

SERVICE BULLETIN

Compliance Will Enhance Safety

SB05-2

Technical Portions FAA

Approved

Supersedes M89-15

SUBJECT: OVSPEED LIMITATIONS

PURPOSE: To establish criteria for engine RPM overspeed calculations and to provide instructions for inspection after engine RPM overspeeds.

MODELS

AFFECTED: All

Engine operation at speeds in excess of rated RPM (revolutions per minute) limitations can cause serious damage to the engine and can result in subsequent catastrophic engine failure.

The following criteria is established for use when engines have inadvertently experienced some degree of overspeed for limited periods of time:

ENGINE	RATED RPM LIMITATION (See Note 1)	CAT. I TO	CAT.II TO	CAT.III OVER
GTSIO-520	3200-3400	3500	3700	3700
IO & L/TSIO-520 and IO & TSIO-550	2400-2850	3000	3300	3300
O, IO, & TSIO-470	2400-2625	2900	3200	3200
GIO-470	3200	3500	3700	3700
IO & L/TSIO-360	2500-2800	3000	3300	3300
IO-346	2700	3000	3300	3300
GO-300	3200	3500	3700	3700
O-300	2700	3000	3300	3300
IO-240-A&B, O-200, C-Series	2575-2800	3000	3300	3300
Tiara 6-285	4000	4100	4200	4200
Tiara 6-320	4400	4500	4600	4600

NOTE1

For aircraft equipped with digital RPM measuring equipment, the rated RPM limitation may be established to include a variance of + 2% for normal operations. Any operation of the engine beyond the rated RPM limitation plus the 2% allowed variance must follow the inspection criteria for the appropriate Category RPM Limitation Inspection as contained in this bulletin.

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MO	DAY	YEAR	MO	DAY	YEAR		1 of 2	
01	31	2005					SB05-2	

INSPECTION CRITERIA

CATEGORY I – RPM LIMITATIONS

- A. Less than 10 seconds – No action required.
- B. More than 10 seconds – Proceed as follows:
 - 1. Drain the oil, then remove oil screens and filters as applicable. Inspect for contaminants in the oil, screens and filters. (Where applicable.)
 - 2. Remove the rocker covers and inspect the valves, springs, rocker arms, tappets, spring retainers and pushrods for condition in accordance with the latest revision of the applicable service publications.
 - 3. Check all accessory drives for excessive backlash.

NOTE

If no discrepancies are indicated with the above listed inspection procedures, repeat item B-1 after the next 5 hours of flight time.

CATEGORY II - RPM LIMITATIONS

- A. Less than 10 seconds – Same action required as for Category I B.
- B. More than 10 seconds – In addition to the actions required for Category I B, proceed as follows:
 - 1. Remove all cylinder assemblies, including pistons and rods.
 - 2. Remove all counterweights, as applicable. (On Tiara engines, inspect VTC unit.)
 - 3. Inspect and reinstall removed parts in accordance with the latest revision of the appropriate service publications, using new connecting rod nuts and bolts.

NOTE

If no discrepancies are indicated with the above listed inspection procedures, repeat item Category I B-1 after the next 5 hours of flight time.

CATEGORY III – EXCESSIVE OVERSPEED

Engines which have experienced overspeeds of this magnitude are considered to have suffered an excessive overspeed condition. These engines must be dealt with on an individual basis by the TCM Technical Customer Service department located in Mobile, Alabama, 1-251-438-3411 Extension 8299 or 1-800-826-5465 Option 1. Factors such as time at speed, engine age, engine type, application and other related circumstances will be taken into consideration. As a minimum, the following procedures will be required:

- A. Remove the engine and clearly identify as “Removed for excessive overspeed”.
- B. The engine must be completely overhauled in accordance with the manufacturers overhaul instructions. Accessories must be inspected and overhauled in accordance with their manufacturer’s maintenance instructions.
- C. Connecting rods, connecting rod bolts, and all valve train components must be replaced without consideration of normal wear tolerances of inspection procedures.

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MO	DAY	YEAR	MO	DAY	YEAR		2 of 2	
01	31	2005					SB05-2	