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Federal Aviation Administration

AFS-600
Regulatory Support Division

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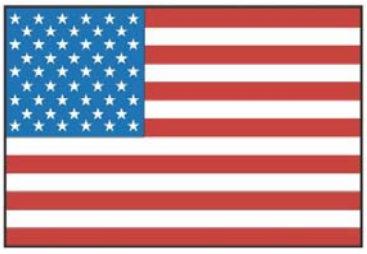
43-16A

AVIATION MAINTENANCE ALERTS



ALERT NUMBER 354

JANUARY 2008

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

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

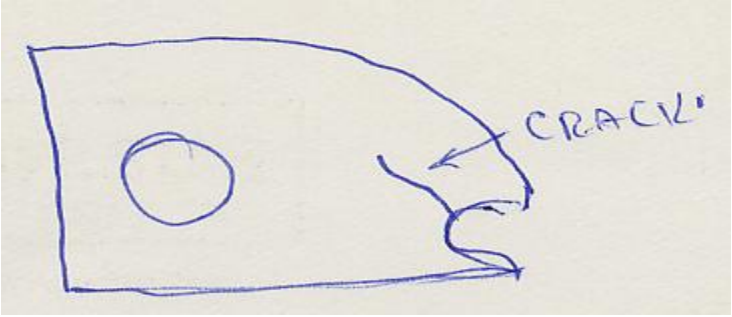
AIRPLANES

BEECH

Beech: A36; Cracked Flap Leading Edge Nose Rib; ATA 5753

(A repair station technician submits this and the next three Beech discrepancy reports.)

"At annual inspection, *(we)* found both the left and right flap attach point ribs cracked." *(An additional note indicates both the flange and web on these parts were cracked or broken. Flap Nose Rib P/N 35-165050-84; L/H and R/H P/N's 35-165050-78 and -79, respectively.)*

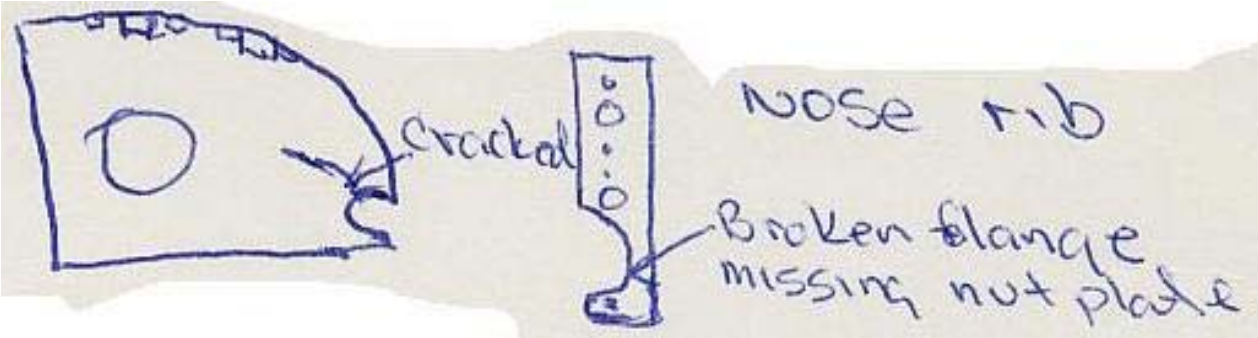


Part Total Time: 3,144.9 hours.

Beech: B95; Cracked Flap Leading Edge Nose Rib; ATA 5753

A repair station technician describes this same defect on two different B95 aircraft. "*(While)* in flight, the pilot lowered the flaps and the aircraft started to roll to the right. The pilot noticed the right hand flap was *(still)* retracted, *(so he returned the flap handle to the "up" position.)* The aircraft landed safely without incident.

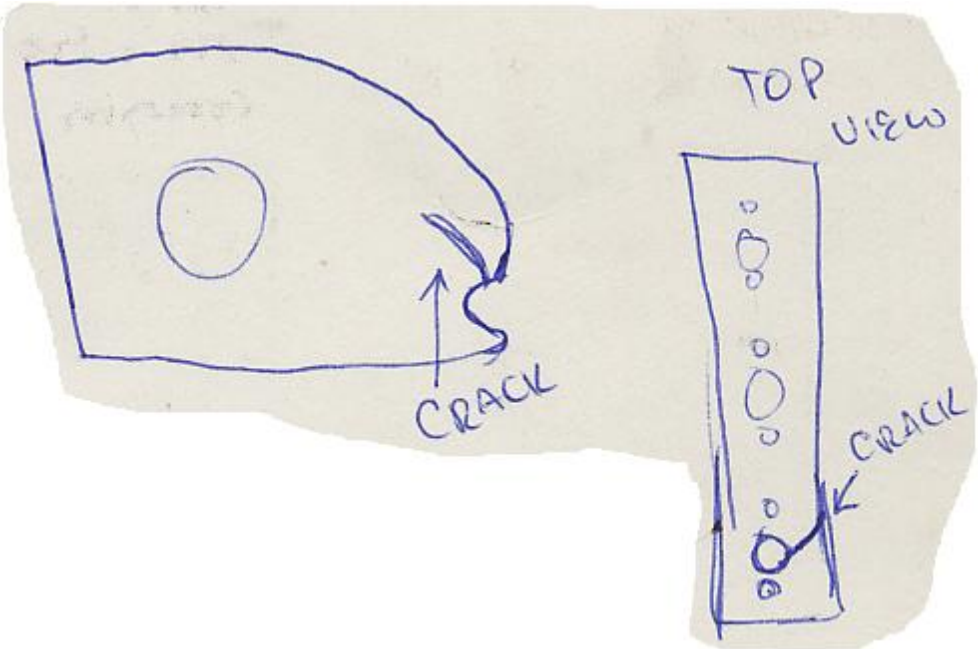
Inspection found the R/H flap rod attach bracket broken and the flap nose rib nut plate flange torn. Inspection of the L/H side found the *(same)* nose rib flange and web cracked." *(Flap Nose Rib P/N 35-165050-84; L/H and R/H Flap P/N's 95-160000-601 and -602, respectively.)*



Part Total Time: 4,288.8 hours.

Beech: F33A; Cracked Leading Edge Nose Rib; ATA 5753

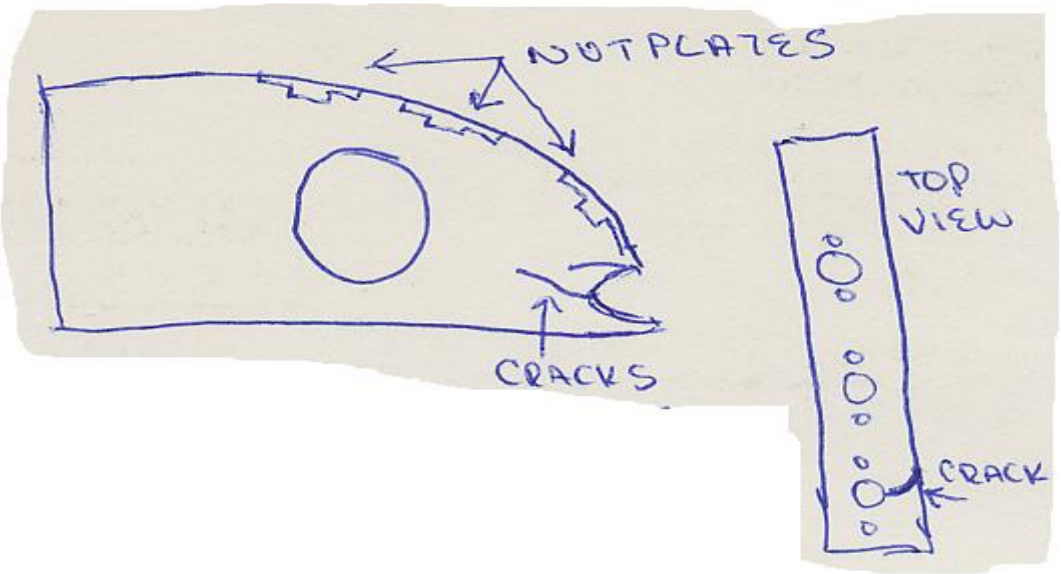
"An annual inspection found the R/H flap rod attach point rib cracked." *(Rib P/N 35-165050-84; Flap P/N 35-165050-606: both the flange and web were found to be cracked.)*



Part Total Time: 5,255.1 hours.

Beech: V35B; Cracked Flap Leading Edge Nose Rib; ATA 5753

"Annual inspection found the R/H flap rod attach point rib cracked."*(Rib P/N 35-165050-84; R/H flap P/N 35-165050-606)*



(This technician also includes another such report of a cracked attach point for the flap actuating rod on a Beech 55 having 4,552.7 hours. Of these six above referenced Beech aircraft, the time ranged from 3,144.9—to 5,255.1 hours yielding 2,110.2 hours difference. This is awfully good anecdotal evidence arguing for close attention to these actuation attach points after a couple thousand hours.)

Part Total Time: 4,248.19 hours.

CESSNA

Cessna: 172S; Chafed Fuel Line; ATA 2820

A submitter states, "*(I)* found the return fuel line to the reservoir (P/N 0500118-49) worn from rubbing on the nose steering rod just behind the firewall. I installed a new line *(in such a manner)* so as not to rub on this rod, and installed spiral wrap on the area where the rubbing had occurred. *(A very special note--)* this fuel line was worn to the point of leaking. I recommend inspecting new Cessna *(aircraft)* for proper fuel line installation." *(Thanks John—that's really good advice. If you can send me a photograph of that line and/or its installation configuration, I'll republish this article. Anything about leaking fuel is important. A search of the FAA Service Difficulty Reporting System data base records two additional such fuel line chafe defects.)*

Cessna: 208B; Leaking Brake Casting(s); ATA 3242

An unidentified submitter writes, "The main casting housing the brake caliper pistons leaks fluid under normal braking pressures. These leaks are from excessive porosity in the casting. This is the second occurrence *(we have experienced)* in our operations—the first was not reported." *(Brake Caliper Housing P/N 160-11800. Caliper Assembly is by Cleveland; P/N 163030-1001)*

Part Total Time: 194.6 hours.

Cessna: 650; Leaking Anti-Ice Regulator Shutoff Valve; ATA 3010

"*(I)* determined the pressure regulator shut-off valve *(P/N 9912402-17)* was leaking," says this repair station technician. It was found the regulator had been installed without gaskets. The parts manual does not clearly identify gaskets are required to be installed with this specific part number valve. I contacted Cessna and confirmed that gasket P/N 24096-150C is required to be installed on this valve. Maintenance personnel installed the gaskets, performed the leak check, and determined the leakage problem had *(now)* been corrected."

Part Total Time: (unknown).

DIAMOND

Diamond: DA40F; Cabin Door Separation; ATA 5210

"The aft cabin door assembly separated from the aircraft during flight," says the submitting mechanic. "Control of the aircraft was maintained and *(it)* landed safely at the departure airport. The door was eventually recovered, and upon visual inspection the aft door latch pin *(was observed)* not engaged. The front door latch pin was properly engaged and the door latch was closed. No 'door open' annunciation was indicated because the door 'open' switch is actuated from the front door latch pin. Upon disassembly of the door, the aft door latch rod was *(observed)* detached from the latch mechanism. The attachment clip (item number 215 in the parts book) was bent, allowing the rod to become separated from the latch. A much stronger material is recommended for the attachment clip or a dual switch set-up to indicate both pins are positively engaged before flight. *(Retaining attachment clip P/N not given, but indicated by parts book section 52-10, item 215, page 12, figure 6. Aft Cabin Door P/N D41-5221-00-00.)*

Part Total Time: 212.1 hours.

PIPER

Piper: PA44-180; Failed Nose Gear Drag Link Bolt; ATA 3222

Chief inspector James Kelly of Embry-Riddle Aeronautical University states "The forward drag link bolt *(P/N AN 551)* on this aircraft's nose gear failed during touch and go practice. The aircraft returned to the departure runway and landed with the nose gear stuck in the nose wheel-well."

(With respect to the common good and interest of safety, "hats-off" are again due to the next three participants for making possible the following structural analysis—the very same contributors for the PA44 trunnion failure analysis in September 2006. "Thank-you" James Kelly and Embry-Riddle University for your frequent contributions and help to the Alerts—for sharing this report and many other safety-related concerns. A special thanks again to George A. Morse of Failure Analysis Service Technology for another fascinating dissection of microscopic clues to failure.

Readers should note the following editorial redactions: N-numbers have been eliminated as standard practice, and "conversion battles" between moving from PDF files, to Word, then back to PDF created some difficulty. The first four pages are obvious "scans," preserving the format of the analysis report. However, scans of PDF files render very poor photo image quality, so these were cut from the original PDF files...converted to Bit-mapped...converted to J-peg...then re-inserted into the Word document with slight horizontal elongation. This process seemed to "truncate" the photo descriptions, requiring their re-typing by this editor. The point of this exercise was to maintain the best photo quality possible as will hopefully be apparent in this limited format. Any mistakes or errors induced by this process are entirely inadvertent and the sole responsibility of this editor. Thanks again and happy new year to all—Ed.)

FAILURE ANALYSIS SERVICE TECHNOLOGY

2305 St. Bernard Drive
P.O. Box 5489
Pine Mountain, CA 93222-5489
(800)657-5664 International (661)242-0902
FAX(661)242-4910 E-mail: george@fod.com

24 October 2007

TO: Pat Kelly
Embry-Riddle Aeronautical University
3700 Willow Creek Road
Prescott, AZ 86301

FROM: George A. Morse

SUBJECT: NOSE LANDING GEAR BOLT FAILURE

BACKGROUND

This report summarizes the investigation of a nose landing gear (NLG) bolt failure on aircraft N ER. The end of the bolt, which was stuck in the NLG drag link assembly, was submitted along with the drag link assembly to Failure Analysis Service Technology, Inc. (FAST) for evaluation. The following information is applicable:

Type AC: PA44-180 AC Number: AC Total Time: 4146.0

Part Failure: NLG FWD bolt in drag link assembly PN: 400-191

Bolt Specification: AN5-51 FAST Report Number: F5429

The aircraft was performing touch-and-go landings. During the last gear retraction, a noise was heard in the NLG. The nose gear could not be extended for the next landing. Subsequent inspection revealed a sheared bolt in the forward section of the drag link assembly. This report addresses the failure of this bolt in detail.

CONCLUSION

The last gear retraction of N ER was the final event in a continuous fracture history of the NLG bolt. Fracture initiation sites were located roughly 180 degrees apart on the outer circumference of the bolt. Crack growth progressed from the initiation sites at opposite ends towards the center of the bolt by fatigue. The bolt finally failed along a thin band running through the center of the bolt. The landing just prior to the final gear retraction did not result excessive loads to this bolt.

DISCUSSION

The NLG diagram from Piper's Airplane Parts Catalog is shown in Figure 1 for reference. Post failure, the fractured bolt, Figure item #69 was stuck in the NLG drag link assembly, Figure item #20, which is shown "as received" by FAST in Figures 2 & 3. The bolt was stuck in the drag link assembly due to the bending in the bolt shaft. The bolt could not be rotated in the assembly using finger force only. Another view of the fracture surface of the bolt is shown looking through the drag link assembly hole, Figure 4. There are significant fracture features visible at this level of magnification. There is a dark narrow band running through the center of the bolt from the 8 o'clock to 2 o'clock position. There is a semi-circle at the outer edge of the bolt at the 11 o'clock position, and on the opposite edge at the 4 o'clock position is a roughened edge. It was necessary for FAST personnel to cut the bolt so that the fracture surface could be examined in detail under the scanning electron microscope (SEM). The mating surface of the bolt was never found.

A macro photo of the bolt fracture surface after the shaft was cut by FAST personnel is shown in Figure 5. There are numerous fracture origins at both the top and bottom, indicated by the blue arrows, Figure 5. The yellow arrows indicate crack growth direction that progressed by fatigue from the fracture origins. The bolt finally failed instantaneously at the narrow dark zone traveling through the center of the bolt. A number of beach marks, which look like ripples in a pond emanating from the point where a thrown stone enters the water, emanate from the fracture origins at both the top and bottom edges. Each of these fracture features were examined in detail in the SEM.

A 20X SEM photo of the narrow band running through the center of the bolt is shown in Figures 6 & 7. A number of beach marks can be seen in each of these photos. Notice that the marks above the center band are concaved upwards toward the fracture origin at the top. The beach marks below the center band are concaved downward toward the fracture origin at the bottom. Each beach mark represents crack growth stoppage from a landing and taxiing operation. The presence of numerous beach marks is proof that this bolt did not fail in one landing operation, but instead failed over many operations over a long period of time.

Higher SEM magnifications of the narrow center band are shown in the SEM photos, Figures 8 - 10. Each shows the characteristic ductile dimple fracture features of instantaneous overload. In other the words, this narrow center band represents the amount of metal holding the bolt together when it finally failed during the last gear retraction. There wasn't much.

While the bolt finally failed in the narrow center band, the outer edges are where the fracture initiated. Progressive SEM magnification of the top edge shown in Figure 5, is shown in the SEM photos, Figures 11 – 13. The origin is indicated by the arrow in Figure 11. Notice that there is a vertical feature in the metal that also points to the origin. The 1000X SEM photo of the top origin shows a very smooth surface from rubbing of the mating surface of the bolt after the initial crack was formed. This photo also shows wear deformation at the outer edge of the bolt. A 1000X SEM photo of the area just below the origin reveals closely spaced parallel striations that are characteristic of fatigue crack growth, Figure 14. The striations are widened slightly

near the final fracture zone on the top half of the bolt due to less metal being able to sustain a landing and taxiing operation, Figure 15. So crack growth was accelerating.

Similar fracture features are shown in the SEM photos for the bottom of the bolt, Figures 16 - 18. A 20X SEM photo of the bottom edge reveals multiple fracture origins at the outer edge. A 60X SEM photo of the origin at the 6 o'clock position is shown in Figure 17. A 500X SEM photo of the fracture surface just above this origin reveals fatigue crack growth features, Figure 18.

A side profile of the bolt at the 6 o'clock edge shown in Figure 5 is shown in the 30X SEM photo, Figure 19. Progressive SEM magnifications of this area show a crack in the edge and wear, Figures 20 – 22. These photos reveal that the source of the stress concentration from which crack growth proceeded by fatigue is from wear with in the mating NLG bushing. The wear is very close to the edge of the bushing. Notice the gold color is worn from the bolt right at the edge of the fracture, Figure 23.

The bolt was found to be made of a non-corrosion resistant steel in accordance with the AN5-51 bolt specification, Figure 24. The outer surface was plated with cadmium and a chromate conversion coating, Figure 25.

SUMMARY

The evidence is conclusive for this bolt having failed over a long period of time and many landing/taxiing operations. The bolt failed by a fatigue crack growth mechanism. Crack growth proceeded from opposite edges towards the center. The bolt failed during the last gear retraction with very little metal actually holding the bolt together. The crack initiation sites were on the edges and due to wearing of the bolt with the mating NLG bushing. Please contact me if further assistance is required.

George A. Morse
Failure Analysis Service Technology, Inc.

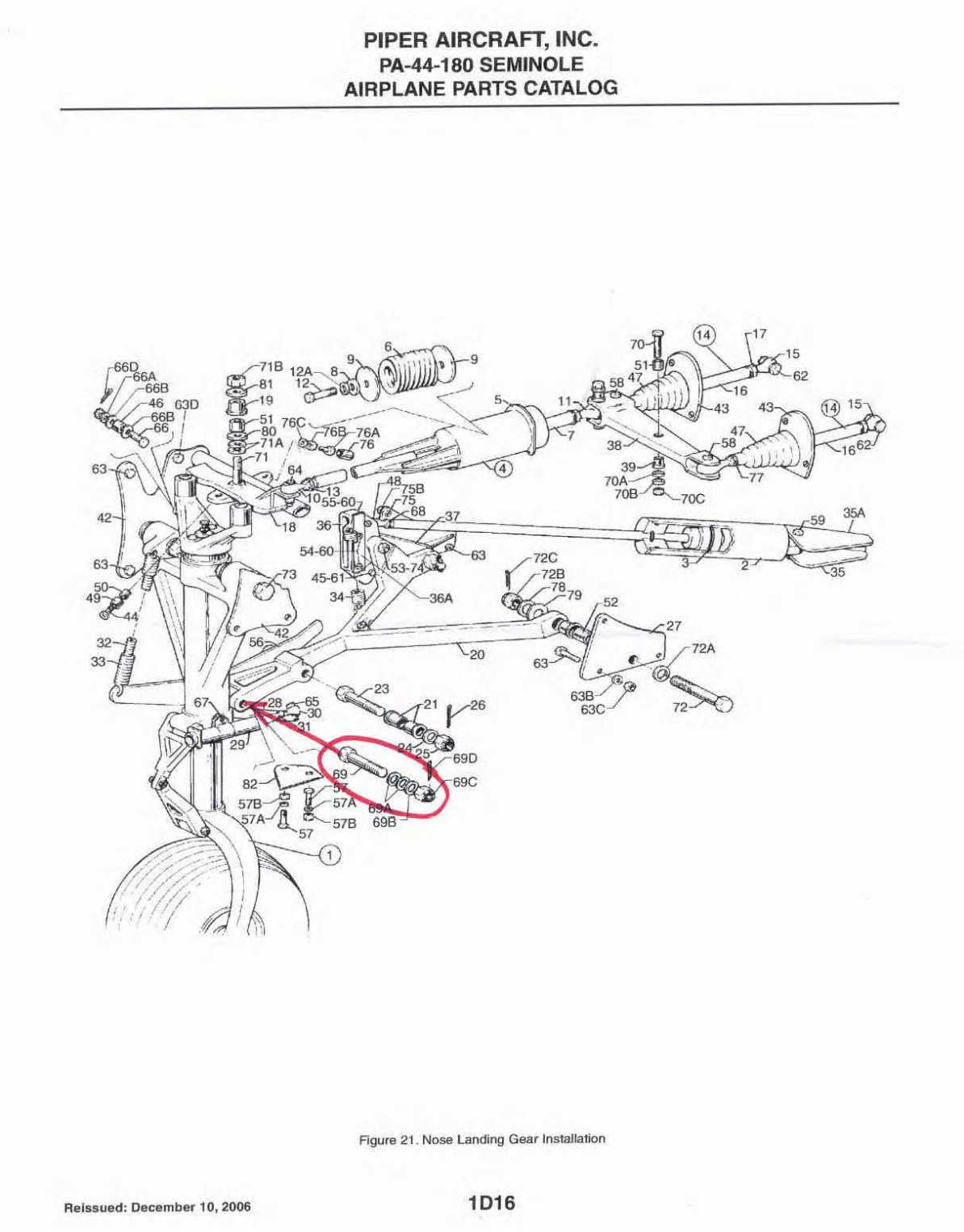


Figure 1. Figure item #69 is the bolt that failed. It is PN 400-191, an AN5-51 bolt.

Figure 2. This photo shows the bolt still stuck in the drag link assembly, Figure item 20 in Figure 1.

Figure 3. A side view of the bolt and drag assembly shown "as received."

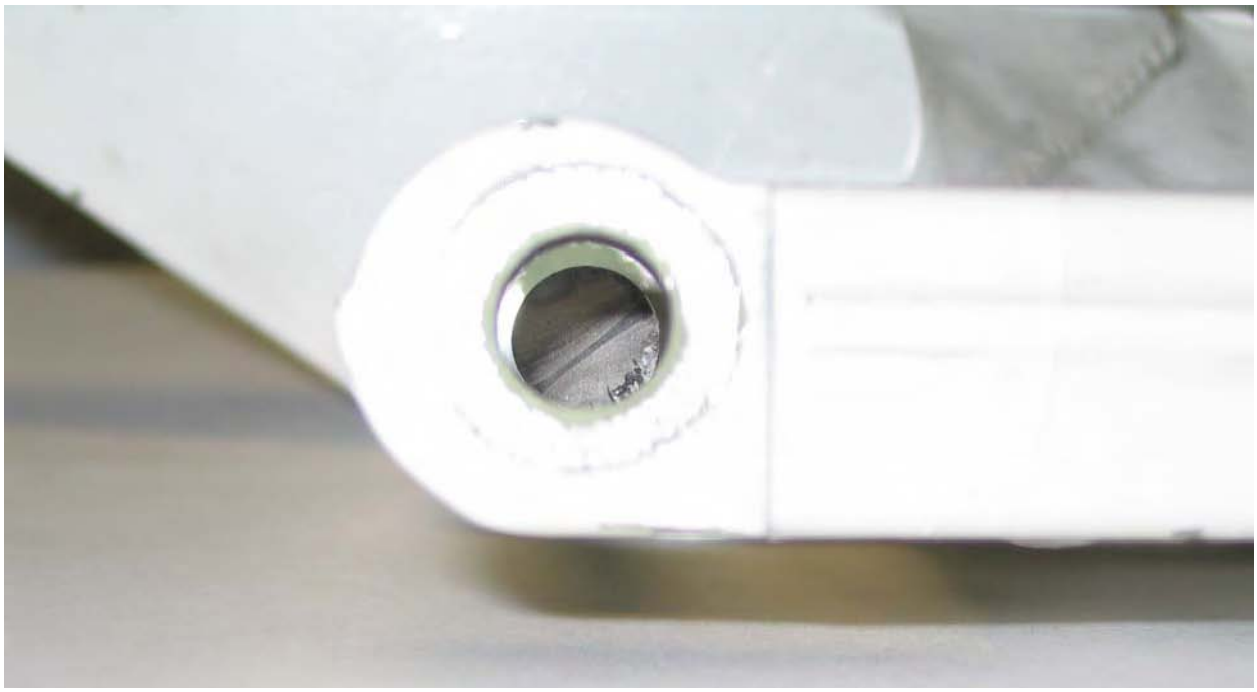


Figure 4. This photo looking through the drag link assembly hole reveals a dark narrow band running diagonally through the center of the bolt fracture surface from 8 o'clock to 2 o'clock. There is a semi-circle at the 11 o'clock position, and rough edge at the four o'clock position. These fracture features are shown in detail in subsequent photos.

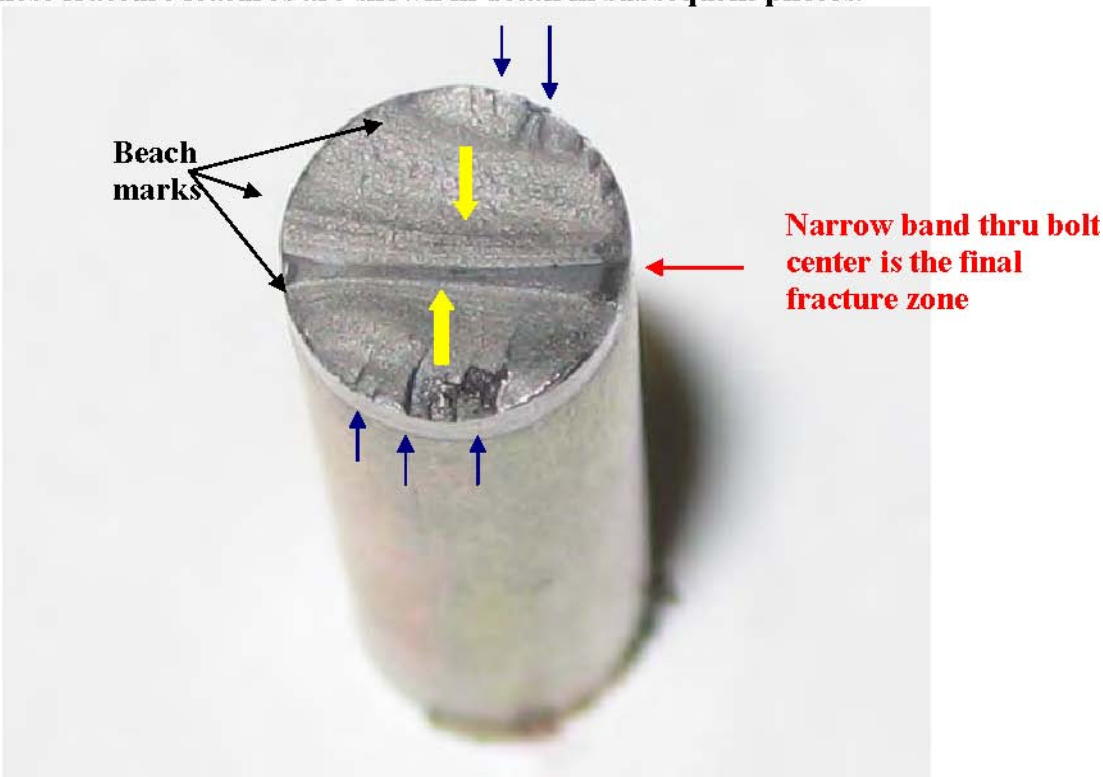


Figure 5. This photo shows the bolt fracture surface with appropriate areas labeled. Blue arrows are fracture origins. Large yellow arrows indicate crack growth direction by fatigue.

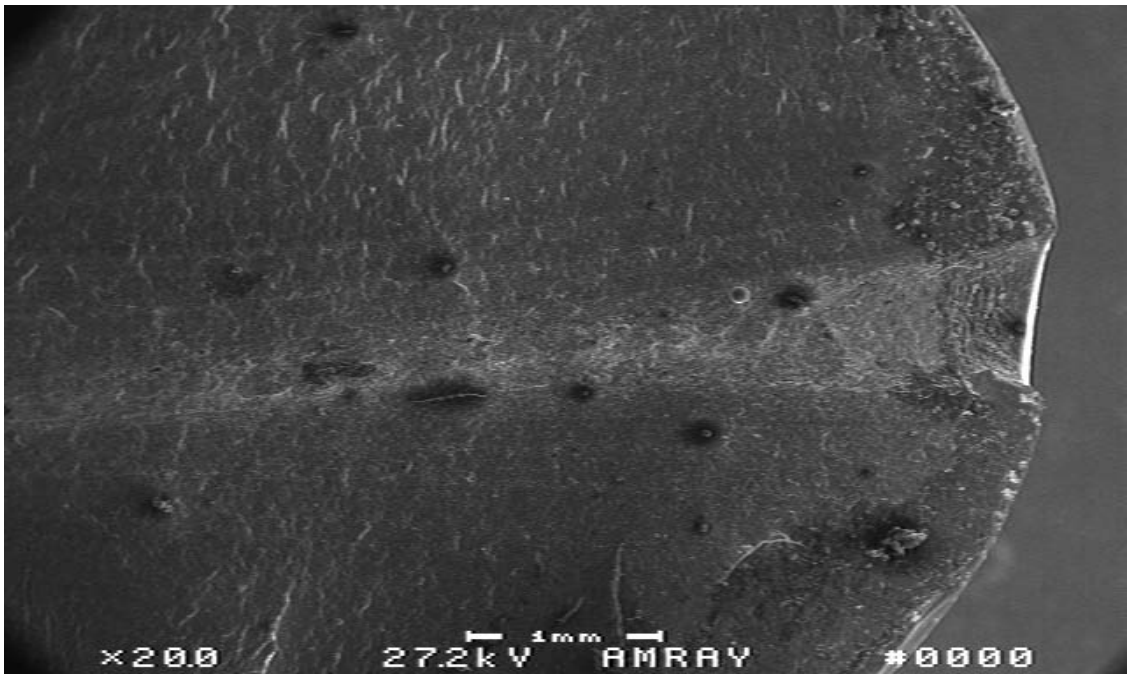


Figure 6. A 20X SEM photo of the right side of the narrow dark band running through the center of the bolt. Notice that the beach marks above the center band are concaved upwards, and those below the center band are concaved downwards.

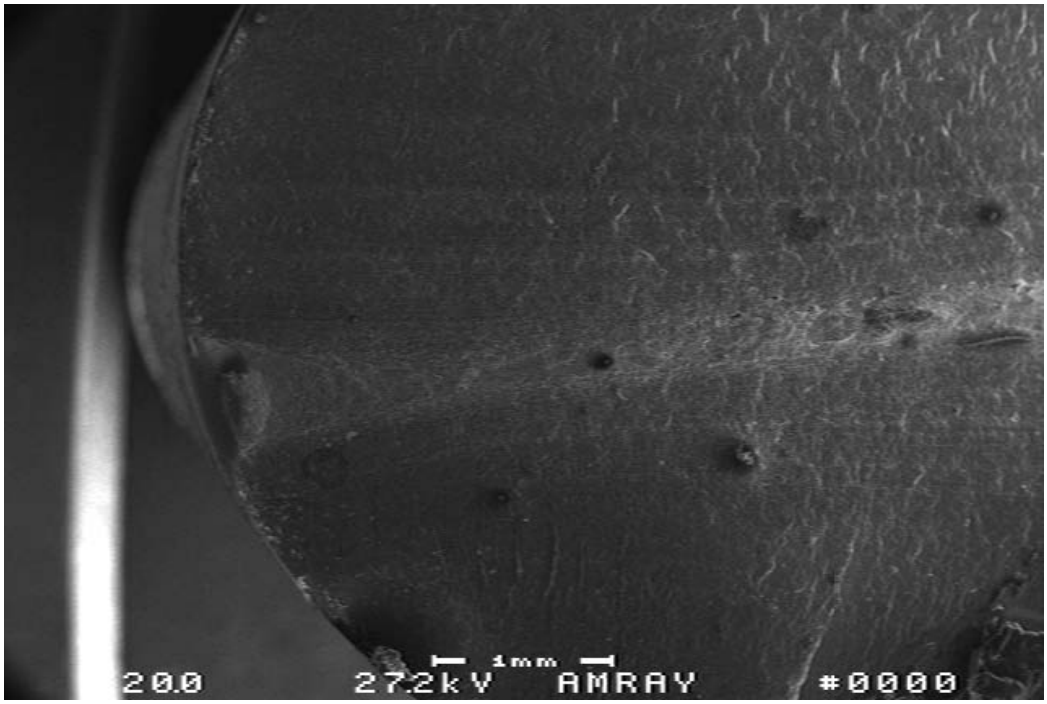


Figure 7. A 20X SEM photo of the left side of the narrow center band. The description of the beach marks discussed in Figure 6 also applies here.

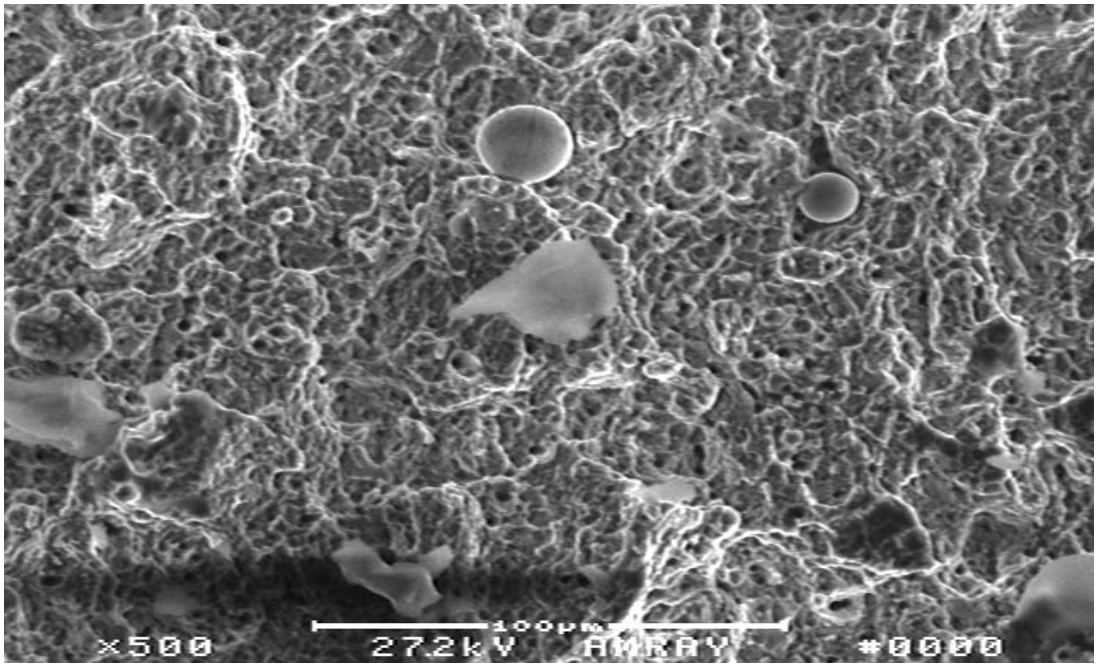


Figure 8. A 500X SEM photo of the right side of the narrow band thru the center of the bolt reveals ductile dimple fracture features characteristic of instantaneous final fracture.

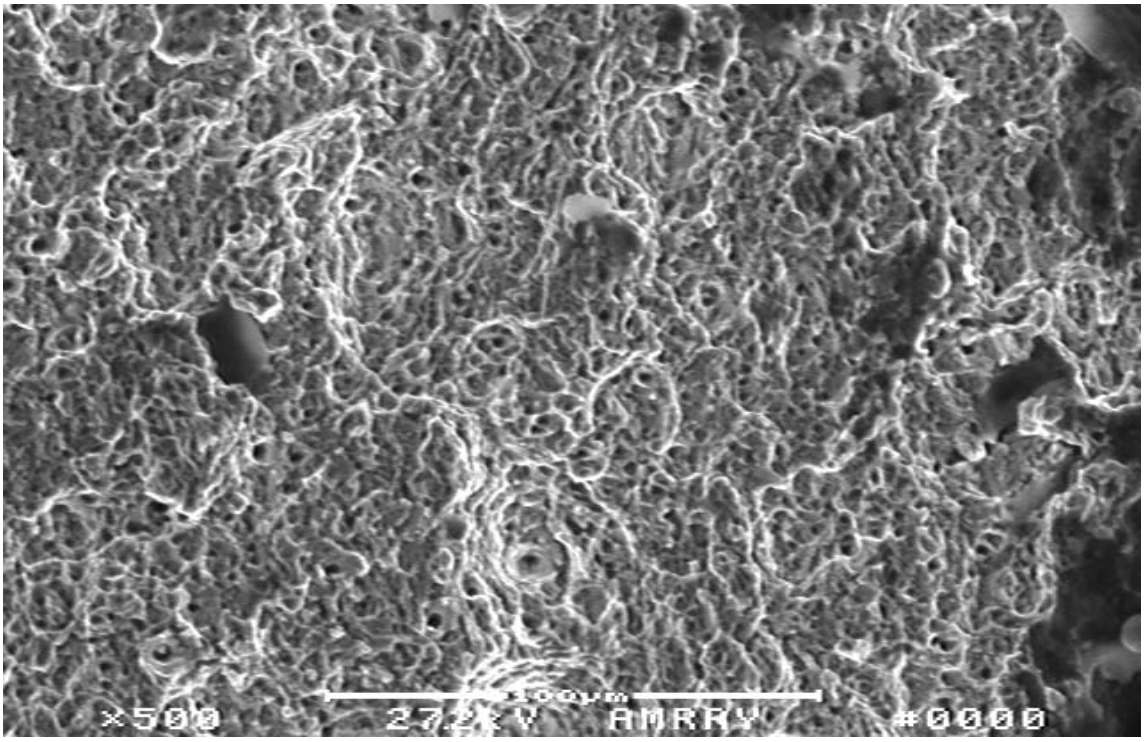


Figure 9. A 500X SEM photo of the center section of the narrow band reveals similar fracture features characteristic of overload.

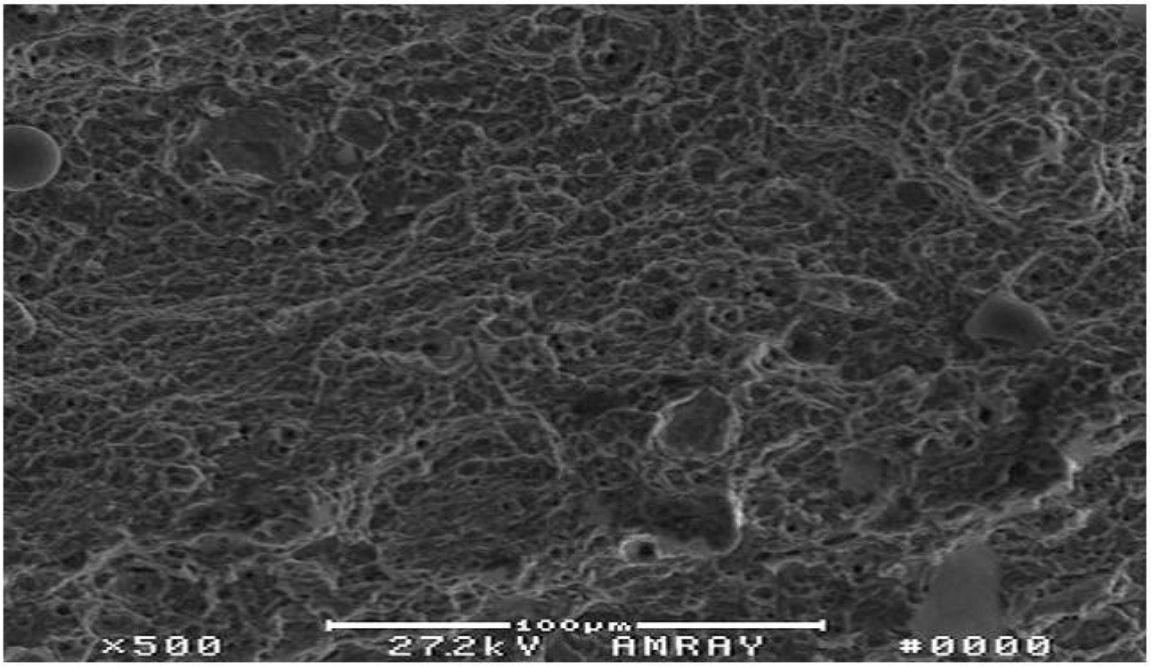


Figure 10. A 500X SEM photo of the left side of the narrow band in the center of the bolt also reveals the ductile dimple fracture features characteristic of instantaneous overload.

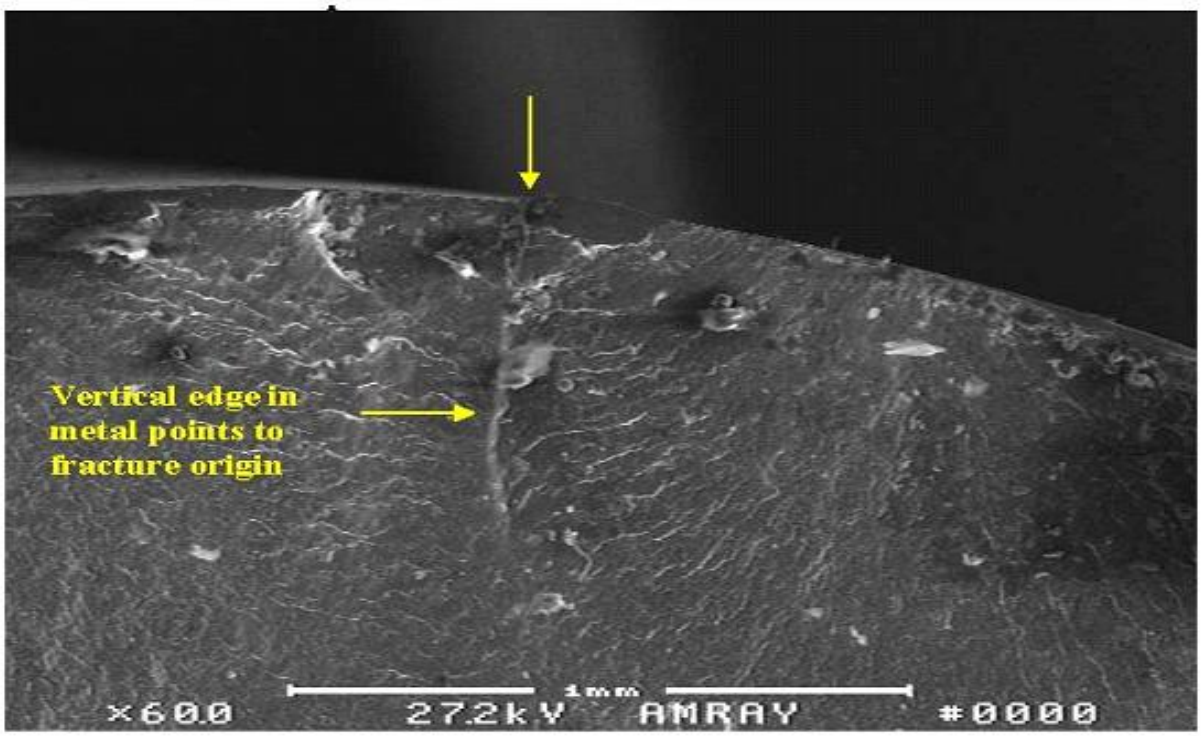


Figure 11. A 60X SEM photo showing the semi-circular shaped area at the bolt's top edge in figure 5. The origin is at the outer surface and indicated by the arrow. Note the vertical feature in the metal which also points to this edge.

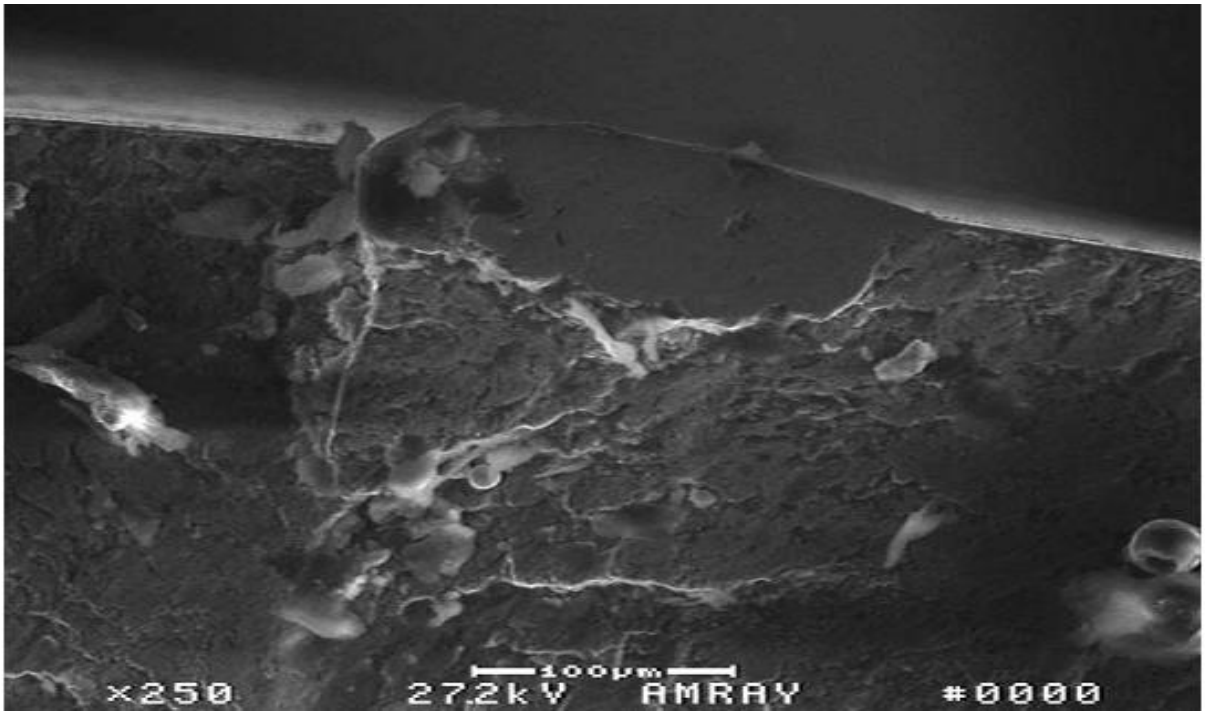


Figure 12. A 250X SEM photo of the origin shown in Figure 11.

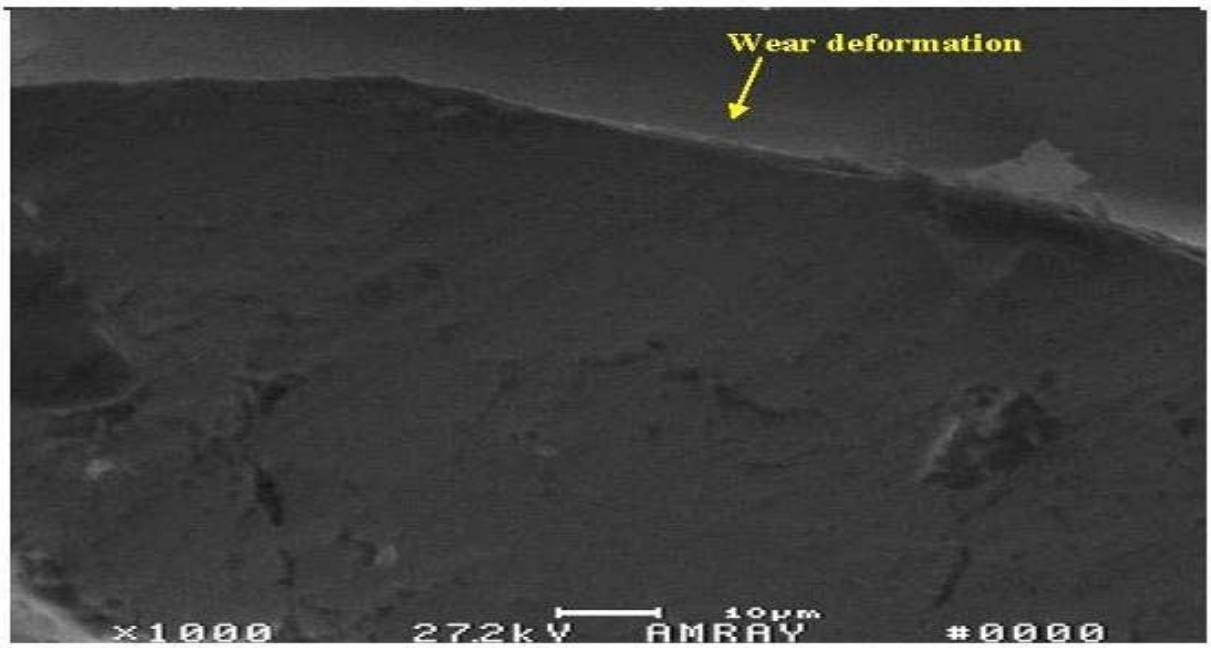


Figure 13. A 1000X SEM photo of the top fracture origin shows wear deformation at the outer edge. Notice the smooth fracture surface from rubbing with the mating surface after initial cracking.

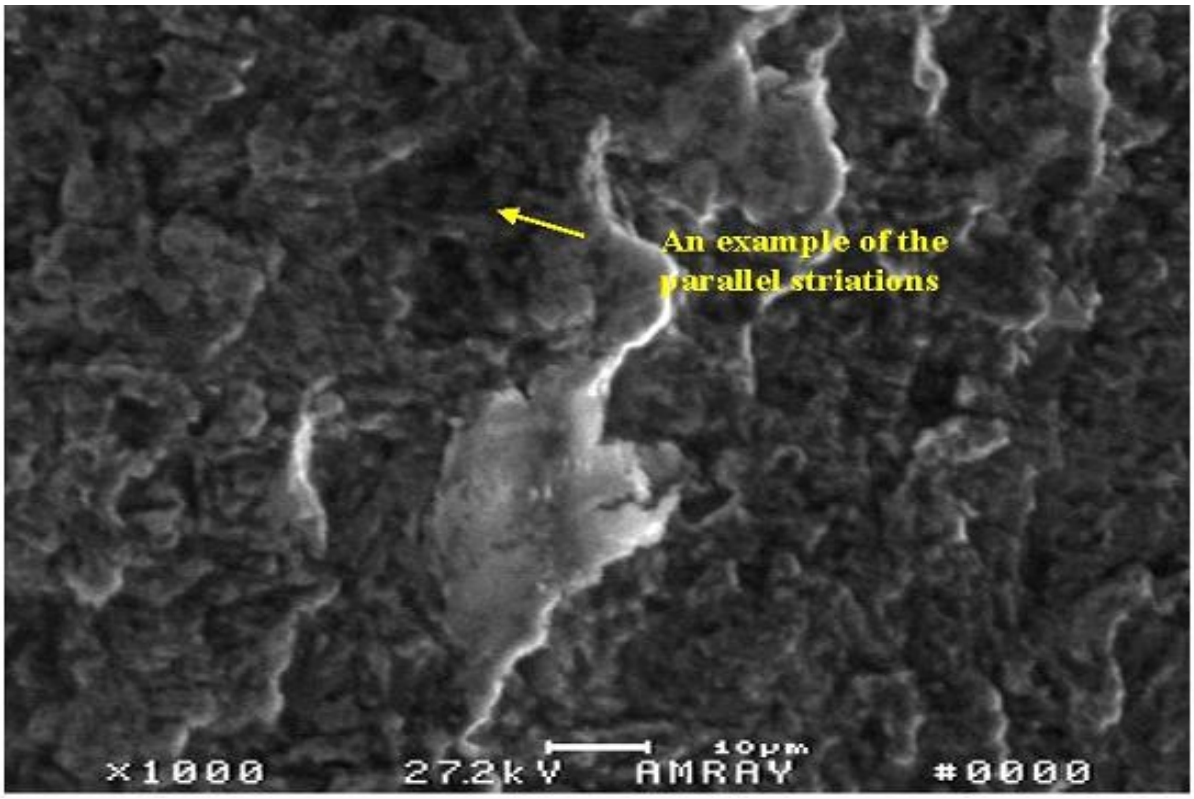


Figure 14. A 1000X SEM photo of an area just below the top origin shows parallel striations characteristic of fatigue crack growth.

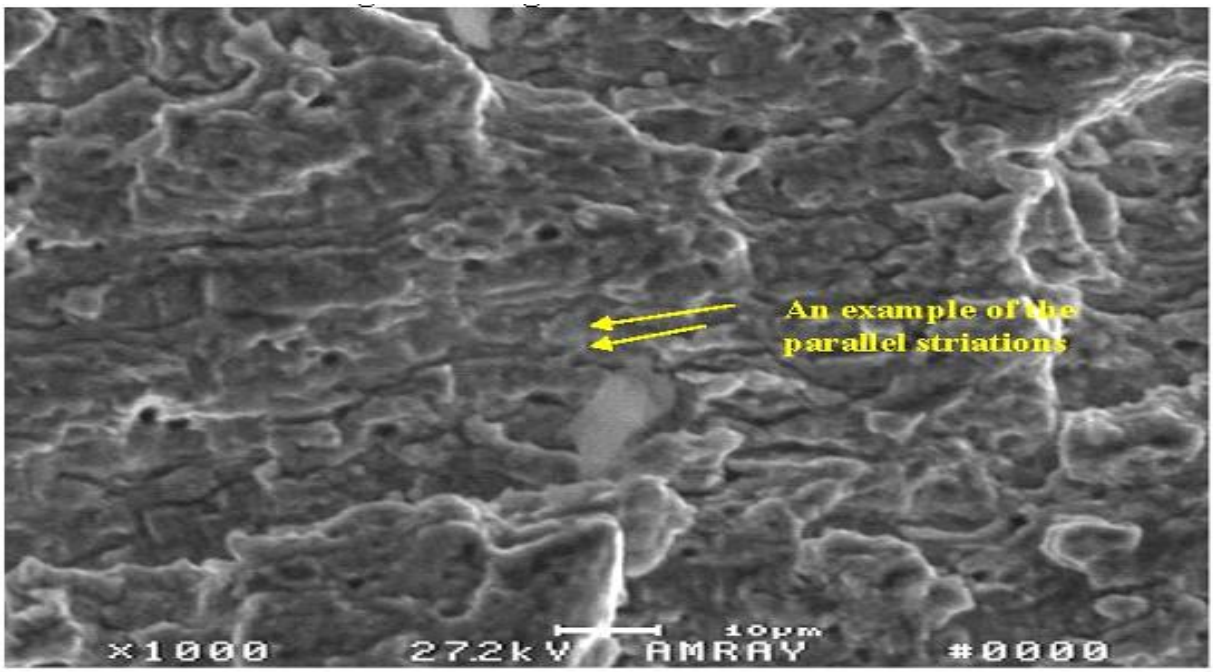


Figure 15. A 1000X SEM photo of an area below the top origin and above the final fracture at the center of the bolt shows parallel striations characteristic of fatigue crack growth. Crack growth direction runs from top to bottom.

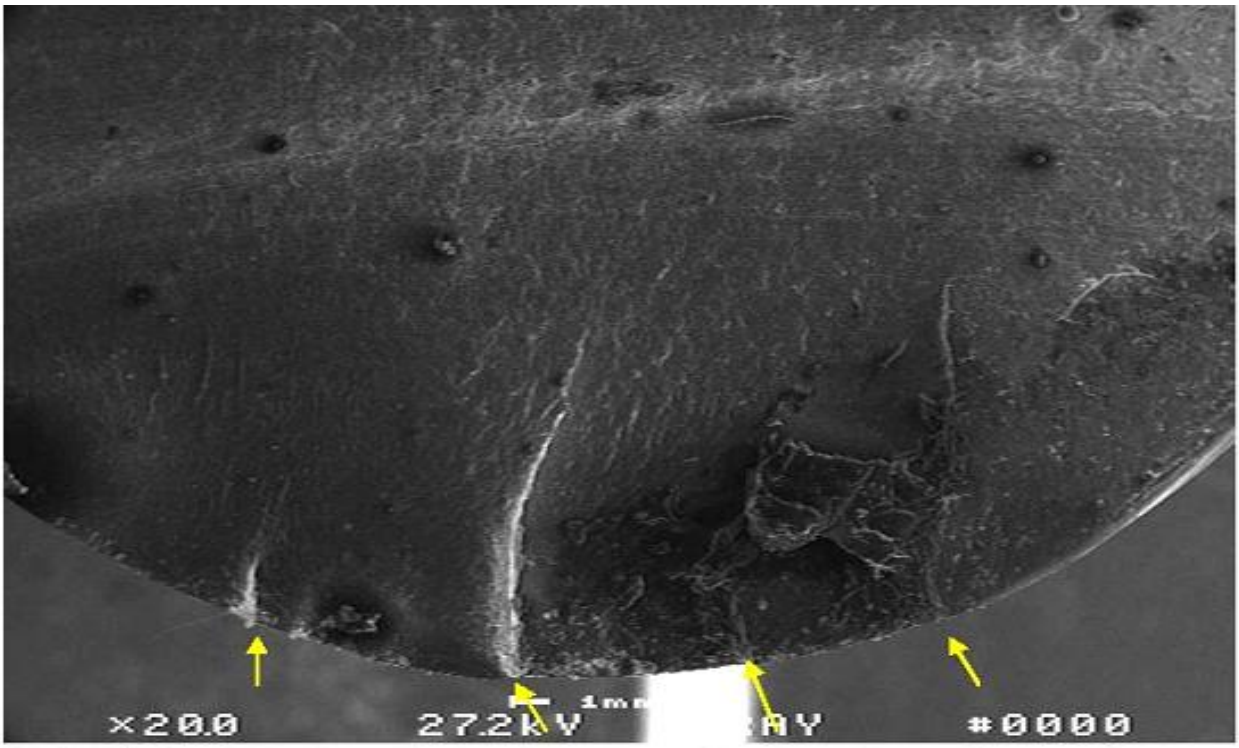


Figure 16. A 20X SEM photo of the bottom edge of the bolt from Figure 5 shows multiple origins (arrows) at the edge.

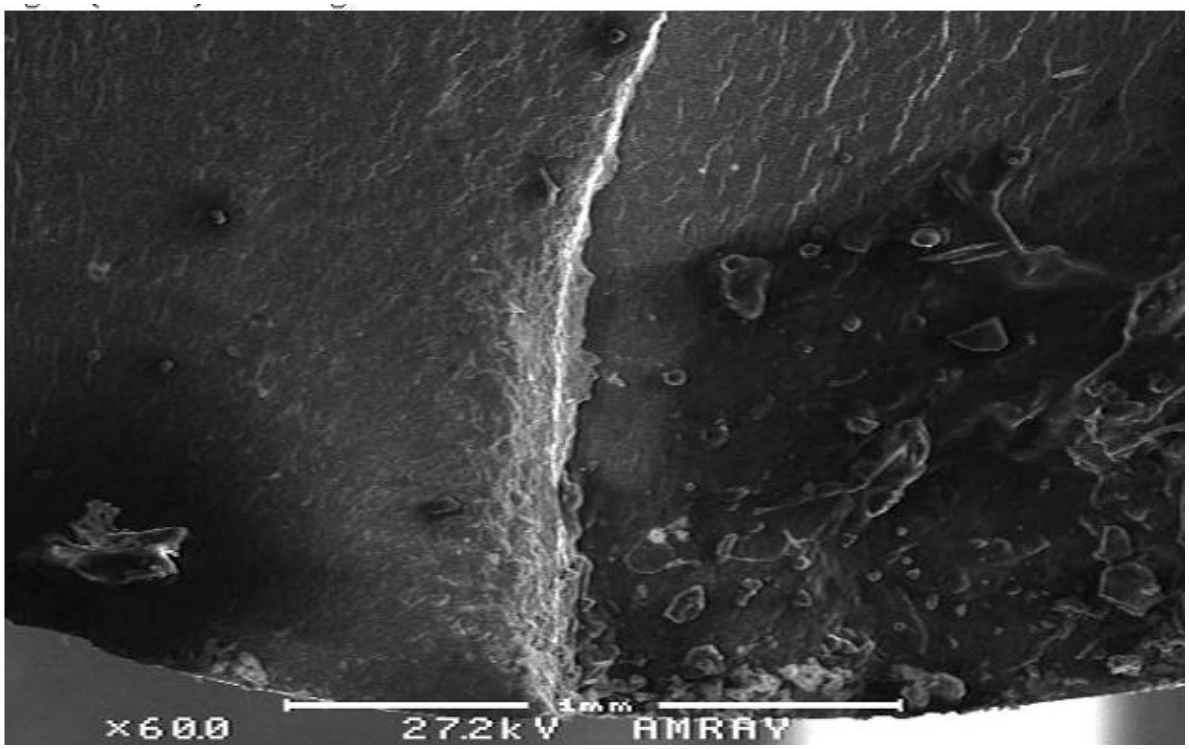


Figure 17. A 60X SEM photo of the bottom origin at the 6 o'clock position as shown in Figure 16.

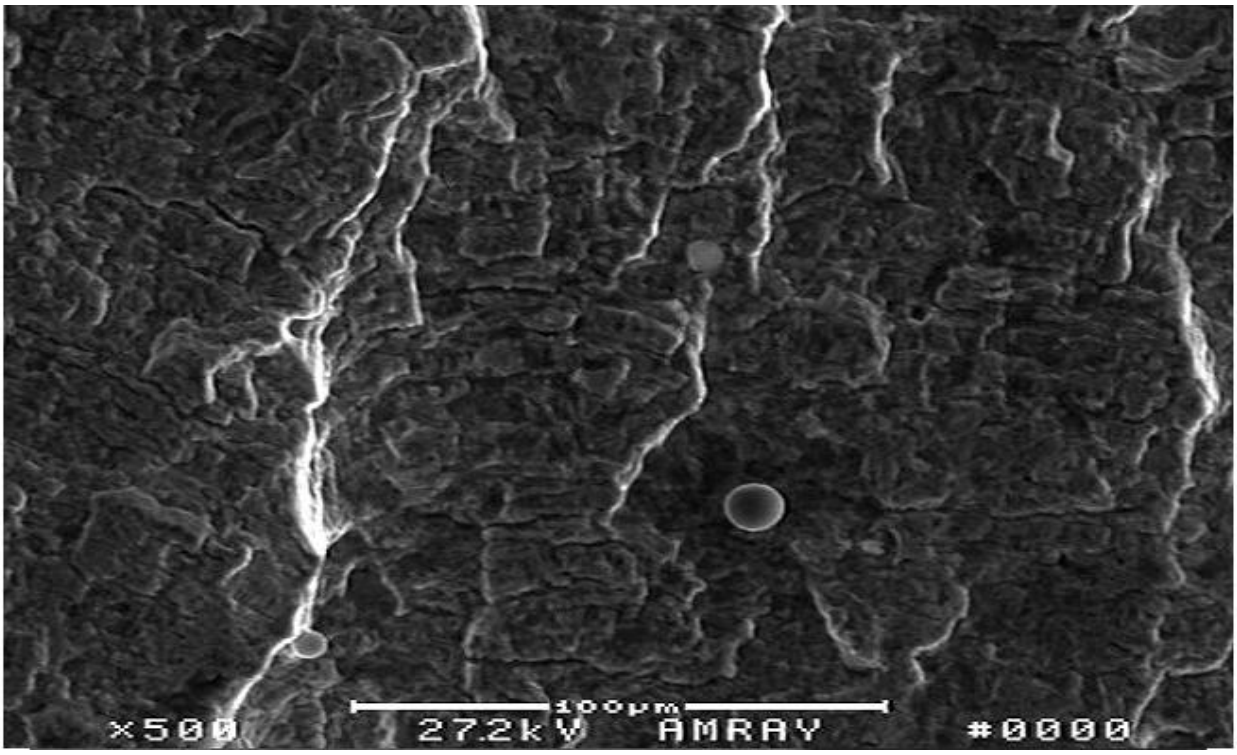


Figure 18. A 500X SEM photo of the area just above the origin shown in Figure 17 reveals fatigue fracture features.

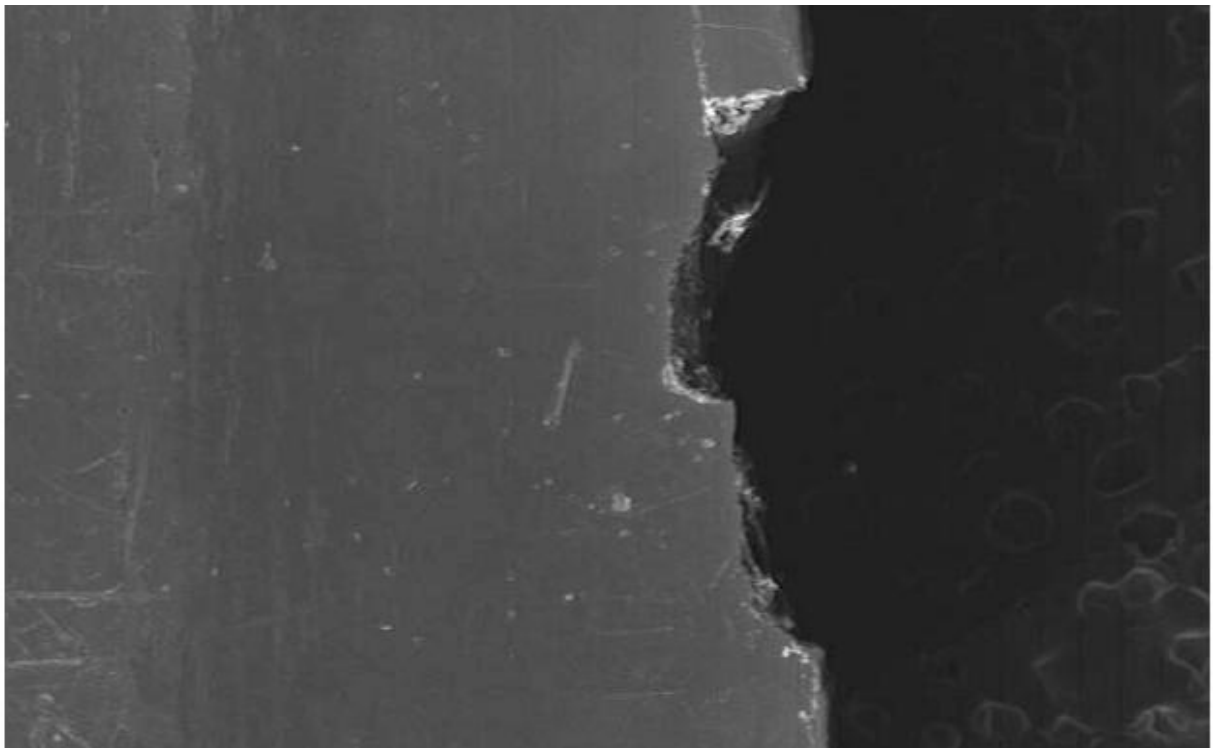


Figure 19. A 30X SEM photo of the side of the bolt at the 6 o'clock area from Figure 5 shows some wear and a crack.

Figure 20. A 30X SEM photo of the side at the 6 o'clock fracture origin shows a crack on the surface.

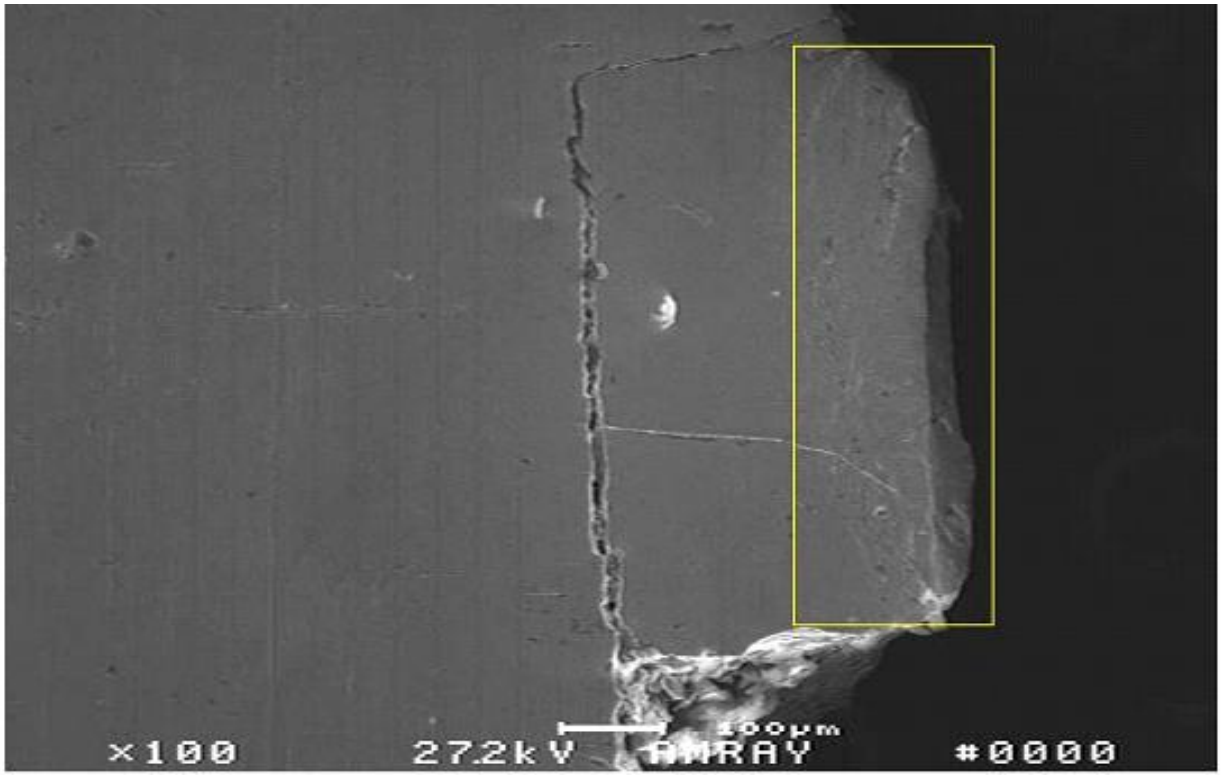


Figure 21. A 100X SEM photo of the cracked area from Figure 20. Notice the wear area outlined by the box.

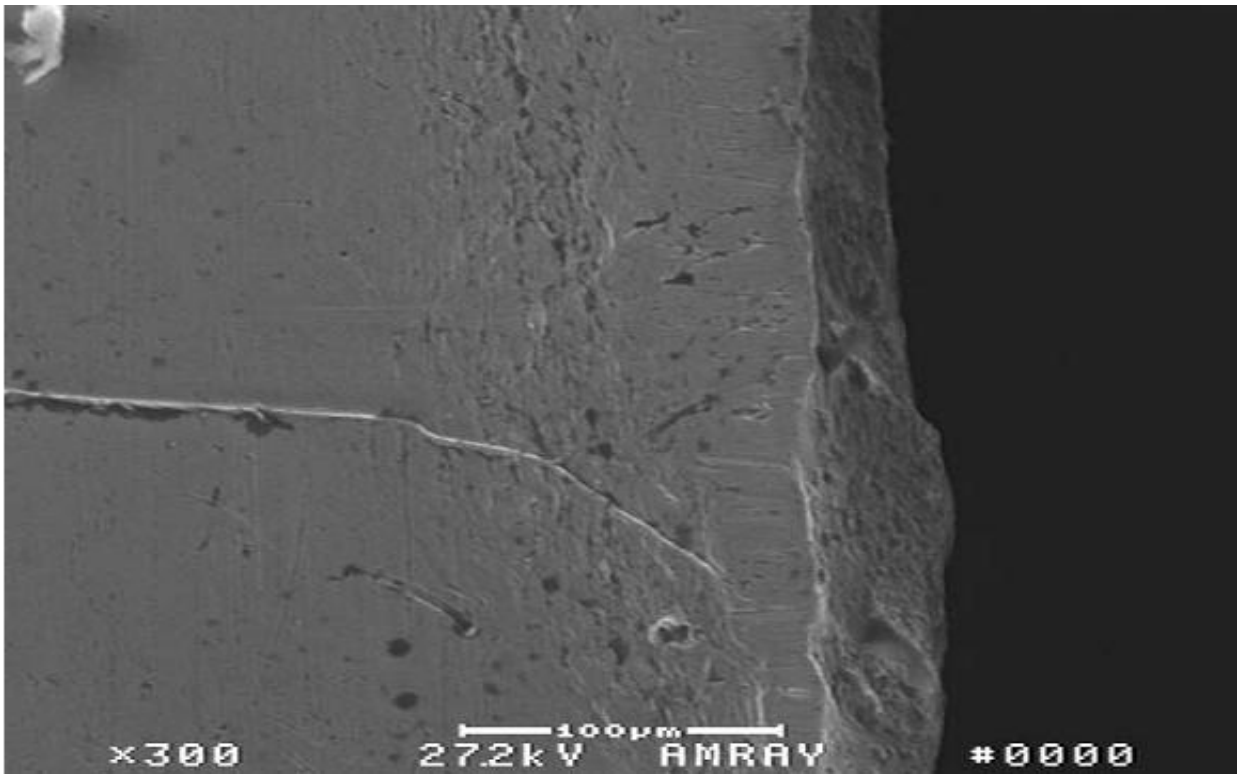


Figure 22. A 300X SEM photo of the outlined area in Figure 21 shows the wear.

Figure 23. The gold color is removed from the bolt very near the fracture zone.

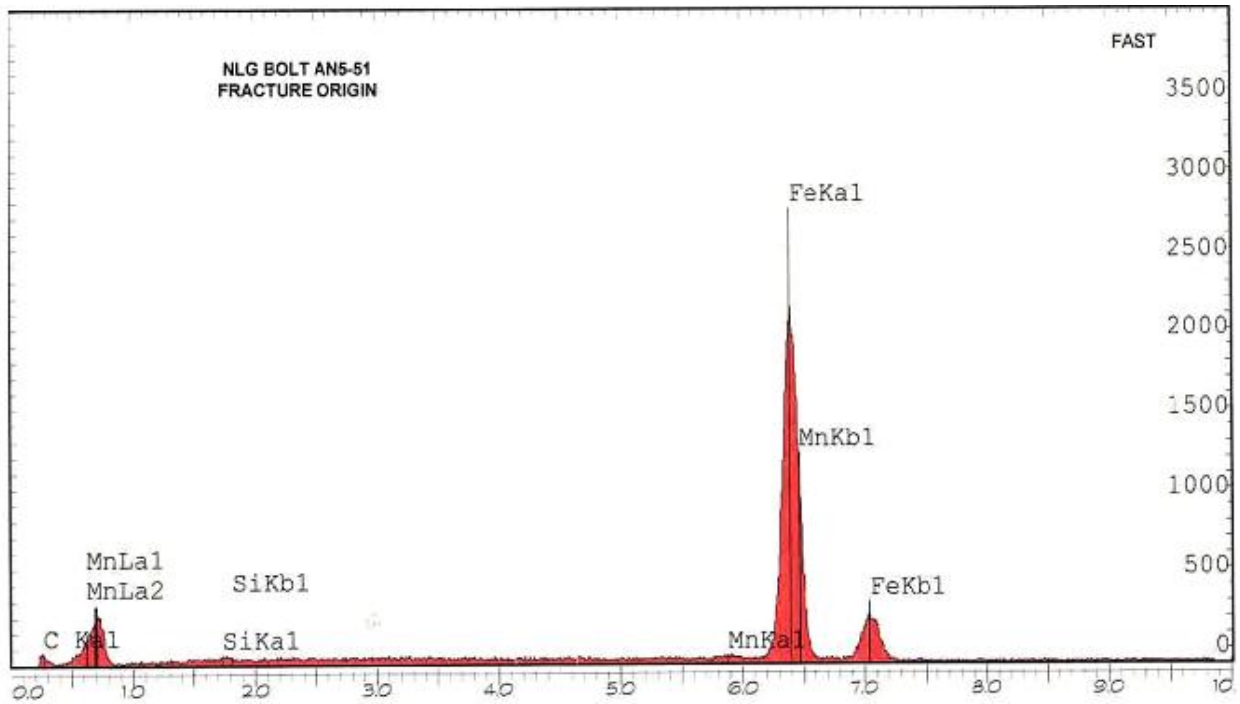


Figure 24. The base metal of the bolt is low alloy carbon steel.

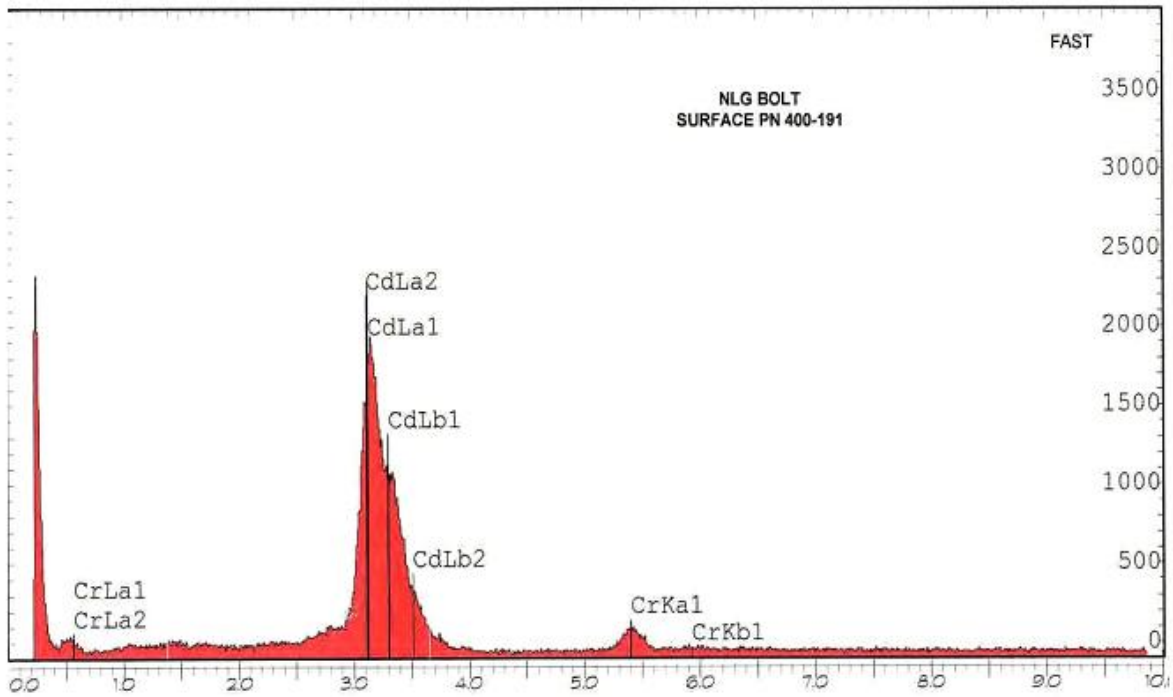


Figure 25. The bolt outer surface is plated with cadmium and a chromate conversion coating.

(End FAST report)

Part Total Time: 3,743.0 hours.

HELICOPTERS

BELL

Bell: 47-G5; Tail Rotor Abrasion Strip Separation; ATA 6410

A repair station technician writes, "The stainless steel abrasion strip on the leading edge of the composite tail rotor blade separated from the blade in flight. The pilot noted a vibration in a spray turn and elected to land—landing safely with no injuries." *(Tail Rotor Abrasion Strip P/N HAC-47-3. The blade manufacturer is noted as Hertelendy Research Associates.)*

Part Total Time: 125.0 hours.

AIR NOTES

INTERNET SERVICE DIFFICULTY REPORTING (iSDR) WEB SITE

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

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

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

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

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

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

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

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

The SDRS and iSDR web site point of contact is:

Pennie Thompson
Service Difficulty Reporting System, Program Manager
Aviation Data Systems Branch, AFS-620
P.O. Box 25082
Oklahoma City, OK 73125
Telephone: (405) 954-1150
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 (SDR) System data base. This is not an all-inclusive listing of Service Difficulty Reports. For more information, contact the FAA, Regulatory Support Division, Aviation Data Systems Branch, AFS-620, located in Oklahoma City, Oklahoma. The mailing address is:

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

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

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

Federal Aviation Administration

Service Difficulty Report Data

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

Control Number	Aircraft Make	Engine Make	Component Make	Part Name	Part Condition
Difficulty Date	**Aircraft Model**	**Engine Model**	**Component Model**	**Part Number**	**Part Location**
2007FA0000969				SHAFT	CRACKED
10/29/2007				538715	TAIL ROTOR
FINE TRANSVERSE CRACK(S) LOCATED NEAR THE CENTER PORTION OF PART.					
2007FA0000970				SHAFT	CRACKED
10/29/2007				538715	TAIL ROTOR
FINE TRANSVERSE CRACK(S) LOCATED NEAR THE CENTER PORTION OF PART.					
2007FA0001037				BEARING	WRONG PART
11/1/2007					NLG WHEEL
ON OCT 10, INFORMED BY TECH THAT THEY HAD AN INSTALLED NOSEWHEEL (PN 277A6000-851, SN 1170) ON AIRCRAFT, WITH A WRONG BEARING INSTALLED. IAW STS, THE ERROR WAS ONLY DISCOVERED AFTER THE WHEEL HAD BEEN INSTALLED, BUT BEFORE THE AC WAS RELEASED TO SERVICE. REPORTED ERROR WAS THAT THE INNER BEARING DIAMETER WAS 11MM TOO WIDE. ONCE WHEEL WAS RETURNED TO SHOP, INVESTIGATION SHOWED THAT A WRONG BEARING HAD BEEN INSTALLED. INSTEAD OF THE CORRECT BEARING, A MD80 BEARING HAD BEEN INSTALLED. INVESTIGATION OF THE ASSY PROCESS REVEALED NO DISCREPANCIES IN THE PROCESS ITSELF. IT HAS THEREFORE BEEN JUDGED AS A HUMAN ERROR. IN ORDER TO RAISE AWARENESS AMONG THE TECHNICIANS AND ENSURE PREVENTIVE MEASURES, THE PRODUCTION MANAGER HAS DONE 3 THINGS: BRIEFED ALL TECH IN SHOP ABOUT SERIOUSNESS OF INCIDENT. INSTRUCTED THE TECH WHO PREPARE WHEEL KITS BEFORE ASSY TO BE MORE AWARE THAT THE CORRECT BRG GOES IN THE KIT. INTRODUCED A MANDATORY DOUBLE CHECK AFTER WHEEL ASSY FOR THE NEXT 3 MONTHS, TO ENSURE THAT CORRECT BRG IS INSTALLED. (K)					
2007FA0001016	AEROSP	ALLSN		SKIN	WORN
11/6/2007	AS355F2	250C20			FUSELAGE
RT AND LT FUSELAGE SKIN AT TAILBOOM ATTACH BULKHEAD. FOUND WORKING RIVETS ON BOTH SIDES. (40) FOUND SKIN UNDER WORKING RIVETS WORN .018. ASB 05-00-42 AS FACTOR. FUSELAGE SENT TO A REPAIR FACILITY FOR SKIN REPLACEMENT. (K)					
T9NR200700001	AEROSP			WHEEL	CRACKED
11/6/2007	ATR42*			315182	MLG
OUR SHOP REPORTS THE PRESENCE OF AN UNUSUAL CRACK ON THIS WHEEL. IT LIES BETWEEN THE WHEEL'S LIGHTING HOLES (WEB), AND IS COMPLETELY CRACKED BETWEEN ADJACENT LIGHTING HOLES. THE WHEEL ASSEMBLY PN IS NOTED BELOW, BUT THE CRACK EXHIBITED ITSELF ON THE WHEEL HALF PN 300-824/10-1606					
T9NR200700002	AEROSP			WHEEL	CRACKED
11/6/2007	ATR42*			315182	ZONE 700
OUR SHOP REPORTS THE PRESENCE OF AN UNUSUAL CRACK ON THIS WHEEL. IT LIES BETWEEN THE WHEEL'S LIGHTING HOLES (WEB), AND IS COMPLETELY CRACKED BETWEEN ADJACENT LIGHTING HOLES. THE WHEEL ASSEMBLY PN IS NOTED BELOW, BUT THE CRACK EXHIBITED ITSELF ON THE WHEEL HALF PN 300-824/10-1606					
2007FA0001018	AMD	GARRTT		CONTROL UNIT	LEAKING

10/24/2007	FALCON900EX	TFE731*		CROSSFEED

FUEL LEAKING FROM CENTRAL LB CROSSFEED UNIT AND DRAIN TUBE CAP BROKEN. REF MFG SERVICE ADVISORY FSA900EX-EASY-28-10-03-R1. (K)

2007FA0001052	AMTR	ROTAX	STEERING SYS	SENSITIVITY
11/15/2007	SPORTSTAR	ROTAX912ULS		NLG

AFTER A NORMAL LANDING, CFI (WITH 80 HOURS IN TYPE) AND STUDENT (WITH 1.2 HOURS IN TYPE) LOST CONTROL OF THE AIRCRAFT, EXITED THE RUNWAY, AND CAME TO REST IN A DRAINAGE DITCH. THEY STATED THAT THE EXTREME SENSITIVITY OF THE NOSEWHEEL STEERING LED TO PILOT INDUCED OSCILLATIONS THAT GREW PROGRESSIVELY WORSE UNTIL THE AIRPLANE WAS COMPLETELY UNCONTROLLABLE. THE SENSITIVITY OF THE NOSEWHEEL STEERING IS A COMMON COMPLAINT, AND HAS BEEN CITED IN SEVERAL OTHER INCIDENTS.

2007FA0001011	BBAVIA	CONT	DRAIN	LEAKING
10/25/2007	7EC	O200*	SA56250	ENGINE OIL

INSTALLED QUICK DRAIN VALVE (OIL) ON NEW AIRCRAFT/ ENGINE. AIRCRAFT FLEW APPROX 1 HR , INITIAL FLIGHT TEST. VERY MINUTE OIL LEAK WAS NOTED FROM OIL QUICK DRAIN VALVE. REMOVED VALVE TO FIND VALVE SNAP RING IN OIL DRAINED FROM ENGINE, ALSO FOUND O-RING SPLIT. NOTE: NO DAMAGE TO ENGINE OCCURRED. (K)

2007FA0001012	BEECH	PWA	BARBERCOL	TRANSISTOR	FAILED
10/30/2007	200BEECH	PT6A60A		HYLZ50336001	TEMP CONTROL

PC BOARD IN ASSY PN HYLZ50336-001 HAD FAILURE, BURNED/ OVERHEATED TRANSISTOR. NOTE: FAN IN ASSY WAS WORKING. PC BOARD PN HYLZ 105-001. (K)

2007FA0001054	BEECH	CONT	CYLINDER HEAD	CRACKED
11/21/2007	36BEECH	IO520BA	TISN712ACA	ENGINE

CRACKED BEHIND INJECTOR BETWEEN FIRST AND THIRD FIN. SAME AS ALL THE OTHERS. THE (NEW) E-SERIES CYLINDER HEAD IS DEFECTIVE. (K)

2007FA0001055	BEECH	CONT	CYLINDER HEAD	CRACKED
11/21/2007	36BEECH	IO520BA	TISN712ACA	ENGINE

CYLINDER HEAD CRACKED BEHIND INJECTOR BETWEEN FIN NR 1 AND 3. DEFECTIVE MFG PROCESS. (K)

2007FA0001066	BEECH	TRANSMITTER	INOPERATIVE
11/19/2007	400A	100TA1966N4	TE FLAPS

TROUBLESHOT IN-FLIGHT (FLAP ASSYMETRY) ANNUNCIATOR INDICATION. FOUND RT FLAP POSITION TRANSMITTER RESISTANCE TO GO ABOVE SERVICE LIMITS WHEN COLD SOAKED. REPLACED RT FLAP POSITION TRANSMITTER AND ADJUSTED LT , RT FLAP FOLLOW-UP SWITCHES AND POSITION TRANSMITTER RIGGING AS REQUIRED. VERIFIED FLAP SYSTEM RIGGING CABLE TENSIONS WITHIN SERVICE LIMITS. FLAP SYS FUNCTIONAL TESTS OK. SUGGEST MFG INVESTIGATE CURRENT PRODUCTION TRANSMITTER ASSY FOR QC OR MOISTURE INGRESS FAULTS. HBC PN 45AS86805-031, MFG DATE 8/07/2006. (K)

2007FA0001067	BEECH	CONTROL VALVE	MALFUNCTIONED
11/19/2007	400A	64760	THRUST REVERSER

TROUBLESHOT INOPERATIVE THRUST REVERSER DEPLOYMENT. FOUND LT, RT REVERSERS MECHANICALLY STIFF AND DIFFICULT TO OPERATE. THRUST REVERSER LINKS AND PIVOTS FOUND DRY, INITIAL 400 HR LUBRICATION NOT DUE FOR 55 HRS. LUBED REVERSERS IAW MM. 12-20-00, VERIFIED OPERATIONS OK. FOUND LT REVERSER NOT DEPLOYING UNTIL AFTER RT DEPLOYED. REPLACED LT CONTROL VALVE, OPERATIONAL CHECKS NORMAL. SUGGEST ALL THRUST REVERSER LUBES BE COMPLIED WITH AT 200 HR INITIAL INSPECTION. SUGGEST MFG INVESTIGATE CNTRL VALVE FOR POSSIBLE QUALITY CONTROL OR SYSTEM CONTAMINATION ISSUES. (K)

2007FA0001068	BEECH	PWA	BONDING JUMPER	FRAYED

11/11/2007	400A	JT15D5	MS250836BB5	ELEVATOR

TROUBLESHOT REPORT OF HORIZONTAL STABILIZER ANTI-ICE SYSTEM FAIL INDICATION. NOTED ELEVATOR HORN HEAT SYSTEM RESISTANCE READINGS ERRATIC WHEN ELEVATORS MOVED. FOUND ELEVATOR BONDING JUMPERS FRAYED AND CORRODED. REPLACED ELEVATOR BONDING JUMPERS, ELEVATOR HORN HEATER RESISTANCE READINGS NOW WITHIN SERVICE LIMITS. HORIZONTAL STABILIZER ANTI-ICE SYSTEM TESTS IAW MM 30-12-00 NORMAL, NO FAULTS INDICATED. RECOMMEND TECH/INSP NOTE CONDITION OF ELEVATOR BONDING JUMPERS CLOSELY DURING SCHEDULED INSPECTIONS AND REPLACE JUMPERS WHEN DETERIORATION EVIDENT. (K)

2007FA0001069	BEECH	PWA	PIPE	CRACKED
11/11/2007	400A	JT15D5		GAS GENERATOR

PERFORMED HOT SECTION INSPECTION PRIOR TO SCHEDULED 1800 HR INTERVAL TO INVESTIGATE COMPLAINT OF SLOW STARTING. UPON DISASSEMBLY, FOUND DIFFUSER PIPES OF GAS GENERATOR CASE CRACKED AND PORTIONS MISSING AT APPROXIMATE 10:30, 11:00 POSITION. SUSPECT CAUSED BY STREAKING FUEL NOZZLES WITH COKED-UP TIPS FROM LOW IDLE OPERATION WITH EFC OFF. PILOTS AND TECH SHOULD BE AWARE OF MONITORING ENGINE RPM DURING TAXING OPERATIONS WITH EFC TURNED-OFF. (K)

2007FA0000987	BEECH	PWA	BULKHEAD	CRACKED
11/1/2007	400A	JT15D5	45A3490111	BS 329

WHILE PERFORMING AN A-C INSPECTION FOUND RT AFT FUSELAGE BLEED AIR LINE ATTACH BRACKET PULLED FROM FUSELAGE BULKHEAD RESULTING IN A CRACK IN THE BULKHEAD AT FRAME STATION 329.92. RECOMMEND CONTACTING MFG FOR REPAIR OPTIONS CRACK HAS BEEN FOUND ON BOTH SIDES OF THE AIRCRAFT.(K)

2007FA0000988	BEECH	PWA	PIVOT	LOOSE
10/31/2007	400A	JT15D5	45A2100291	HORIZONTAL STAB

WHILE PERFORMING AN A-C INSPECTION FOUND 8 LOOSE RIVETS IN THE FORWARD RIVET LINE OF THE ATTACHMENT PIVOT FITTING PN 45A2118311 ON THE BOTTOM OF THE HORIZONTAL STABILIZER. IT IS SUSPECTED THAT THE LOOSE RIVETS WERE CAUSED BY FATIGUE AND AGE.

2007FA0000971	BEECH	PWA	SQUAT SWITCH	FAILED
10/31/2007	400BEECH	JT15D4	41EN16	LEFT

PILOTS REPORTED THAT THE THRUST REVERSER ARM LIGHTS WERE ILLUMINATED IN FLIGHT. PILOTS LANDED AT LZU MAINTENANCE FOUND A FAULTY LT GROUND SAFE SWITCH. MAINTENANCE REPLACED SWITCH WITH NEW UNIT AIRCRAFT CHECKED GOOD.

2007FA0001050	BEECH	PWA	ENGINE	LEAKING
11/27/2007	400BEECH	JT15D5		NR 1

ON THE DECENT, THE CREW HAD AN OIL PRESSURE LOW LIGHT AT THAT TIME THE CREW OBSERVED THE OIL PRESSURE GAUGE WAS INDICATING LOW PRESSURE. THE CREW SHUTDOWN THE NR 1 ENGINE DECLARED AN EMERGENCY AND LANDED UNEVENTFULLY. UPON INSPECTION BY MAINTENANCE IT WAS FOUND THAT THE OIL FILL CAP WAS NOT PROPERLY LATCHED DOWN AND THAT OIL HAD LEAKED OUT OVER THE COURSE OF THE FLIGHT. DO TO THE AMOUNT OF OIL MISSING FROM THE OIL TANK THE ENGINE IS BEING REMOVED FOR FURTHER INSPECTION.

ATL07LA057	BEECH	CONT	FUEL CELL	LEAKING
3/19/2007	95B55	IO470*		RT WING

DURING START OF RT ENGINE, PILOT REPORTED HEARING A LOUD THUMP, NOTED FIRE COMING FROM THE BOTTOM OF THE RT COWLING. SHUTDOWN ENGINES, EVACUATED AIRCRAFT, AND NOTED APPARENT EXPLOSION HAD OCCURRED IN RT WING. VISUAL INSPECTION DID NOT REVEAL CAUSE OF EVENT. WING STILL HELD APPROXIMATELY 40 GALLONS OF FUEL AND WAS NOT LEAKING ALTHOUGH BOX CELL LINER HAD BEEN CRACKED OPEN FROM FORCE OF EXPLOSION. FUEL TRUCK WAS DISPATCHED AND WING WAS FULLY TOPPED OFF TO INSPECT FOR LEAKS; NONE WERE NOTED. AIR IN RT FUEL SYSTEM WAS DISPLACED AND AFTER APPROXIMATELY 10 MINUTES A LEAK WAS DETECTED IN THE RT WHEEL WELL. FURTHER INVESTIGATION REVEALED THIS LEAK WAS ORIGINATING FROM A B-NUT ON THE OUTPUT SIDE OF THE AUXILIARY PUMP FUEL FILTER. LEAK MEASURED

APPROXIMATELY 3 DROPS PER MINUTE AND WAS COLLECTING INSIDE WHEEL WELL AND SHOWED EVIDENCE OF TRAILING THROUGHOUT SPAR AREA. IN ADDITION TO THE FUEL LEAKING IN THIS AREA, IT WAS NOTED THE RT ENGINE, OB EXHAUST STACK WAS POINTED IN AN UNUSUAL MANNER THAT DIRECTED IT STRAIGHT TO THE AREA IN WHICH THE FUEL WAS LEAKING.

TIMR20070009	BEECH	PWA	ACTUATOR	CRACKED
9/28/2007	99	PT6*	993880011	MLG

AFTER SELECTING GEAR DOWN ON APPROACH, THE PILOT NOTICED THAT HE DID NOT HAVE A GREEN (SAFE) INDICATION FOR THE NOSE GEAR. HE FOLLOWED THE EMERGENCY PROCEDURE TO PUMP THE GEAR DOWN BUT WAS UNABLE TO BUILD UP PRESSURE OR GET A GREEN LIGHT. PILOT THEN LANDED AND THE NOSE GEAR COLLAPSED. INVESTIGATION FOUND THAT THE LT MAIN GEAR ACTUATOR END CAP HAD CRACKED AND ALLOWED THE EMERGENCY SYSTEM FLUID TO VENT OVERBOARD, PREVENTING THE NOSE ACTUATOR FROM EXTENDING FULLY.

2007FA0001058	BEECH	PWA	CONNECTOR	ARCED
12/4/2007	A100	PT6A60A		ELECTRICAL

PARTIAL ELECTRICAL POWER LOSS TO COMPONENTS FROM RT NR 1 AND NR 2 SUBPANEL CIRCUIT BREAKERS. FOUND RT CIRCUIT PANEL CONNECTOR SOCKET MODULE AND SOCKET RT 1B BURNED. REPLACED MODULE (NR 8 WIRE-4 SOCKET) AND 4 SOCKETS. REPLACED PINS (4). FUNCTION CHECK SATISFACTORY. SUGGEST THESE HEAVY WIRE CONNECTIONS BE CHECKED MORE CLOSELY ON THE OLDER AIRCRAFT. THIS PARTICULAR AIRCRAFT IS 30 YEARS OLD.

2007FA0000995	BEECH		RELAY	MELTED
11/7/2007	A200		6041H190	RT STARTER GEN

RT STARTER GENERATOR RELAY P/N: 6041H190 MELTED AT BUSS BAR CONNECTION.

68DA	BEECH	GARRTT	SKIN	WRINKLED
2/13/2007	B100	TPE331*		HORIZONTAL STAB

DURING ROUTINE MAINTENANCE, MECHANIC DISCOVERED THAT THE HORIZONTAL STABILIZER SKIN WAS WRINKLED AT THE AFT RT ATTACH PIVOT POINT.

2007FA0000993	BEECH		RELAY	INTERMITTENT
8/28/2006	B200		SM50D7	TE FLAP MOTOR

DURING FLIGHT WHEN THE FLAPS SELECTED DOWN & DID NOT RESPOND. AIRCRAFT LANDED IN A FLAPS UP CONDITION & DELIVERED TO MAINTENANCE. INVESTIGATION REVEALED THE FLAP MOTOR POWER RELAY WAS OPERATING INTERMITTENTLY. A NEW FLAP MOTOR RELAY, PROCURED FROM RAPID (RAYTHEON PARTS INVENTORY AND DISTRIBUTION SYSTEM) WAS INSTALLED AND THE MALFUNCTION WAS RESOLVED. THE REMOVED / FAILED RELAY HAD BEEN IN SERVICE 22 MONTHS AND 514.5 FLIGHT HOURS.

IWP2720085003	BEECH	BEECH	SPRING	MISINSTALLED
11/23/2007	B60		608100961	MLG DOWNLOCK

THIS AIRCRAFT EXPERIENCED A BENT /DAMAGED RT MAIN GEAR RETRACT ROD ASSEMBLY P/N 60-810057-617. A CURRENT OVERLOAD OF THE LANDING GEAR MOTOR CIRCUIT. THE RT MAIN GEAR FAILED TO EXTEND. THE EMERGENCY GEAR FAILED TO ALSO EXTEND THE RETRACTED MAIN. AC WAS FORCED TO LAND GEAR UP. INVESTIGATION REVEALED AN IMPROPERLY INSTALLED TORSION SPRING (IN QUESTIONABLE CONDITION) ON THE RT MAIN DOWN-LOCK CABLE (JURY STRUT). INVESTIGATION REVEALED THAT THE IMPROPER INSTALLATION OF THIS SPRING RESULTED IN THE RT DOWN LOCK CABLE MOVING INTO AND ENTANGLING WITH THE DRAG BRACE KNEE JOINT AND UPLOCK DOWNLOCK PIVOT POINT DURING RETRACTION. HOWEVER- IT HAS NOT BEEN PROVEN BY FAA INSPECTORS, THAT THE IMPROPER INSTALLATION OF THIS SPRING CAUSED OR IN ANYWAY CONTRIBUTED TO THE FAILURE OF THE RT MAIN GEAR SYSTEM.

2007FA0000986	BEECH	LYC	LINE	CHAFED
10/8/2007	C24R	IO360A1A	165580001135	HYD SYSTEM

PILOT REPORTED HAVING TO SERVICE BRAKE HYDRAULIC RESERVOIR AND/OR RT SIDE OF THE BRAKES VERY

SOFT. DURING INSPECTION, FOUND HYDRAULIC FLUID ON WIRE BUNDLE FORWARD OF COPILOTS RT RUDDER PEDAL. CLEANED LINE AND LT LINE SIT FOR A COUPLE DAYS, WHILE DOING AN INSPECTION ON THE REST OF THE AIRCRAFT. FOUND HYDRAULIC FLUID ON LINE. REMOVAL OF THE LINE REVEALED A WORN/CHAFED SPOT APPROX 12 INCHES TO THE LT OF THE B-NUT WHERE IT ATTACHES TO THE BULKHEAD FITTING FROM THE RESERVOIR. DID NOT SEE THE CAUSE OF THE CHAFED AREA ON THE TUBE. SUSPECT AIRFRAME VIBRATION CAUSED THE LINE TO VIBRATE. RECOMMEND THAT ALL LINES ARE CHECKED FOR CLEARANCE FROM AIRFRAME STRUCTURE OR OTHER LINES. (K)

2007FA0001030	BEECH	PWA	SUPPORT BRACKET	CRACKED
11/6/2007	C90	PT6*	5012007716	MLGWW

DRAG LEG SUPPORT BRACKETS FOUND CRACKED ON BOTH LT AND RT SIDES DURING A ROUTINE INSPECTION. MOST LIKELY FATIGUE CRACKS OR A ROUGH LANDING. (K)

2007FA0001031	BEECH	PWA	SUPPORT BRACKET	CRACKED
11/6/2007	C90	PT6*	5012007717	MLG WW

DRAG LEG SUPPORT BRACKETS FOUND CRACKED ON BOTH LT AND RT SIDES DURING A ROUTINE INSPECTION. MOST LIKELY FATIGUE CRACKS OR A ROUGH LANDING. (K)

2007FA0001029	BEECH	CONT	CYLINDER HEAD	CRACKED
11/13/2007	D55	TSIO520EB	TISN712ACA	ENGINE

CRACKED CYLINDER HEAD BEHIND INJECTOR BETWEEN FIN NR 1, NR 3. DEFECTIVE MFG PROCESS. (K)

2007FA0001019	BEECH	CONT	CYLINDER HEAD	CRACKED
11/13/2007	D55	TSIO520EB	TISN712ACA	ENGINE

CRACKED CYL HEAD BEHIND INJECTOR BETWEEN FIN NR 12, NR 3. DEFECTIVE MFG PROCESS. (K)

2007FA0001020	BEECH	CONT	CYLINDER HEAD	CRACKED
11/13/2007	D55	TSIO520EB	TISN712ACA	NR 3

CRACKED CYLINDER HEAD BEHIND INJECTOR BETWEEN FIN NR 1, NR 3. DEFECTIVE MFG PROCESS. (K)

2007FA0001021	BEECH	CONT	CYLINDER HEAD	CRACKED
11/13/2007	D55	TSIO520EB	TISN712ACA	ENGINE

CRACKED CYLINDER HEAD BEHIND INJECTOR BETWEEN FIN NR 1, NR 3. DEFECTIVE MFG PROCESS. (K)

2007FA0001022	BEECH	CONT	CYLINDER HEAD	CRACKED
11/13/2007	D55	TSIO520EB	TISN712ACA	ENGINE

CRACKED CYLINDER HEAD BEHIND INJECTOR BETWEEN FIN NR 1, NR 3. DEFECTIVE MFG PROCESS. (K)

2007FA0001023	BEECH	CONT	CYLINDER HEAD	CRACKED
11/13/2007	D55	TSIO520EB	TISN712ACA	ENGINE

CRACKED CYLINDER HEAD BEHIND INJECTOR BETWEEN FIN NR 1, NR 3. DEFECTIVE MFG PROCESS. (K)

120507	BLANCA		V-BELT	DISINTEGRATED
12/5/2007	14132		A1902	ENGINE TO TRANS

DURING IFR TRAINING FLIGHT WHILE IN CROSS COUNTRY CRUISE, LOUD NOISES FROM ENGINE AREA PROMPTED CREW TO MAKE UNSCHEDULED LANDING TO SAFE AREA OF FLORIDA STATE ROAD 80 MEDIAN TURN AROUND PAVEMENT. UPON LANDING FOUND AFT BELT OF MAIN DRIVE BELT HAD SHED ITS OUTER LAYER AND DISINTEGRATED, CAUSING DAMAGE ONLY TO THE FAN SHROUD BEHIND THE ENGINE OIL COOOLER, AND MINOR SKIN DENT BEHIND THE FUEL TANK IN OUTER SKIN. ONE MULTIFUNCTION ANTENNA RG58 TNC CONNECTOR DAMAGED. AIRCRAFT TRAILERED TO HANGAR AND AFFECTED AREAS DISSASSEMBLED. REPLACEMANT SERVICABLE FAN SHROUD ASSEMBLY TO BE INSTALLED WITH NEW PARTS ORDERED FROM ROBINSON. NO

ENGINE OR ROTOR OVERSPEED OCCURED. AUTOROTATION WAS NOT REQUIRED. PART 91 FLIGHT TRAINING OPERATION AT TIME OF FAILURE. CREW FOLLOWED PROPER PROCEDURES AND NO ADDITIONL AIRCRAFT DAMAGE AS A RESULT.

220757	BOEING	BOEING	HOUSING	CRACKED
12/5/2007	737		65446747	MODULE

HOUSING WAS FOUND CRACKED DURING TEARDOWN IN SHOP.

AFASVRA3181	CESSNA	LYC	BATTERY	OVERHEATED
11/14/2007	172M	O320E2D	G25	MASTER

AIRCRAFT 12 VOLT BATTERY OVERHEATED CAUSING: ELECTROLYTE BOILING OVER, CORRODING OF ALUMINUM BATTERY BOX, LANDING LIGHT PLASTIC SWITCH MELTING, LANDING LIGHT PLASTIC CONNECTOR IN COWLING MELTING, LANDING LIGHT INOP AND ALTERNATOR FAILURE WITHOUT THE LANDING LIGHT CB TRIPPING. PILOTS COMPLYING WITH FAA RECOMMENDATIONS OF LEAVING LANDING LIGHTS ON WITHIN 5 NM OF AIRPORT ARE THE CAUSE OF THIS PROBLEM DURING TRAINING SORTIES OF 1 TO 2 HOURS WITH THE LANDING LIGHTS ON FOR THE DURATION OF FLIGHT. THESE AIRCRAFT ARE FLOWN IN A PILOT TRAINING OPERATION WHERE SORTIES ARE 1 TO 2 HOURS ENDURANCE AND 8 TO 10 TAKEOFFS AND LANDINGS WITH THE LANDING LIGHT/LIGHTS ON FOR THE DURATION OF THE FLIGHT.

2007FA0001056	CESSNA	LYC	CIRCUIT BREAKER	INOPERATIVE
11/13/2007	172R	IO360A1A		

PILOT SQUAWKED ON INTERMITTENT SWITCH. THE SWITCH WAS DISASSEMBLED AND INSPECTED. THE BONDED INTERNAL CONDUCTOR HAD SEPARATED FROM CONTACTOR. A TOTAL OF 20 SWITCHES IN OUR FLEET, HAVE ALREADY BEEN REPLACED. UPON INSPECTION, NUMEROUS SWITCHES HAD SIMILAR PROBLEMS INTERNALLY. (K)

2007FA0001070	CESSNA	LYC	CONTROL UNIT	FAILED
12/1/2007	172S	IO360L2A	AC2101	ALTERNATOR

THE AIRCRAFT FACTORY INSTALLED ACU BEGAN FAILING AT 200 HOURS (INTERMITTENT ALTERNATOR DROPPING (OFF LINE) FOR A FEW SECONDS) (ON ONE OCCASION, THE FIELD CB DISENGAGED) A NEW ACU WAS INSTALLED AT 215.9. AT 246.1 THE SAME PROBLEM SURFACED, AND THE THIRD ACU WAS INSTALLED. THE SERVICE CENTER HAS HAD THE SAME PROBLEM WITH OTHER AC. (K)

ZB0R20070008	CESSNA	LYC	DETECTOR	INOPERATIVE
11/2/2007	172S	IO360L2A		CARBON MONOXIDE

CARBON MONOXIDE DETECTOR FAILED. SECOND FAILURE WITHIN 6 MONTHS

2007FA0001035	CESSNA	CONT	LINE	MISROUTED
11/14/2007	180J	O470*	0500106326	FUEL SYS

(2) AILERON CABLES, (1) FLAP CABLE AND THE FUEL LINE ARE ALL ROUTED THROUGH THE LT LOWER AFT DOOR POST AREA. THE FUEL LINE IS PROTECTED BY A PLASTIC SLEEVE BUT THE CABLE WORE THROUGH THE SLEEVE AND WAS WEARING INTO THE FUEL LINE. THE LINE IS APPROX 20 INCHES LONG WITH (4) BENDS. SUGGEST A (1) TIME INSPECTION IN CASE OTHER AC MIGHT HAVE THIS PROBLEM. (K)

2007FA0000981	CESSNA	PWA	RELIEF VALVE	SEPARATED
11/3/2007	208B	PT6A114A	RV05268	PNEUMATIC SYS

RELIEF VALVE FOR BLEED AIR PNEUMATIC SYSTEM END WASHER AND CAP SEPARATED FROM VALVE AND LAYING IN BOTTOM OF COWLING. SUSPECT RIVET HOLDING PARTS ON IS TOO SOFT. THIS IS THE THIRD VALVE TO FAIL LIKE THIS ON DIFFERENT AIRCRAFT IN THE LAST MONTH. AND ALL WERE NEW WITH LESS THAN 70 HOURS TIME IN SERVICE. (K)

2007FA0001024	CESSNA	CONT	CYLINDER HEAD	CRACKED
11/8/2007	402B	TSIO520EB	TISN712BCA	ENGINE

CRACKED CYLINDER HEAD BEHIND INJECTOR BETWEEN FIN NR1, NR3. DEFECT IN MFG PROCESS. (K)

2007FA0001025	CESSNA	CONT	CYLINDER HEAD	CRACKED
11/8/2007	402B	TSIO520EB	TISN712BCA	ENGINE

CRACKED CYLINDER HEAD BEHIND INJECTOR BETWEEN FIN NR 1, NR 3. DEFECT IN MFG PROCESS. (K)

2007FA0001026	CESSNA	CONT	CYLINDER HEAD	CRACKED
11/8/2007	402B	TSIO520EB	TISN712BCA	ENGINE

CRACKED CYLINDER HEAD BEHIND INJECTOR BETWEEN FIN NR 1, NR 3. DEFECT IN MFG PROCESS. (K)

2007FA0001027	CESSNA	CONT	CYLINDER HEAD	CRACKED
11/8/2007	402B	TSIO520EB	TISN712BCA	ENGINE

CRACKED CYL HEAD BEHIND INJECTOR BETWEEN FIN NR 1, NR 3. (K)

2007FA0001028	CESSNA	CONT	CYLINDER HEAD	CRACKED
11/7/2007	402B	TSIO520EB	TISN712BCA	ENGINE

CRACKED CYLINDER HEAD BEHIND INJECTOR BETWEEN FIN NR1, NR3. DEFECT IN MFG PROCESS. (K)

2007FA0000996	CESSNA		TUBE	BROKEN
11/7/2007	414A		086210057	TE FLAPS

DURING FLAP EXTENSION THE RT SIDE FLAPS RETRACTED SUDDENLY LEAVING THE LT FLAPS DOWN. FOUND THE PUSHROD TUBE CONNECTING THE IB AND MIDDLE FLAP BELLCRANK TO HAVE FAILED AT THE OB END OF THE TUBE. THE TUBE APPEARS TO HAVE BEEN ABOUT 60 PERCENT CRACKED THROUGH THE DIAMETER FOR SOME TIME, POSSIBLY SINCE NEW. THIS FAILURE OCCURRED JUST BELOW THE LOCK NUT WHICH SECURES THE ROD END TO THE TUBE, AND THE FAILED AREA IS IN THE THREADED PORTION OF THE TUBE MAKING IT DIFFICULT OR IMPOSSIBLE TO SEE A DEVELOPING CRACK.

2007FA0001053	CESSNA	CONT	LOCK PLATE	MISSING
11/30/2007	421B	GTSIO520*	641909	CRANKSHAFT

THIS ENGINE WAS REMOVED ON AUGUST 31, 2007, HOBBS TIME 1523.9 DUE TO CRACKED ENGINE CASE. THE ENGINE WAS SENT TO RAM AIRCRAFT FOR REPAIR. RAM REPAIRED THE ENGINE ON SEPT 20, 2007. THIS ENGINE WAS REINSTALLED BACK ON THE AIRCRAFT. DURING A NIGHT FLIGHT ON NOVEMBER 20, 2007 THE PILOT HAD AN ALTERNATOR FAILURE. HE REPORTED THE PROBLEM THE NEXT DAY. UPON INSPECTION OF THE ALTERNATOR, IT WAS FOUND IN PIECES, WITH THE MOUNT HOUSING STILL ATTACHED TO THE ENGINE. THE INSIDE OF THE ALTERNATOR INSTALLATION HOLE WAS INSPECTED.THE INSPECTION REVEALED THAT THE ATTACH BOLTS ON THE ALTERNATOR FACE GEAR HAD NO TAB LOCK PLATES INSTALLED. THE ATTACH BOLTS CAME LOOSE AND DAMAGED THE ENGINE AND ALTERNATOR. RAM AIRCRAFT WAS NOTIFIED OF THE PROBLEM. IT IS RECOMMENDED THAT BEFORE ENGINE INSTALLATION, INSPECT FOR MISSING PARTS IN THE ALTERNATOR ATTACH HOLE. THE ENGINE HAD 65.6 HOURS SINCE PREVIOUS INSTALLATION.

AMCR200700004	CESSNA	WILINT	JAM-NUT	WRONG PART
12/7/2007	525	FJ44	NAS509L6	TE FLAPS

DURING COMPLIANCE WITH SL525B-27-01 WHICH IS CHECKING FLAP PUSH ROD FOR IMPROPER SAFETY WIRING, FOUND THAT THE AFT JAM NUT (NAS509L6) WAS UP AGAINST THE CENTER STUD (6365028-10) RATHER THAN TIGHT AGAINST THE ROD END TUBE (6365028-9). EVERYTHING WAS SAFETIED IN THIS POSITION.

2007FA0001047	CESSNA	WILINT	LINE	SEPARATED
11/7/2007	525A	FJ442A	632701617	HYDRAULIC SYS

FOUND FLAP RETRACT LINE SEPARATED FROM BACK OF B-NUT. SYSTEM FLUID WAS LOST. SUSPECT DEFECT WAS AT TIME OF MANUFACTURE. (K)

2007FA0001013	CESSNA	PWA	FIRE LOOP	FAILED
11/5/2007	560XL	PW545A	991203611	NR 1 ENGINE

NR 1 ENGINE FIRE LOOP FAILED CAUSING THE NR 1 ENGINE FIRE INDICATOR IN COCKPIT TO ERRONEOUSLY INDICATE A FIRE. CREW FIRED BOTH FIRE EXTINGUISHERS FOR THE ENGINE WHICH DID NOT EXTINGUISH THE

FIRE INDICATOR. THE CREW THEN DECLARED AN IN-FLIGHT EMERGENCY. (K)

2007FA0001008	CESSNA	PWA	FIRE LOOP	FAILED
10/29/2007	560XL	PW545A	991203611	NR 1 ENGINE

NR 1 ENGINE FIRE LOOP FAILED, CAUSING THE NR 1 ENGINE FIRE INDICATOR IN COCKPIT TO ERRONEOUSLY INDICATE A FIRE. CREW FIRED BOTH FIRE EXTINGUISHERS FOR THE ENGINE WHICH DID NOT EXTINGUISH THE FIRE INDICATOR. THE CREW THEN DECLARED AN IN-FLIGHT EMERGENCY. (K)

2007FA0001036	CESSNA	ALLSN	WINDSHIELD	FAILED
11/8/2007	750	AE3007C		COCKPIT

AC IN FLIGHT AND AT CRUISE ALTITUDE THE LT WINDSHIELD HEAT FAILED, A VISABLE SHORT OR ARCING AREA WAS SEEN, CONDITION OF UNIT MATCHED WITH SWITCH (OFF) 30 SEC LATER WINDSHIELD CRACKED IN A SPIDER WEB FASHION. AC LANDED IN STL. WINDSHIELD REPLACED BY SERVICE CENTER WITH A NEW STYLE WINDSHIELD PN 139731-1 (9914380-13).

2007FA0001045	CESSNA	CONT	ALTERNATOR	FAILED
11/13/2007	P210N	TSIO520P	E3FF10300AA	

DURING NIGHT IMC APPROACH, LOW VOLTAGE LIGHT ILLUMINATED AND BUS VOLTAGE DROPPED BELOW 24 VOLTS. PILOT RECYCLED ALTERNATOR SWITCH BUT WAS UNABLE TO KEEP ALTERNATOR ON LINE. PILOT REDUCED LOADS AND SUCCESSFULLY EXECUTED APPROACH AND LANDED WITHOUT INCIDENT. CHARGING SYSTEM TROUBLESHOOT BY MECHANIC. FOUND LATERNATOR OUTPUT TO BE 26 VOLTS UNLOADED, AND WITH 50 PERCENT LOAD ON BUSS, LATERNATOR VOLTAGE WOULD DROP BELOW 24 VOLTS. NOTE: SECOND ALTERNATOR FAILURE IN 50 HOURS. (K)

2007FA0001046	CESSNA	CONT	ALTERNATOR	FAILED
11/10/2007	P210N	TSIO520P	E3FF10300AA	

DURING DAY VMC FLIGHT, LOW VOLTAGE LIGHT ILLUMINATED AND BUS VOLTAGE DROPPED BELOW 24 VOLTS. PILOT MINIMIZED LOADS, DID A MANUAL GEAR EXTENSION, AND LANDED WITHOUT INCIDENT. CHARGING SYSTEM TROUBLESHOOT BY MECHANIC. FOUND ALTERNATOR OUTPUT TO BE 26 VOLTS UNLOADED, AND WITH 50 PERCENT LOAD ON BUS, ALTERNATOR VOLTAGE WOULD DROP BELOW 24 VOLTS. NOTE: ALTERNATOR OVERHAULED. (K)

2007FA0001048	CESSNA		CASTING	CRACKED
9/11/2007	T206H		12116013	MLG

AIRCRAFT OPERATED ON MOSTLY UNIMPROVED AIRSTRIPS. PART IS SAME AS 206F AND G MODELS. PART IN QUESTION WAS INSTALLED AT TIME OF MFG OF AIRPLANE. CASTING CRACKED AND FAILED UPON LANDING. AFT BOLT ALSO WAS CRACKED AND SHEARED. LANDING WAS A NORMAL APPROACH AND LANDING. GEAR LEG BROKE LOOSE FROM OB CASTING AND PUSHED BACKWARDS, PINCHING BRAKE LINE AND LOCKING UP LT BRAKE. (K)

2007FA0001044	CESSNA		CASTING	CRACKED
11/14/2007	T206H		12116013	LT MLG

AIRCRAFT OPERATED ON MOSTLY UNIMPROVED AIRSTRIPS. PART IS SAME AS 206F AND G MODELS. PART IN QUESTION WAS INSTALLED AT TIME OF MFG OF AIRPLANE. CASTING IS CRACKED IN (3) DIFFERENT LOCATIONS. WE OPERATE NUMEROUS OF THESE AC AND HAVE A LONG HISTORY WITH 206 AIRCRAFT. WE HAVE SEEN CRACKS OF THIS NATURE BEFORE, BUT RARELY WITH SO LITTLE TIME IN SERVICE. (K)

2007FA0001034	CESSNA	LYC	DOOR	MISRIGGED
9/13/2007	T206H	TIO540AJ1A	1211673323	RT AFT CARGO

MM (52-30-00 PG 201), (THE AFT DOOR IS HINGED AT FUSELAGE STA 112 AND IS A STRUCTURAL, LOAD CARRYING MEMBER WHEN CLOSED AND LOCKED). REMOVED AFT CARGO DOOR ROYALITE AND TRIM TO GAIN ACCESS TO LWR AFT CABIN LOWER HOOK ADJUSTMENT ROD. THIS WAS DUE TO A CLUB MEMBER IMPROPERLY CLOSING THE DOOR AND BENDING THE ROD. THE PERSON FAILED TO PULL-DOWN RED HANDLE WHEN CLOSING DOOR AND JAMMED THE LOWER HOOK. HOWEVER, FOUND THE ADJUSTMENT RODS LOOSE(UPPER AND LOWER) AND

WOULD EASILY TURN, INCLUDING THE TURNBUCKLES, UPPER AND LWR. THIS WAS DUE TO THE JAM NUTS FOR THE TURNBUCKLES LOOSE AND/OR BACKED OFF TO WHERE THERE WERE BOTTOM OF THREADS ON THE ADJUSTMENT RODS FOR THE HOOKS. IF LEFT UNADDRESSED COULD CAUSE PREVENTING PROPER ENGAGEMENT OF THE AFT CARGO DOOR HOOKS. FOUND ON CLEVIS PIN MISSING COTTER PIN. THIS COTTER PIN IS TO PREVENT THE CLEVIS PIN FROM BACKING OUT AND THUS PREVENTING HOOK MECHANISM FROM NOT WORKING PROPERLY. FOUND UPPER HOOK ADJUSTMENT RODS WOULD FLEX WHEN UPPER HOOK AS ENGAGED. APPEARS MISRIGGED. (K)

243DR1	CESSNA	CONT	SERVO	MISINSTALLED
11/21/2007	TU206G	TSIO520*	1C7921888	ELEVATOR TRIM

WHILE UNDERGOING A SCHEDULED INSPECTION, MECHANIC FOUND ELEVATOR TRIM SYS WAS MISRIGGED. TRAVEL LIMITS WERE NOT CORRECT AND WERE ACTUALLY RIGGED OPPOSITE WITH REGARDS TO MAX TRAVEL UP/DOWN. TRAVEL LIMITS IN MM NR D2070-3-13 FIGURE 1-1 WERE MISINTERPRETED, MFG SHOULD REVISE THIS MANUAL SECTION TO BE MORE SPECIFIC SINCE WE HAVE SEEN THIS BEFORE. ADDITIONALLY IT WAS FOUND THAT ELEVATOR TRIM SYS COULD NOT BE RIGGED BECAUSE CENTURY 2000 AUTOPILOT ELEVATOR TRIM SERVO WAS NOT INSTALLED CORRECTLY WHEN SYS WAS INSTALLED ON 10/9/2001 UNDER STC SA3479SW-D. FOUND SERVO MISMOUNTED, IT DID NOT MATCH CENTURY DRAWING 69D1754. REINSTALLED THE TRIM SERVO IAW THE STC DRAWINGS.

OMKR200711211	CESSNA	CONT	ADJUSTER	IMPROPER PART
11/21/2007	U206G	IO520*	443030401	HARNESS ADJUSTER

AD 2004-19-01C CALLS FOR A SPRING TO BE REMOVED FROM SHOULDER HARNESS ADJUSTER P/N443030-401, THAT WAS INADVERTENTLY INSTALLED ON A CERTAIN BATCH OF ACCESSORY KITS SHIPPED FROM MFG 1984 THROUGH 1986. THIS RESULTED IN AD 86-26-04 BEING ISSUED. CURRENTLY HAVE (2) AIRCRAFT IN THE HANGAR WITH THIS PN ADJUSTER WITH SPRINGS INSTALLED. THEY DO NOT FALL INTO THE AFFECTIVITY RANGE OF THE AD OR SB. CONTACTED THE ENGINEER ON THE BACK OF THE AD, AND HE INSISTS I DO NOT HAVE AN AFFECTED ADJUSTER. HE HAD A MFG REP. WHO WAS FAMILIAR WITH THE AD CONTACT ME AND I FOUND OUT THE AD RESULTS FROM (INCORRECTLY) INSTALLED SPRINGS. I SUBMIT THE AD REQUIRES CLARITY AS TO THE DIFFERENCE BETWEEN (INADVERTENTLY INSTALLED) AND (INCORRECTLY INSTALLED) SPRINGS, AS THESE PARTS HAVE WIDESPREAD USE IN THE FIELD WITH NO INFORMATION ON HOW TO TELL THEM APART, OTHER THAN A LOGBOOK ENTRY, WHICH MAY OR MAY NOT BE THERE. AD 2004-19-01C TELLS YOU TO FOLLOW THE MFG. SERVICE BULLETIN. SB SEB86-8 SAYS "THE AFFECTED SHOULDER HARNESS BELT ADJUSTERS MUST BE INSPECTED TO DETERMINE IF THE SPRING IS INSTALLED. IF INSTALLED, THE SPRING MUST BE REMOVED." COMMON SENSE TELLS YOU THE SPRINGS ARE OK. DUE DILIGENCE SAYS REMOVE THEM.

2007FA0000999	CIRRUS	LYC	CESSNA	BRUSHES	WORN
11/8/2007	SR20	IO360L2A			ALTERNATOR

DURING FLIGHT, PILOT REPORTED LOW VOLTAGE INDICATION. RESET ATTEMPTS WERE UNSUCESSFUL. PILOT RETURNED TO STATION. ALTERNATOR BRUSHES FOUND TO BE WORN BEYOND USE.

15DR	CIRRUS	CONT	ALTERNATOR	DESTROYED
4/11/2007	SR22	IO550*	BC4101	NR 2

OWNER REPORTED NR2 ALTERNATOR LIGHT ILLUMINATED. REMOVED TOP COWLING TO INSPECT NR2 ALTERNATOR. FOUND NR2 ALTERNATOR BROKEN OFF AT MOUNTING PLATE BY (3) STUDS. ONE STUD STILL ATTACHED WITH NUT, BUT LOOSE. REMOVED P/N BC410-1, S/N 0921403.

ODAR15DR1	CIRRUS	CONT	ALTERNATOR	DESTROYED
4/11/2007	SR22	IO550*	BC4101	NR 2

OWNER REPORTED NR2 ALTERNATOR LIGHT ILLUMINATED. REMOVED TOP COWLING TO INSPECT NR2 ALTERNATOR. FOUND NR2 ALTERNATOR BROKEN OFF AT MOUNTING PLATE BY (3) STUDS. ONE STUD STILL ATTACHED WITH NUT, BUT LOOSE. REMOVED P/N BC410-1, S/N 0921403.

2007FA0001060	COLUMB	CONT	STRAP	DEBONDED
12/3/2007	LC41550FG400	TSIO550C	SMR6201	PROPELLER DEICE

PROPELLER DEICE BOOT RETAINER STRAP DEBONDED OVER HALF OF THE BLADE CIRCUMFERENCE. OTHER (2) BLADES DEBONDED ABOUT .3. THIS STRAP HOLDS THE IB END OF THE DEICE BOOT AND TRIES TO KEEP THE LONG DEICE LEADS FROM PULLING UP THE BOOT. THE PROP DEICE BOOT BEGINS TO COME LOOSE AFTER THE STRAP DEBONDS. THE RETAINER STRAPS NEED TY-RAPS TO HOLD THE LEADS, AS IS COMMON PRACTICE ON OTHER PROPELLERS.

2007FA0000979	DIAMON	LYC	CONTROL ARM	BROKEN
10/18/2007	DA40	O360A4M		CARB HEAT

CARBURETOR HEAT CONTROL ARM BROKE OFF OF CARB AIR BOX CAUSING UNCONTROLLED SELECTION OF CARB HEAT VS RAM (COLD) AIR INTAKE. (K)

2007FA0001040	DIAMON	THIELT	FADEC	MALFUNCTIONED
11/8/2007	DA42	TAE1250299	057610E000201	

DURING FLIGHT TRAINING MANEUVERS, SIMULATED SINGLE ENGINE OPERATIONS AT 5000 FT ASL, THE LT ENGINE WAS THROTTLED BACK TO FLIGHT IDLE (5 PERCENT POWER, THROTTLE RETARDED). UPON RETURN TO NORMAL POWER OPERATIONS THE LT ENGINE BEGAN TO SURGE FROM 20-100 PERCENT POWER, REGARDLESS OF THROTTLE POSITION, ENGINE WAS UNCONTROLLABLE. THE LT ENGINE FADEC WAS SELECTED FROM ECU A TO ECU B AND CONTROL OF LT ENGINE WAS REGAINED. THE AIRCRAFT RETURNED TO DEPARTURE AND LANDED WITHOUT FURTHER INCIDENT. DISCREPANCY COULD NOT BE DUPLICATED DURING GROUND TESTS. LT ENGINE OPERATED NORMALLY ON BOTH ECU A AND ECU B OF THE LT FADEC. LT FADEC REPLACED AND AIRCRAFT RELEASED FOR TEST FLIGHT. NO FURTHER ENGINE SURGING NOTED.

CO1Y200700009	DOUG	SKIN	CRACKED
11/5/2007	MD11	ACA3108503	BS 535

AT RT AIR CONDITIONING COMPARTMENT AFT DOOR JAMB FOUND 0.25 INCH CRACK ON EXTERNAL SKIN STA 535 L NR32RH.

Y5CR200700002	DOUG	JOURNAL	BROKEN
11/20/2007	MD500E		TAIL ROTOR

BEARING JOURNAL BROKEN OFF ON OUTPUT PINION.

110107	GULSTM	RROYCE	ROTOL	WARNING LIGHT	ILLUMINATED
11/20/2007	G159	DART529			GEARBOX

DURING CRUISE FLIGHT MISSION, THE RT GEARBOX LIGHT CAME ON STEADY. THE ENGINE WAS SHUTDOWN IAW AFM PROCEDURES. THE AIRCRAFT LANDED UNEVENTFULLY, AND TAXIED TO THE RAMP. NO EMERGENCY WAS DECLARED.

2007FA0001015	GULSTM	RROYCE	CONNECTOR	CRACKED
11/5/2007	GULFSTREAMGV	BR700710A110	061E1P1E1	RT FLAP RESOLVER

BACK SHELL IS BROKEN/CRACKED AND SEPARATED FROM CONNECTOR PLUG ASSY. POSSIBLE CAUSE IS WIRE BUNDLE TO CONNECTOR PLUG STRESSES AND PULLING ON BACK SHELL. BACK SHELL IS MADE ON PLASTIC NOT METAL. IF BACK SHELL WAS MADE OF METAL IT WOULD HOLD UP AS A STRAIN RELIEF FOR THE ATTACHING WIRE BUNDLE. IF A PLASTIC BACK SHELL IS CONTINUED TO BE USED, WIRE BUNDLE SHOULD ALLOW SLACK ENOUGH NOT TO STRAIN THE STRAIN RELIEF. A METAL BACKSHELL IS THE MORE POSITIVE FIX FOR THIS PROBLEM. (K)

2007FA0001000	HAWKER	GARRTT	POWER SUPPLY	BURNED
11/8/2007	BAE125700B	TFE731*	6178A	CABIN LIGHTING

DISCREPANCY WAS CABIN INDIRECT LIGHTING IS INTERMITTENT. FOUND SHORTED WIRING AT AFT LT SIDE VALANCE, 2 BURNED POWER SUPPLIES AND SEVERAL CRACKED LAMP FIXTURES. CUSTOMER STATED THIS IS THE 3RD TIME THE POWER SUPPLIES WERE FOUND BURNED.

CA070724007	KAMOV	KLIMOV	ENGINE	MAKING METAL
7/21/2007	KA32A1	TB3117BMA		

(CAN) THE LT ENG OIL PRESSURE CAUTION LIGHT WAS FLICKERING WHILE SLINGING A LOAD. THE OIL PRESSURE GAUGE WAS CROSSCHECKED AND INDICATED 2.5 KG/CM2 (THE CAUTION RANGE) AND THE OIL TEMPERATURE WAS NORMAL. THE LOAD WAS DROPPED OFF. AFTER THE LOAD WAS DELIVERED AIRCRAFT BACK IN LEVEL FLIGHT, THE CREW REVIEWED THE CHECKLIST AND FLIGHT MANUAL. AS A PRECAUTIONARY MEASURE THE ENGINE WAS BROUGHT BACK TO IDLE. AT IDLE THE LT ENGINE WAS STILL BEING MONITORED, A FEW MILES FROM SERVICE THE FLIGHT CREW ADVANCED THE THROTTLE TOWARDS AUTO TO CHECK THE OIL PRESSURE. THE LT OIL PRESSURE LIGHT ILLUMINATED STEADILY AND THE OIL PRESSURE REMAINED AT IDLE OIL PRESSURE (2 KG/CM2 MINIMUM ALLOWABLE AT IDLE) THE AIRCRAFT WAS AT A WEIGHT THAT ASSURED A SAFE HOVER AND LANDING, THE CREW DECIDED TO SHUTDOWN THE LT ENGINE. THE LANDING WAS COMPLETED UNEVENTFULLY. THE ENGINEER FOUND METAL PARTICLES IN THE ENGINE OIL FILTER. THE ENGINE WAS REPLACED. (TC NR 20070724007)

470884	LEAR	HONEYWELL	IGNITER	BROKEN
11/5/2007	45LEAR	RE100	CH3459	APU

TIP OF IGNITER BROKE OFF AND WAS FOUND DURING COMPLIANCE WITH SB45-28-12.

2007FA0000983	LEAR	PWA	CONTROLLER	INOPERATIVE
10/22/2007	60LEAR	PW305A	80713	STAB DEICE

REPLACED HORIZONTAL STAB HEAT CONTROLLER. AFTER CHANGING CONTROLLER AIRCRAFT STILL HAD FAULT IN SYSTEM. T/S FURTHER DETERMINED REPAIRED CONTROLLER WAS NO GOOD. CONTROLLER SHOWED A FAULT IN T8. INSTALLED ANOTHER CONTROLLER SYSTEM CHECKED GOOD. (K)

2007FA0001051	LUSCOM	CONT	SPRING	BROKEN
11/30/2007	8A	A65*		TAIL WHEEL

ON TAKEOFF ROLL AND BEFORE ROTATION, THE TAILSKID SPRING ASSEMBLY BROKE AND THE TAIL WHEEL, CONNECTED TO THE FUSELAGE BY THE CONNECTOR SPRINGS, CAME TO REST ON TOP OF THE ELEVATOR AND WEDGED ITSELF AGAINST THE RUDDER, EFFECTIVELY JAMMING IT IN PLACE, CAUSING THE AIRCRAFT TO YAW 30 TO 40 DEGREES AND CREATED AN EXTREME SIDE SLIP NOT ALLOWING THE AIRCRAFT TO CLIMB.

2007FA0001033	LUSCOM	LYC	BULKHEAD	CRACKED
11/6/2007	8F	O320*	49099	FUSELAGE

DURING AN ANNUAL INSPECTION, FOUND AFT FUSELAGE BULKHEAD CRACKED AT TOP OF CUTOUT FOR ELEVATOR HORN. 50 PERCENT. THIS IS WHERE THE VERTICAL AND HORIZONTAL STABILIZERS ATTACH. THIS AREA IS HIDDEN BEHIND THE WEB OF THE VERTICAL STAB AFT SPAR AND WAS FOUND WHEN COMPONENTS WERE REMOVED TO REPAIR FWD SPAR (FOUND CRACKED) OF THE HORIZONTAL STAB. THE VERTICAL STAB IS NOT OF THE ROUNDED TIP TYPE, HAS AN ALUMINUM FWD ATTACHMENT AND STEEL AFT ATTACHMENT. (K)

2007FA0000941	MOONEY	CONT	ROLL SERVO	LOOSE
10/9/2007	M20K	TSIO360*	KS178	INSIDE CASE

MOTOR ASSY COMING LOOSE ON SERVO MOUNT. LOOSE HARDWARE, LOOSE MOTOR. RECOMMEND SERVO TO BE INSPECTED FOR PROPER SERVO ASSY (THAT MOTOR AND HARDWARE ARE NOT LOOSE). (K)

2007FA0001017	MOONEY	CONT	TURBOCHARGER	CRACKED
8/30/2007	M20K	TSIO520NB	635630	ENGINE

FOUND APPROX 1.25 INCH CRACK IN TURBO CHARGER HOUSING BELOW EXHAUST INLET AT WELD. (K)

S0700432	PILATS	BFGOODRICH	COMMUTATOR	FAILED
12/3/2007	PC1245			STARTER GEN

DURING CRUISE FLIGHT, LOUD NOISE FROM ENGINE COMPARTMENT FOLLOWED BY VIBRATION AND LOSS OF PRIMARY ELECTRICAL POWER. UPON INSPECTION, ONE SEGMENT FROM COMMUTATOR WAS MISSING AND AFT END OF GENERATOR AND BRUSHES HAD SUSTAINED HEAVY DAMAGE. AFTER REPLACEMENT WITH OVERHAULED UNIT, NO ABNORMALITIES WERE NOTED.

2007FA0001061	PILATS	PWA	BFGOODRICH	COMMUTATOR	FAILED

12/3/2007	PC1245	PT6A67B		STARTER GEN

DURING CRUISE FLIGHT, LOUD NOISE FROM ENGINE COMPARTMENT FOLLOWED BY VIBRATION AND LOSS OF PRIMARY ELECTRICAL POWER. UPON INSPECTION, ONE SEGMENT FROM COMMUTATOR WAS MISSING AND AFT END OF GENERATOR AND BRUSHES HAD SUSTAINED HEAVY DAMAGE. AFTER REPLACEMENT WITH OVERHAULED UNIT, NO ABNORMALITIES WERE NOTED.

2007FA0000980	PIPER	LYC	MUFFLER	BROKEN
10/19/2007	PA18150	O320B2B	E362000	ENGINE

THE TAILPIPE CRACKED AWAY FROM THE SHELL. THERE ARE NO STRAPS WELDED FROM THE PIPE TO THE SHELL LIKE SOME OTHER MUFFLERS. THE METAL FAILED, NOT THE WELD.

2007FA0001010	PIPER	LYC	PIPE	FAILED
11/1/2007	PA18150	O360A1A	PA18ESA	EXHAUST

LEADING EDGE EXHAUST SYSTEM INSTALLED BY STC SA02200AK FAILED AT THE SAIL PIPE TO MUFFLER WELD. SYSTEM HAS 36 HOURS SINCE NEW. (K)

2007FA0000982	PIPER	LYC	BEARING	BROKEN
10/28/2007	PA24250	O540*	HM6	RT MLG ACTUATOR

RT OB HEIM BEARING BROKE AT THREADS NEXT TO JAM NUT ON ACTUATOR ROD DURING TAKEOFF ROLL W/RESULTANT GEAR COLLAPSE. INCREASE SIZE AND STRENGTH OF PART. (K)

2007FA0001039	PIPER	LYC	PIPER	SHAFT	SHEARED
11/18/2007	PA28161	O320*		62829003	RUDDER TRIM

THE RUDDER TRIM SHAFT ASSEMBLY'S SPRING RETAINING PIN SHEARED AT WELD, CAUSING HIGH LT RUDDER STIFFNESS AND PREVENTING THE NOSE WHEEL FROM BEING TURNED WITH TOW BAR.

2007FA0000964	PIPER	LYC	PUMP	MALFUNCTIONED
10/17/2007	PA28161	O320*	35328803	FUEL BOOST

REPORTED ENGINE QUITTING DURING NORMAL CRUISE, PROBLEM ASSOCIATED WITH FUEL SYSTEM, ONCE ELECTRIC FUEL PUMP TURNED ON ENGINE WOULD RUN NORMAL, FUEL PRESS READINGS CONFIRMED FUEL STARVATION PROBLEM, INITIAL INSPECTIONS FAILED TO FIND A PROBLEM & COULD NOT BE DUPLICATED, REPLACED EDP WITH NEW & FLEW ACFT, PROBLEM REOCCURRED & APPEARED TO BE ISOLATED TO THE RT SIDE FUEL TANK SELECTION, REMOVED FUEL LINE AT CARB & PUMPED FUEL USING BOOST PUMP, MONITORED FLOW RATE FOR BOTH RT AND LT TANKS, INSTALLED VACUUM GAUGE IN SYSTEM AT GASCOLATOR AND MONITORED AMOUNT OF SUCTION CREATED FOR BOTH THE LT & RT, PROBLEM FINALLY DUPLICATED WHILE MONITORING & PUMPING FUEL, FOUND PROBLEM WAS NOT ISOLATED TO ONE SIDE BUT WOULD OCCUR ON EITHER TANK, PROBLEM ELIMINATED ALL FUEL FLOW FROM THE BOOST PUMP, REMOVED ELECT PUMP AND CHECKED BOTH INTERNAL CHECK VALVES, FOUND ONE OF THE TWO STUCK CLOSED IN A MANNER THAT WASN`T ALLOWING FUEL THROUGH THE PUMP, REPLACED THE CHECK VALVE WITH A USED VALVE AS REMOVED FROM A USED PUMP PREVIOUSLY REMOVED DUE TO INTERMITTENT PUMPING ACTION, (HAD TO RAP IT TO GET IT STARTED ON OCCASION), REINSTALLED PUMP AND TESTED NORMAL. TEST FLIGHT CONDUCTED AND FUEL PRESS MONITORED, NO DISCREPANCIES NOTED, AIRCRAFT RELEASE TO NORMAL SERVICE. THIS FUEL SYSTEM IS DEPENDANT ON THE FUEL FLOWING THROUGH THE ELECT FUEL PUMP EVEN WHEN THE PUMP IS SHUTOFF. SINCE THE CHECK VALVE, WHICH IS REQUIRED FOR PROPER ELECT. PUMP USE, WAS STUCK IN THE CLOSED POSITION THE ENGINE DRIVEN PUMP HAD NO FUEL AVAILABLE FOR PICKUP. IT IS ASSUMED THAT TURNING ON THE ELECT. PUMP WOULD DISLODGE THE CHECK VALVE ALLOWING FUEL FLOW ONCE AGAIN. HAD THE CHECK VALVE FAILED AS IT DID DURING MAINT. THE ENGINE WOULD HAVE EXPERIENCED FUEL STARVATION SINCE THE ELEC PUMP FAILED COMPLETELY AND NO LONGER ALLOWED FUEL THROUGH THE CAVITY DURING THE MAINT. (K)

2007FA0000968	PIPER	LYC	PIPER	INERTIA REEL	SEVERED
11/2/2007	PA28161	O320D3G		110744701	SEAT HARNESS

PILOTS SHOULDER HARNESS INERTIA REEL LOCKED UP, UPON EXAMINATION THE METAL GUIDE WHICH SURROUNDS THE FABRIC AND GUIDES IT ONTO THE REEL, HAD RUBBED AGAINST THE CENTER SHAFT OF THE

REEL ITSELF. THIS OVER TIME REDUCED THE DIAMETER OF THE SHAFT UNTIL IT FAILED.

ZB0R20070006	PIPER	LYC	SKIN	CRACKED
11/2/2007	PA28R200	IO360A1A	62061002	RT WING

DURING PROGRESSIVE INSPECTION, DISCOVERED WING WALK ON RT WING SPONGY. INSPECTION REVEALED SUBSTRATE REINFORCEMENT CRACKED IN SEVERAL LOCATIONS. REPLACED WING WALK.

2007FA0001057	PIPER	LYC	BOOSTER	SHORTED
11/27/2007	PA28R200	IO360C1C	06058002	MAGNETO

PILOT REPORTED ROUGH ENGINE; IGNITION SYSTEM TROUBLESHOOT FOUND START MAGNETO STARTER BOOSTER INTERNALLY SHORTED, GROUNDING MAGNETO P-LEAD CAUSING MAGNETO FAILURE. REMEDIED BY REMOVING START FROM AIRCRAFT AND MAGNETO OPERATING NORMALLY. (K)

2007FA0000989	PIPER	LYC	LANDING GEAR	WORN
11/6/2007	PA30	IO320*		MAINS

PART (A) OF AD 77-13-21 REQUIRES INSPECTION OF LANDING GEAR EVERY 1000 HRS IAW SL 782. AIRCRAFT EXPERIENCED A COLLAPSED RT MLG FOLLOWING A SCENARIO THAT IS IDENTIFIED IN SL 782. THIS SCENARIO INCLUDES A POPPED LANDING GEAR MOTOR CIRCUIT BREAKER RESULTING IN A FAILED MLG EXTENSION, FOLLOWED BY A MANUAL GEAR EXTENSION. INVESTIGATION FOUND MANY OF THE PARTS IDENTIFIED IN SL 782 WERE WORN AND REQUIRED REPLACEMENT. PART (A) OF THE AD 77-13-21 HAD BEEN COMPLETED 893 HRS AND 12 YEARS AGO. OWNERS AND OPERATORS SHOULD CONSIDER COMPLYING WITH AD 77-13-21 PART (A) MORE OFTEN THAN THE 1000 HRS AS REQUIRED. AD 77-13-21 DOES NOT CONTAIN A CALENDAR REQUIREMENT.

2007FA0001009	PIPER	LYC	WIEBEL	PIN	BROKEN
10/3/2007	PA31350	TIO540*		757496	LOWER CLEVIS

EMERGENCY GEAR EXTENSION PUMP LOWER CLEVIS PIN BROKEN, FAILURE FOUND ON 2 SIMILAR AIRCRAFT. (K)

2007FA0001038	PIPER	LYC	GASKET	WRONG PART
8/28/2007	PA31P	TIGO541E1A	76048	EXHAUST

VISUALLY INSPECTED RT ENG AFTER RECOVERING THE A/C FROM A FIELD. FOUND MELTED WIRING AT NR 6 CYLINDER AND BEHIND IT. THE P-LEAD FOR THE RT MAG WAS MELTED AND WHEN TESTED FOUND TO BE SHORTED OUT. THIS SHUT-OFF RT MAG. THE NR 6 BOTTOM PLUG WIRE WAS HANGING LOOSE AND THE NUT ATTACHING LEAD TO THE PLUG WAS MELTED OFF. SEVERAL OTHER PLUG WIRES WERE BURNED AS WELL. CAUSE OF THIS DAMAGE WAS A BLOWN OUT EXHAUST GASKET ON NR 6 CYLINDER. WHEN THE GASKET BLEW OUT, HOT EXHAUST WAS ALLOWED TO BURN UP THE PLUG WIRES AND MAG P-LEAD. P-LEAD THEN SHUT OFF THE RT MAG PROTECTIVE COATING WAS BURNED OFF. SO NOW AT BEST, HAVE 1 MAG WORKING AND ONLY FIRING ON 5 CYLINDERS, AND A LARGE EXHAUST LEAK WHICH WILL LOWER MANIFOLD PRESSURE. PERFORMED HIGH TENSION LEAD TEST ON THE RT SIDE OF THE RT ENGINE, NR 6 TESTED BAD, THE REST TESTED OK. NO CONTINUITY TEST WAS DONE AT THIS TIME. REMOVE THE ORIG RT PROP AND INSTALLED A TEST PROP. STARTED THE RT ENGINE, IT STARTED VERY POORLY. IDLED VERY ROUGH AND WOULD NOT TAKE THROTTLE OR MAKE ANY POWER ABOVE AN IDLE. DISCONNECTED RT MAGNETO, RESTARTED THE RT ENGINE, IT STARTED AND IDLED MUCH BETTER, AND WOULD TAKE THROTTLE ALTHOUGH IT RAN POOR. LOWER PLUGS WERE REMOVED TO FACILITATE THE EXHAUST REMOVAL AND SHOWED SIGNS OF A RICH MIXTURE OR INCOMPLETE BURN. WHEN DISASSEMBLED THE RT EXHAUST STACK ON THE RT ENG (CYL 2,4, AND 6), FOUND THE FOLLOWING: NR 2 CYLINDER ALL EXHAUST NUTS WERE LOOSE. NUTS WERE ABOUT (2) TURNS LOOSE. THE EXHAUST GASKETS WERE INTACT. THEY APPEARED TO BE A PN 76048 COPPER GASKET. THE PARTS BOOK CALLS OUT PN 78056, WHICH ARE STEEL. NR 4 CYLINDER IB FWD NUT WAS LOOSE, IB AFT NUT WAS LOOSE, OB FWD NUT WAS LOOSE. OB AFT UNT WAS TIGHT. EXHAUST GASKETS WERE INTACT AND APPEARED TO BE PN 76048. NR 6 CYLINDER, THE EXHAUST STACK HAD A GAP BETWEEN STACK AND THE CYLINDER, WHERE THE EXHAUST GASKET WAS BLOWN OUT. THERE WAS 3 SMALL PIECES OF GASKET LEFT THAT APPEARED TO BE THE REMAINS OF PN 76048 COOPER GASKET. PARTS BOOK CALLS OUT PN 25C10 FOR EXHAUST STUDS. THIS STUD IS .2500 INCH BY 1.2500 INCH LONG. OB REAR STUD WAS .2500 INCH BY 1.5 INCH LONG. HOWEVER THIS INCORRECT STUD DID NOT APPEAR TO CAUSE ANY PROBLEMS. THE END RESULT WAS AN OFF FIELD LANDING AFTER THE RT ENGINE FAILED. AC LANDED UP RIGHT, GEAR UP, FLAPS UP, COWL FLAP CLOSED, MAG SWITCHES ON, FUEL PUMPS ON, FUEL SELECTORS ON IB TANKS RT ENG FEATHERED, LT PROP3 BENT BLADES, RT PROP; 1 BENT BLADE, SIGNIFICANT DAMAGE TO THE RT WING, BOTH LOWER COWLS AND THE AIRCRAFT BELLY, THE PILOT DID NOT RECEIVE

SERIOUS INJURY. (K)

2007FA0000990	PIPER	LYC	BEARING	BROKEN
1/30/2007	PA32R300	IO540*	452729	ROD END

NOSE GEAR EXTENDED SUDDENLY AND UNCOMMANDED IN FLIGHT, EXAMINED AND FOUND CYLINDER ROD END TO NOSE GEAR RETRACT ASSY WAS BROKEN.

2007FA0000997	PIPER	LYC	BEARING	FAILED
11/5/2007	PA32R301	IO540*	452729	NLG ROD END

WHILE IN FLIGHT THE NOSE GEAR RETRACT CYLINDER PISTON ROD END FAILED, CAUSING IMMEDIATE EXTENSION OF THE NOSE GEAR.

2007FA0001074	PIPER	CONT	CONTROL SYSTEM	SEIZED
11/30/2007	PA34220T	TSIO360*		RUDDER

WITH FULL RT RUDDER TRIM, RT RUDDER FOR HARD CLIMBING RT TURN, RUDDER FROZE WITH FULL RT DEFLECTION. RUDDER CABLE TURNBUCKLE IN TAIL SECTION WAS (CAUGHT) UNDER BULKHEAD TOP EDGE CAUSING RUDDER TO FREEZE IN FULL RT DEFLECTION - DESPITE SIGNIFICANT LT RUDDER PRESSURE.

2007FA0001043	RAYTHN		STOP	DISTORTED
10/24/2007	390		3908204080001	NLG STRUT

PILOT REPORTED LANDING GEAR UNLOCKED INDICATION AFTER GEAR RETRACTION AFTER TAKEOFF. FOUND NLG STOPPER ASSY DAMAGED AND PREVENTING NLG ASSY FROM CENTERING AND ENGAGING UPLOCK ASSY. REPLACED STOPPER ASSY AFTER NLG DISASSEMBLY AND INSPECTION, LANDING GEAR OPERATIONS NORMAL. REPORTED THAT AIRCRAFT WAS PREVIOUSLY TOWED WITH NLG TORQUE LINKS CONNECTED. FLIGHT CREW, GROUND OPERATIONS, PERSONNEL AND TECHS SHOULD BE AWARE OF CORRECT PREMIER TOWING PROCEDURES AS SPECIFIED IN THE 390 MM, SEC 9-10-01-201. (K)

2007FA0001042	RHNFLU	LYC	FUEL CONTROL	MALFUNCTIONED
11/15/2007	EA300L	AEIO540L1B5	RSA10AD1	ENGINE

THE AIRCRAFT EXPERIENCED AN INFLIGHT ENGINE SHUTDOWN RESULTING IN A FORCED LANDING ON THE BEACH. THE CAUSE OF THE INFLIGHT ENGINE SHUTDOWN WAS THE INTERNAL FAILURE OF THE FUEL SERVO. THE FUEL SERVO WAS EVALUATED . THE FAILED UNIT WAS SENT TO THE MANUFACTURER FOR FURTHER EVALUATION. AFTER FURTHER INVESTIGATION THEY DETERMINED THE CAUSE OF THE INTERNAL FAILURE WAS DUE TO FOD ENTERING THE FUEL SERVO AND WORE AWAY AT THE REGULATOR ASSEMBLY. THE DIFINITIVE CAUSE IS STILL UNDER INVESTIGATION AT MFG.

2007FA0001032	RKWELL	PWA	DUCT	DEFORMED
10/22/2007	NA26560	JT12A8	354021	CABIN PRESSURE

ATTACHING SLEEVE SLID OFF OF DUCT CAUSING LOSS OF PRESSURIZATION. EMERGENCY PRESSURIZATION FUNCTIONED NORMALLY. CLAMPS TIGHTENED TOO TIGHT AND DEFORMED FIBERGLASS DUCT. RECOMMEND METAL SLEEVE BE INSTALLED TO ALLEVIATE DEFORMATION. (K)

2007FA0001007	SCWZER	ALLSN	SKID	DAMAGED
10/31/2007	269D	250C30	269A3245919	LT MLG

UPON LANDING THE HELICOPTER IN A SLIGHT FWD AND LT MOTION IN FLAT GRASS AREA HEARD SLIGHT CLICK OR CLUNK, PIC DIDN`T SEE ANY DAMAGE, PICKED UP AIRCRAFT TO A HOVER AND GROUND CREW SAW FWD END OF LT SKID TUBE HANGING BELOW THE AIRCRAFT. (K)

2007FA0001002	SWRNGN		TORQUE TUBE	SHEARED
11/6/2007	SA227*			LT ELEVATOR

DURING A ROUTINE PHASE INSPECTION OF THE AIRCRAFT, IT WAS DISCOVERED THAT THE LT ELEVATOR PIVOT PIN ON THE TORQUE TUBE ASSEMBLY PN 27-44026-007 WAS SHEARED. INITIAL INSPECTION REVEALED CORROSION/RUST AND EXTENSIVE PITTING IN THE PIN. THIS PIN IS (1) OF (3) IN A LINEAR LINE ATTACHING THE ELEVATOR TO THE AIRCRAFT STABILIZER. THIS AIRCRAFT IS NORMALLY LOCATED OUTSIDE EXPOSED TO THE

WEATHER ELEMENTS NEAR SALT AIR/RAIN. THIS PART ALSO REVEALED A CORRODED VTA BEARING PN VTA04270. A VISUAL GVI IN THE SUSPECT AREA CAN EASILY INDICATE A PROBLEM FOR CORROSION. RECOMMENDATION: (1) GVI OF TORQUE TUBE ASSEMBLY IF THE AIRCRAFT IS STORED EXPOSED TO SALT AIR OR RAIN ON A ROUTINE BASIS. (2) GVI OF THE VTA BEARING. IPC 27-30-10 FIG 1 ITEM 8 AND ITEM 10.

END OF REPORTS