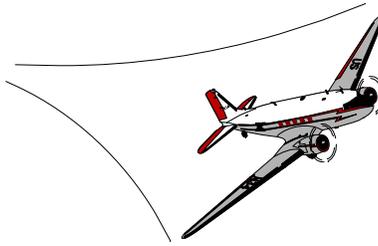


# REVISED SPECIAL AIRWORTHINESS INFORMATION BULLETIN

AIRCRAFT CERTIFICATION SERVICE  
800 INDEPENDENCE AVENUE, S.W.  
WASHINGTON, DC 20591



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

No. CE-98-21R1  
June 10, 1998

Published by: FAA, AFS-610, P.O. Box 26460, Oklahoma City, OK 73125

This is issued for informational purposes only and any recommendation for corrective action is not mandatory.

## Introduction

This Special Airworthiness Information Bulletin (SAIB) revises SAIB ACE-98-21 issued December 31, 1997. The purpose of this SAIB is to alert owners/operators of Teledyne Continental Motors (TCM) models C-75, C-85, C-90 (except C-90-8F and C-90-8FJ), O-200, IO-240 series and Rolls-Royce, plc (RR) Models C-90 (except C-90-8F and C-90-8FJ), O-200, O-240 series reciprocating engines of the distribution of unapproved magneto drive gears. This bulletin also applies to TCM models A-65-3, -6, -8; A-75-6, -8; C-75-6, -8; C-85-6, -8 and C-90-6, -8 with Slick Adapter Kit, K4521-X installed. These magneto drive gears were distributed and/or manufactured by Fresno Airparts Company and were found to have deficient material properties. Fresno Airparts Company was not authorized by the FAA to manufacture these parts. This information is valuable to anyone who operates one of the above listed engines because of the possibility of magneto drive gear failure which could result in engine failure and possible forced landing. This information is advisory in nature and not mandated by regulation.

## Background

A report of a failure of a magneto drive gear distributed and/or manufactured by Fresno Airparts Company was received by the FAA. The reported failure occurred in under 100 hours time-in-service since installation of the magneto gear. An analysis was conducted on 12 additional gears which were found non-compliant with type design. An investigation was conducted by the FAA and the Department of Transportation Inspector General's Office and revealed that the magneto drive gears were distributed by Fresno Airparts Company and other repair stations, distributors, or persons listed in Note 1 of this SAIB. The magneto drive gears were manufactured from improper materials, not heat treated or not heat treated properly, and did not conform to the dimensional tolerances of approved gears. These findings led the FAA to conduct a Suspected Unapproved Parts (SUPs) inquiry which, in turn, resulted in the issuance of SAIB ACE-98-21. Since the issuance of that SAIB, additional information has been obtained. Reports were received of an additional 10 gears which were tested in accordance with the original SAIB but failed because the material was too soft. Initially, parts were thought to have been distributed only in the December 1993 to December 1997 time frame; however, it has been discovered that the time frame must be expanded to include the October 1, 1991 to December 1997 time frame. Unfortunately, there are no invoices for the October 1, 1991 to December 1993 time frame. It is estimated that approximately 2200 parts were distributed in the October 1, 1991 to December 1997 time frame.

The improperly manufactured magneto drive gears have a part number (P/N) 36066 ink stamped on them and were typically shipped in a plastic bag which was placed inside a brown box usually marked only with the P/N. The part was sometimes shipped in just a plastic bag and, at other times, in a box which had a resemblance to original Continental boxes. The suspect magneto gear drives are not ones produced by a manufacturer holding a parts manufacturing approval (PMA), which parts will have a P/N indicating the PMA, or ones produced by the original equipment manufacturer (OEM), which parts are shipped in boxes marked with the OEM's logo. Improperly manufactured magneto gear drives were distributed by Fresno Airparts Company to many repair stations, distributors, and other persons. The FAA has secured a list of persons to whom Fresno Airparts Company distributed suspect magneto drive gears in the December 1993 to December 1997 time frame, and that list appears in Note 1.

There are approximately 38,000 engines installed on aircraft of U.S. registry on which the suspect magneto gear drives are eligible for installation. Current data indicates that these parts did not begin to be distributed before October 1, 1991. All magneto drive gears installed from October 1, 1991 to December 31, 1997 must, therefore, be considered suspect. There is no visual test to distinguish an improperly manufactured magneto drive gear bearing P/N 36066 from a properly manufactured magneto drive gear with that same P/N. This condition, if not corrected, could result in magneto drive gear failure due to improper manufacture, which could result in an engine failure and possible forced landing.

*Note 1: This list may be used to assist in determining whether P/N 36066 may have been purchased from Fresno Airparts Company. These listed entities may have resold parts to others. Invoices indicate that improperly manufactured magneto drive gears were purchased from Fresno Airparts Company by the following from December 1993 to December 1997:*

Aero Maintenance, Vancouver, WA;	Tyrone Ewig, Iron Mountain, MI;
Aero Pacific, Oceanside, CA;	Gibson Aviation, El Reno, OK;
Aero Tech, San Jose, CA;	Glen Beard Airspares, Jandakot Airport Western Australia;
Aerospares, Mississauga, Ontario;	Glen's Aircraft Repair, Palmyra, WI;
Aerotech, Karup, Denmark;	Gunter Goggelmann, Dallas, TX;
Aerstone Supplies, LTD, Oxon, UK;	Gold Coast Aviation, Salinas, CA;
Air Support Int., Inc., Marshfield, MO;	Golden Horn Aviation, Seabastin, FL;
Air West Aircraft Engines, San Carlos, CA;	Gran-Aire, Inc., Milwaukee, WI;
Alta Aircraft Maintenance, W. Jordan, UT;	Hetrick Aircraft, Lawrence, KS;
Athens Air, Athens, TN;	Art Heunemann, Garland, TX;
Aviation Buyers Group, Inc., Salt Lake City, UT;	Hortman Aviation, Philadelphia, PA;
B & K Aircraft Salvage, Mandan, ND;	J's Aircraft Engine + Parts Inc., Dallas, TX;
Bob Bailey, Ruston, LA;	Kaylor Engines, Ocala, FL;
Barkhorn Precision Engines, Vista, CA;	Kay Air, Indianapolis, IN;
Bela's Aircraft, Dallas, TX;	Kline Aviation, Brooklyn, MI;
Black Hills Aero, Spearfish, SD;	Lake Aero Repair, Lakeville, MN;
David Branson, Tucson, AZ;	Robert Larson, Medina, OH;
Bruce Machines, Lakeville, CT;	Leading Edge Aviation, Searcy, AR;
C3D Aviation, Waller, TX;	John Linke, Omaha, NE;
Central Air Parts, Inc., Staunton, IL;	Lycoming Air Services, Montoursville, PA;
Central Illinois Aviation, New Berlin, IL;	Lycon Rebuilding Company, Visalia, CA;
William Christensen, Taylors, SC;	Lycon, Inc., Mesa, AZ;
Chuck's Aircraft, San Carlos, CA;	Lynn's Aircraft, El Monte, CA;
Chris Clew, Murfreesboro, TN;	Lynn's Aircraft Engines, El Monte, CA;
Bill Collins, Gould, AR;	Edwin Macauley, Medford, OR;
Coastal Aircraft, Juneau, AK;	Mad Par Aviation, Hillsboro, OR;
Cooper Aviation, Fowlerville, MI;	Mad River Airport, Urbana, OH;
Corporate Aircraft Salvage Pty, Ltd., Jandakot, Perth Western Australia;	Mainland Machine, San Luis Obispo, CA;
Corporate Aircraft Service, Jandakot, Western Australia;	Richard Maresh, Syracuse, IN;
Costa Flying Service, Painted Post, NY;	Steve Markham, Odiham, Hampshire, England;
Crotts Aircraft Service, Dodge City, KS;	Mattituck Aviation Corporation, Mattituck, NY;
D + D Aircraft, Fresno, CA;	Menasco Air, Sonoma, CA;
DD + D Inc., Grady, AR;	Mertz Aero, West Chester, PA;
Delta Aviation, Stillwater, OK;	Mid Valley Aviation, Los Banos, CA;
DeMars Aero, Ft Collins, CO;	Monticello Aviation, Inc., Monticello, CA;
Don George Aircraft, Orlando, FL;	National Aviation Supply, Seattle, WA;
Dream Machine, Jonesboro, GA;	Nick Carter Aviation, Elizabethton, TN;
E.A.A. Maintenance, Oshkosh, WI;	North Central Aviation, Linton, ND;
El Reno Aviation, Inc., El Reno, OK;	Northern Skies Aviation, Laurel, MT;
Engine Components N.W., Aurora, OR;	O Kanogan Aero Engine, Kelowna, BC, Canada;
Estergard Aviation, Chandler, AZ;	Ormond Beach Aviation, Inc., Ormond Beach, FL;
	Owatonna Airport, Inc., Owatonna, MN;

Pacific Continental Engines, Van Nuys, CA;  
 Pete Mason Banner Towing, Santa Paula, CA;  
 Craig Pickren, Heber Springs, AR;  
 Progress Photo, Norfolk, VA;  
 Q.G. Aviation, Ft Collins, CO;  
 Regional Air Inc., Lawton, KS;  
 Reimers Aircraft, Anchorage, AK;  
 Reliant Aviation, Albany, OR;  
 Carew Rice, Seabrook, SC;  
 Riley Aviation, Coldwater, MI;  
 Rocky Mountain Air Service, Nampa, ID;  
 Ron's Repair, Lopey Island, WA;  
 Ross Repair, Cambridge, MD;  
 Sanders Aircraft, Chino, CA;  
 Savage Magneto, Oakland, CA;  
 Scott Vally Aviation, Greenview, CA;  
 Jim Skilling, Groveland, CA;  
 Sky Dancer Aviation, Lincoln, CA;  
 Sky Haven Enterprises, Rochester, NH;  
 Kraig Smyth, Fairbanks, AK;

Snohomish Flying Service, Snohomish, WA;  
 Ken Snyder, Savage, MN;  
 South East Airmotive Corporation, Charlotte, NC;  
 Spana Flight, Puyallup, WA;  
 Standard Aircraft, Belmont, NC;  
 Stanton Kline Moss, Gilroy, CA;  
 Vivian Starr, Plymouth, MN;  
 Stauffer Aero, Calgary, Alberta, Canada;  
 Steve's Aircraft Repair, Chester, MT;  
 Sussex Aero Maintenance, Georgetown, DE;  
 Tears Aviation, McKinney, TX;  
 Kirk Tegeriehner, Indianapolis, IN;  
 Twin Oaks Aviation, Hillsboro, OR;  
 Vermont Flying Service, Barre, VT;  
 Victor Aviation, Palo Alto, CA;  
 West Fargo Aviation, West Fargo, ND;  
 Jack White, Orangevale, CA;  
 White Wing Aircraft Engines, Inc., Junction, TX;  
 Nancy Zawistowski, North Reading, MA.

### **Recommendation**

Based on currently available information, the FAA is only recommending the following actions. However, the FAA will continue this investigation and additional actions, such as issuance of an Airworthiness Directive, may be found to be warranted based upon analysis of new information.

The FAA is recommending the following:

(a) If no work was performed on the magneto drive gears during the time period October 1, 1991 through December 1997, no further action is required.

*Note 2: A check of engine maintenance records or engine log books for the time period October 1, 1991 to December 1997 may help determine if any work was accomplished on the magneto drive gears (invoices may be necessary to determine exactly what work was completed and what parts replaced).*

(b) If work was performed on the magneto drive gears during the time period October 1, 1991 through December 1997, accomplish the following:

(1) Remove from service all magneto drive gears distributed by Fresno Airparts Company and replace with serviceable parts. (See Note 1.)

*Note 3: The suspect parts have an ink stamped P/N 36066 and were usually shipped in a plastic bag, which, in turn, was placed in a brown box and usually marked only with the P/N. The part was sometimes shipped in just a plastic bag and, at other times, in a box which had a resemblance to original Continental boxes.*

(2) If the origin of the magneto drive gear installed cannot be determined, remove the magnetos in accordance with the appropriate maintenance manual, then remove the magneto drive gear from the magneto, and either:

(i) Remove the magneto drive gear from service, and replace with a serviceable part; or

(ii) Perform the following Rockwell hardness test on the gear. Test in a minimum of two of the following three locations: on the back of the gear, on a gear tooth end, or on the central boss. The type design specifies a Rockwell C scale value of 38 - 42. Any gear that does not meet this specification should be removed from service and replaced with a serviceable part. Also perform a visual inspection of the gear teeth; any gear which exhibits rolling of material on the teeth, pitting, unusual wear patterns or any other form of damage should be rejected. If the magneto drive gear is damaged, it would be prudent to inspect the cam and crankshaft gears, as well.

4 CE-98-21R1

(c) A serviceable part may be defined as a new or used magneto drive gear which successfully passes the Rockwell hardness test specified above or was **not** distributed from Fresno Airparts Company.

(d) Operators are requested to report any occurrences of magneto failures, engine failure or aircraft incidents that were found due to failure of the magneto gear.

**For Further Information Contact**

Jerry Robinette, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, 1895 Phoenix Boulevard, One Crown Center, Suite 450, Atlanta, GA 30349; telephone: (770) 703-6096, fax: (770) 703-6097, email: Jerry.Robinette@faa.dot.gov

U.S. Department  
of Transportation

**Federal Aviation  
Administration**

Regulatory Support Division  
P.O. Box 26460  
Oklahoma City, OK 73125-0460  
AFS-610

Official Business  
Penalty for Private Use \$300

*Special  
Airworthiness  
Information*

**FIRST-CLASS MAIL  
POSTAGE & FEES PAID  
FAA  
PERMIT NO. G44**