESTIGATION REVEALED THAT THE DISTRIBUTOR GEAR WAS LOOSE AND THE ROTOR GEAR WAS LOOSE. PILOT REPORTED LOSS OF POWER ON TAKEOFF.

2011FA0000685	PIAGIO		HYDRAULIC SYSTEM	FAILED
10/14/2011	P180			

LOST HYD PRESSURE WHILE RETRACTING LANDING GEAR ON TAKEOFF. AFTER LANDING FOUND C/B POPPED, RESET AND OP CHECKED GOOD ON SEVERAL RETRACT TEST.

5APR2011101477Y96	PILATS	PWA	MOTOR	FAULTY
10/14/2011	PC1245	PT6A67B	9599022126	ZONE 100

THE VCCS SYSTEM WAS REPORTED AS BEING INOP. THE VCCS COMPRESSOR MOTOR WAS FOUND TO BE FAULTY, IT WAS R & R WITH A SERVICEABLE UNIT OF THE SAME P/N IAW CMM 21-00-23, OPS TESTED GOOD.

5APR20111013095	PILATS	PWA	DISPLAY	FAULTY
10/13/2011	PC1245	PT6A67B	066031252500	EADI

THE PILOTS EADI SCREEN FAILS INTERMITTENTLY AND IS "BLOOMING". THE EADI DISPLAY WAS FOUND TO BE FAULTY, IT WAS REPLACED WITH A SERVICABLE UNIT IAW AMM DMC-12-A-34-26-03-00A-920A-A AND TESTED SATISFACTORY IAW AMM DMC-12-A-34-26-00-00A-903B-A.

C41R201111010106	PILATS		DOOR	CRACKED
11/1/2011	PC1247		5791012021	OIL COOLER

DURING ANNUAL INSP, TECH FOUND OIL COOLER FLAPPER DOOR CRACKED AT TOP LT AND RT OTBD RIVETS (1.2" LONG EA) AND RT LOWER OTBD RIVET AREA (.75" LONG). THESE APPEAR TO BE STRESS CRACKS. DOOR REPLACED WITH NEW.

2011FA0000752	PIPER		BUTTON	BROKEN
11/18/2011	PA28181		LW12892	ROCKER SHAFT

ROCKER SHAFT THRUST BUTTON, PN LW12892. 4 OF THE 8 INSTALLED WERE BROKEN WHEN VALVE LOUVERS WERE REMOVED TO CHANGE VALVE LOUVER GASKETS.

2011FA0000687	PIPER	LYC	TRUNNION	CRACKED
10/17/2011	PA28R200	IO360A1A	670411	MLG

DURING A 100 HR. INSPECTION NOTICED THAT RT MLG WAS LOOSE. FURTHER INVESTIGATION REVEALED CRACK IN RT FORWARD TRUNNION FITTING ASSY. REMOVED 4 BOLTS THAT ATTACH TRUNNION FITTING TO WING AND DISCOVERED THAT FITTING WAS COMPLETLY CRACKED AND IN 2 PIECES INSTEAD OF ONE. THE CRACK RAN FORE TO AFT THRU THE ENTIRE FITTING CENTER.

2011FA0000677	PIPER	LYC	THROTTLE CABLE	BROKEN
9/27/2011	PA28R201	IO360A1C	455322	CABLE

DURING GROUND RUN THE PILOT REPORTED AN UNRESPONSIVE THROTTLE. THE ACFT WAS GROUNDED AND BROUGHT INTO THE SHOP FOR INSPECTION. THE THROTTLE CABLE WAS FOUND BROKEN, 4" UP THE CABLE FROM FUEL THROTTLE ATTACH ROD. RECOMMEND DISCONNECTING THE THROTTLE CABEL FROM THE FUEL SERVO AND CHECKING FOR FREEDOM OF MOVEMENT EVERY 100 HRS.

UVVR2011101900019	RAYTHN		TORQUE LINK	BENT
10/18/2011	HAWKER800XP		259UM1117A	MLG

AFTER TOUCHDOWN THE ACFT EXPERIENCED A VIBRATION IN THE LANDING GEAR. PERFORMED "INSPECTION AFTER LANDING GEAR VIBRATION" IAW THE ACFT FLEXIBLE MX SCHEDULE. INSP REVEALED THAT THE LOWER TORQUE LINK WAS BENT ON THE LT MLG SCISSORS ASSY.

2011FA0000703	SKRSKY	PWA	BLADE	CRACKED
8/29/2011	S64E	JFTD12A4A	641520201050	MAIN ROTOR

AT FIRST BIM CHECK, PILOTS REPORTED HEARING A CHIRPING NOISE COMING FROM THE MAIN ROTOR BLADES. INSPECTED BLADES. FOUND THE TIP WEIGHT ON MAIN ROTOR BLADE PROTRUDING THROUGH THE TIP CAP. BLADE WAS REPLACED. OPEN

2011FA0000704	SKRSKY	PWA	BLADES	FRACTURED
6/10/2011	S64E	JFTD12A4A	59602	COMPRESSOR

AFTER ABOUT 1.5 HRS OF FLIGHT, THE PILOTS RETURNED TO LANDING AND SAID THAT THE NR1 ENGINE HAD A HIGH FREQUENCY RUMBLE AND JUST BEFORE LANDING, THE TQ AND EPR GAUGES DECRESED RAPIDLY, WHILE THE ENGINE TEMP AND OIL IND WERE STILL GREEN. AFTER SHUTDOWN, THE INLET OF THE ENGINE WAS CHECKED FOR DAMAGE, NONE WAS FOUND. THE EXHAUST WAS CHECKED, METAL PARTICLES WERE FOUND ALONG WITH SIGNS OF DAMAGE TO THE FREE TURBINE. AFTER SEPERATING THE COMPRESSOR SECTION FROM FREE TURBINE, IT WAS NOTED THAT A COMPRESSOR 2ND STAGE N1 TURBINE BLADE WAS FRACTURED NEAR THE PLATFORM OF THE BLADE WITH A SMALL PEICE REMAINING. IN ADDITION, 2 OTHER BLADES ALSO HAD PIECES MISSING. THERE WAS DAMAGE TO THE INLET AREA OF THE FREE TURBINE. BOTH THE COMPRESSOR AND FREE TURBINE WERE REMOVED AND REPLACED. MFG NOTIFIED BY AGENCY.

2011FA0000712	SNIAS	TMECA	SEAL	LEAKING
10/12/2011	AS350B3	ARRIEL2B1	9560134100	FREEWHEEL SHAFT

FOUND FRONT AND REAR MAGNETIC SEAL OF THE FREEWHEEL SHAFT LEAKING. FRONT SEAL WAS LEAKING BEYOND LIMITS. BELIEVED TO BE CAUSED BY M/R AN T/R IMBALANCE.

2011FA0000713	SNIAS	TMECA	SHAFT	MISMANUFACTURED
10/11/2011	AS350B3	ARRIEL2B1	350A34015004	TAIL ROTOR

AFTER INSTALLATION OF REPAIRED TAIL ROTOR ASSY, A VIBRATION CHECK AND BALANCE CHECK OF THE "SHORT SHAFT" IS REQUIRED. THE BALANCE WAS OUT BY A CONSIDERABLE AMOUNT AND AS THESE PART WERE NEVER REMOVED OR ALTERED DURING THE REPLACEMENT OF THE TAIL ROTOR ASSY, IT CAN ONLY BE

ASSUMED THAT THE SHORT SHAFT WAS NOT PROPERLY BALANCED WHEN LEAVING THE FACTORY. RECOMMEND STRICTER QC ON THE BALANCING OF ROTORS BEFORE LEAVING THE MFG.

2011FA0000714	SNIAS	TMECA	ROTOR	OUT OF BALANCE
10/11/2011	AS350B3	ARRIEL2B1	355A31000201	MAIN ROTOR SYS

AFTER INSTALLATION OF REPAIRED TAIL ROTOR, A MAIN ROTOR TRACK AND BALANCE WAS REQUIRED AND CONDUCTED. BOTH THE TRACK AND THE BALANCE OF THE MAIN ROTOR SYS WAS FOUND TO BE OUT OF LIMITS. THE ONLY MX PERFORMED ON THIS SYS WAS THE RE-TORQUE REQURIED AFTER THE ASSY OF A NEW COMPONENT AND A 100 HR INSP IN WHICH NO DISASSEMBLY OF THE MAJOR COMPONENTS IS REQUIRED.

2011FA0000715	SNIAS	TMECA	BLADES	DEFECTIVE
10/11/2011	AS350B3	ARRIEL2B1	17286	TAIL ROTOR

MECHANIC CONDUCTING DAILY INSPECTION OF THE TAIL ROTOR ASSY HEARD "CRUNCHING" SOUNDS WHEN FLEXING THE BLADES. A BOROSCOPE INSP OF THE INTERNAL CUFFS REVEALED FIBERGLASS FIBERS PROTRUDING FROM THE SPAR AND A CRACK THROUGH THE RUBBER BLOCK AND INTO THE BLADE IN THE BOTTOM OF THE CUFF OF ONE SIDE OF THE BLADE. THE APPEARANCE GAVE THE IMPRESSION OF BEING RESIN POOR AND SEVERAL OTHER MFG DEFECTS APPEAR TO HAVE OCCURRED. TIGHTER QUALITY CONTROL DURING THE MFG PROCESS MAY HAVE CAUGHT OR ELIMINATED THIS PROBLEM.

VY1R201110120710	SNIAS	TMECA	SEAL	MISINSTALLED
10/12/2011	AS350B3	ARRIEL2B1	9560170620	HMU

FUEL LEAKING FROM HP PUMP OVERBOARD DRAIN. FUEL AMOUNT BEYOND SPECIFIC LIMIT. REPLACEMENT OF THE VARLIP SEAL WAS NECESSARY. THE SEAL HOUSING APPEARED TO BE INCORRECTLY SEATED IN THE HMU WHICH RESULTED IN THE SEAL BEING DESTROYED BY THE PRESSURE ON THE SHAFT. TIGHTER QC CHECKS ON THIS INSTALLATION.

VY1R201110120711	SNIAS	TMECA	BUSHING	LEAKING
10/12/2011	AS350B3	ARRIEL2B1	9560137520	FREEWHEEL SHAFT

FOUND FRONT AND REAR MAGNETIC SEAL OF THE FREEWHEEL SHAFT LEAKING. FRONT SEAL WAS LEAKING BEYOND LIMITS. BELIEVED TO BE CAUSED BY M/R AND T/R IMBALANCE.

2011FA0000708	SOCATA		FORK	BROKEN
10/5/2011	TBM700		7134732200	BRAKE SYS

DURING PRE-INSPECTION GROUND RUN, FOUND CO-PILOT LT BRAKE PEDAL NOT IN PROPER POSITION AND UNABLE TO APPLY BRAKE. FOUND LT BRAKE FORK BROKEN AT THREADED SHAFT. FOUND BEARING WAS STIFF, CLEANED AND LUBED BEARING ALL OTHER BEARINGS WERE CHECKED AND FOUND OK. AFTER REMOVAL OF THE FORK, RECHECKED IAW PART B OF SB RESULTS WAS .003" IAW FORMULA IN SB B4, MAX ALLOWED IN B5 IS .0197". NO LUBRICATION IS CALLED FOR AT THESE POINTS IN MANUAL. PROBABLE CAUSE WAS BINDING AT FORK AND BEARING AND WEAK POINT AT THREADS. INSTALLED NEW BEARING IAW SB AND AD. TO HELP PREVENT THIS AND POSSIBLE FINDING A PROBLEM BEFORE IT INTERFERS WITH RUDDER OPERATION, CHECK FORKS AND BEARING FOR FREE MOVEMENT AT ANNUAL INSPECTION OR ANY TIME PANELS BY RUDDER PEDALS ARE REMOVED.

2011FA0000720	STBROS	PWA	PWC	SLEEVE	SEIZED
11/1/2011	SD360SHERPA	PT6A65AR			ENGINE

AFTER TAKEOFF CLIMB AT 6000 FT, CREW PULLED BACK POWER TO CRUISE. SHORTLY AFTER, TORQUE ON THE NR 2 ENGINE DROPPED AND THE LOW OIL WARNING LIGHT ILLUMINATED. THE CREW NOTED THAT NR 2 PROPELLER HAD FEATHERED AND STOPPED. THE ENGINE WAS SHUTDOWN MANUALLY. CREW STATED ALL SYS WERE NORMAL PRIOR TO THE TORQUE DROP. THE ACFT LANDED SAFELY. POST FLIGHT INSP FOUND THAT THE NR 2 POWER SECTION LOCKED-UP AND THERE WAS NO SIGN OF OIL LEAKAGE. DURING THE POST-FLIGHT INSP BRASS AND METAL SHAVINGS IN THE OIL FILTER, CHIP DETECTOR AND POWER SECTION FILTER. THE INVESTIGATION OF THE ENGINE FAILURE REVEALED THAT THE SLEEVE BEARING (BRASS BUSHING) OF 4 OF 5 SECOND-STAGE REDUCTION PLANETARY GEARS HAD SEIZED TO THE GEAR SHAFTS. THE SEIZURE OF THE BUSHINGS CAN BE ATTRIBUTED AS THE CAUSE OF THE LACK OF ROTATION OF THE GEARBOX AND THUS THE CAUSE OF THE ENGINE SUDDEN STOPPAGE WHICH LED TO THE ENGINE SHUTDOWN IN-FLIGHT.