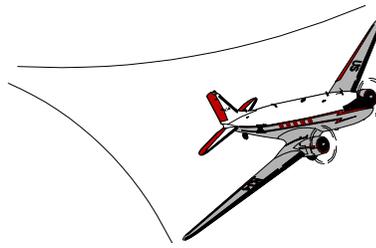


SPECIAL AIRWORTHINESS INFORMATION BULLETIN

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460



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

No. NE-00-03
October 7, 1999

SAIB's are posted on the internet at <http://av-info.faa.gov>

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

Applicability: HIGH Octane Engines Fueled With Contaminated Fuel in Chico, California.

Introduction

The FAA has been alerted that Aviation Gasoline (AVGAS) delivered to Pacific Flight Services Inc. (PFS) of Chico, California (airport identifier CIC) was contaminated with jet fuel and was therefore not compliant with the applicable fuel specification (ASTM D910). The non-compliant AVGAS was delivered on August 31, 1999 and sales were suspended on September 21, 1999. The recommendations in this Special Airworthiness Information Bulletin (SAIB) are applicable only to aircraft that have purchased this fuel, and that are approved for operation with fuel with *octane numbers greater than or equal to 100*. A separate SAIB, No. **NE-00-02**, has been issued for aircraft that purchased this fuel, and that are approved for operation with fuel octane numbers less than 100.

Background

The contamination appears to have occurred when a fuel delivery truck (common carrier) loaded the 100LL AVGAS on top of approximately 1000 gallons of jet fuel that remained on the truck from a prior delivery. It appears that the highest concentration of jet fuel in PFS's AVGAS storage tank was 7.7% and was further diluted by subsequent deliveries of fresh (on-specification) AVGAS. Therefore, the most severe impact on octane rating occurred at the initial delivery of the contaminated fuel, and this impact lessened with each subsequent delivery of on-specification AVGAS.

The octane rating, or antiknock quality, of AVGAS is measured using laboratory engines and is expressed in terms of lean and rich ratings of the fuel. AVGAS is available with lean/rich ratings of: 80/87, 91/96, 100/130 and 115/145. Laboratory studies have shown that the lean rating is little affected by the addition of up to about 6 volume percent jet or diesel fuel, but the rich rating can be adversely affected if contaminated by these fuels. If the rich rating of the resulting contaminated fuel mixture falls below the rich rating requirement of the engine, the potential for combustion knock, or detonation, exists. In this case, the initial (worst case) octane rating of the AVGAS/jet fuel mixture was estimated to be 100/115, which, under some operating conditions, may not be sufficient to prevent detonation in *engines rated for 100LL, 100/130, or 115/145 AVGAS*.

The recommendations below specify maintenance actions intended to prevent engine damage, and possible in-flight failure, due to detonation. Issuance of this SAIB does not negate the need for an Airworthiness Directive (AD) to mandate these actions, and the FAA will continue to monitor the situation to determine if an AD is necessary.

Recommendations

- 1 The recommendations in the SAIB are applicable only to aircraft that meet both the following criteria:
 - a. **fuel requirement of 100LL, 100/130 or 115/145 octane**
 - b. **fueled with AVGAS supplied by Pacific Flight Services FBO, Chico, California between August 21 and September 21, 1999.**

NOTE: For aircraft not meeting criteria (a) above, but meeting criteria (b) above, please refer to SAIB NE-00-02 for recommended corrective action. However, aircraft not meeting criteria (b) are exempt from compliance with SAIB NE-00-02 and NE-00-03.

2. These aircraft are identified in distribution listing provided below.

3. The following maintenance actions are applicable to these aircraft and are recommended to be accomplished prior to further flight:

- a. The engine should be removed from the aircraft.
- b. The engine should be completely disassembled and inspected for possible damage caused by detonation. Particular attention should be given to piston pin areas, ring lands, cylinder barrels and combustion chambers. Evidence of detonation damage or overtemperature conditions should be repaired in accordance with the engine manufacturer's maintenance instructions.
- c. Completely drain the fuel tanks and the entire fuel system.
- d. Flush the fuel system with on-specification AVGAS and check for leaks.
- e. Fill the tanks with the proper grade of on-specification AVGAS.

4. Report compliance with the above recommendations by email or fax to the FAA contact specified below. Please include the registration number of your aircraft, and provide information regarding evidence of engine damage (if available).

Distribution

The FAA has received reports that the following aircraft meet criteria (a) and (b) of item 1. under Recommendations. Please see NOTE if the listed registration number does not meet both (a) and (b) criteria.

N1049Q	N109BT	N110WW	N112HP	N121NA	N135EZ
N146RV	N1822X	N1826K	N182HA	N188JK	N18941
N19WB	N200PV	N201BP	N20444	N2103L	N210HE
N21161	N2190H	N222SS	N2346G	N2480S	N25NL
N263B	N28256	N295RS	N30J	N3115A	N3215D
N3372D	N340WA	N3442X	N35689	N3617W	N3692Y
N404DF	N406DF	N408DL	N4139T	N4235T	N4236Q
N424PC	N4324D	N4451S	N451DD	N453DF	N458DF
N4624D	N46498	N471DF	N47DL	N49039	N5066Q
N51586	N52364	N52862	N5348D	N54042	N56MP
N6043J	N6169N	N6222X	N6329Y	N6342L	N6421Q
N66GR	N67298	N699AC	N707BR	N711JF	N714NT
N7194C	N728CT	N734RA	N736JD	N737FS	N73FC
N74DT	N74SA	N7526J	N75559	N756JT	N7711M
N7947K	N7962C	N79833	N82FA	N836E	N84643
N85322	N911DS	N91CZ	N9330T	N9388R	N9395V
N9485P	N9560S	N98554	N99RP	N43SM	N8532Z
N406WA	N438M				

FOR FURTHER INFORMATION CONTACT:

Federal Aviation Administration, Mark Rumizen, ANE-110, 12 New England Executive Park, Burlington, MA 01803, Tel: (781) 238-7113, Fax: (781) 238-7199, email: mark.rumizen@faa.gov.

CHANGE OF ADDRESS NOTICE

Airworthiness Directives (AD) for a particular make and model of aircraft are mailed to the aircraft owners using the permanent mailing address on file with the FAA Registry. If you need to change your address, please complete this form and mail to FAA Aircraft Registration. A revised Certificate of Aircraft Registration will be mailed to you without charge.

Signature requirements:

- Individual owner must sign.
- Partnership, a general partner must sign.
- Co-owner, each co-owner must sign, continuing as necessary on an attached sheet.
- Government, any authorized person may sign.

MAIL TO:

FAA Aircraft Registry, AFS-750
 Mike Monroney Aeronautical Center
 P.O. Box 25504
 Oklahoma City, OK 73125-0504

AIRCRAFT REGISTRATION NO.	SERIAL NO.	
MAKE	MODEL	
ADDRESS CHANGE REQUESTED		
NAME AND ADDRESS OF CERTIFICATE HOLDER		
STREET		
CITY		
STATE	ZIP	COUNTRY
SIGNATURE (In Ink)	TITLE	DATE

CANCELLATION OF REGISTRATION REQUESTED:		
<small>(check applicable block, sign, and date)</small>		
<input type="checkbox"/> 1. Aircraft sold to: (Purchaser's name and address)	_____ _____ _____	
<input type="checkbox"/> 2. Aircraft destroyed/scrapped		
<input type="checkbox"/> 3. Aircraft exported to _____		
<input type="checkbox"/> 4. Other, specify _____		
I (we) request cancellation of registration for the above reason.		
SIGNATURE (In Ink)	TITLE	DATE

U.S. Department
of Transportation

**Federal Aviation
Administration**

Regulatory Support Division
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Oklahoma City, OK 73125-0460
AFS-610

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