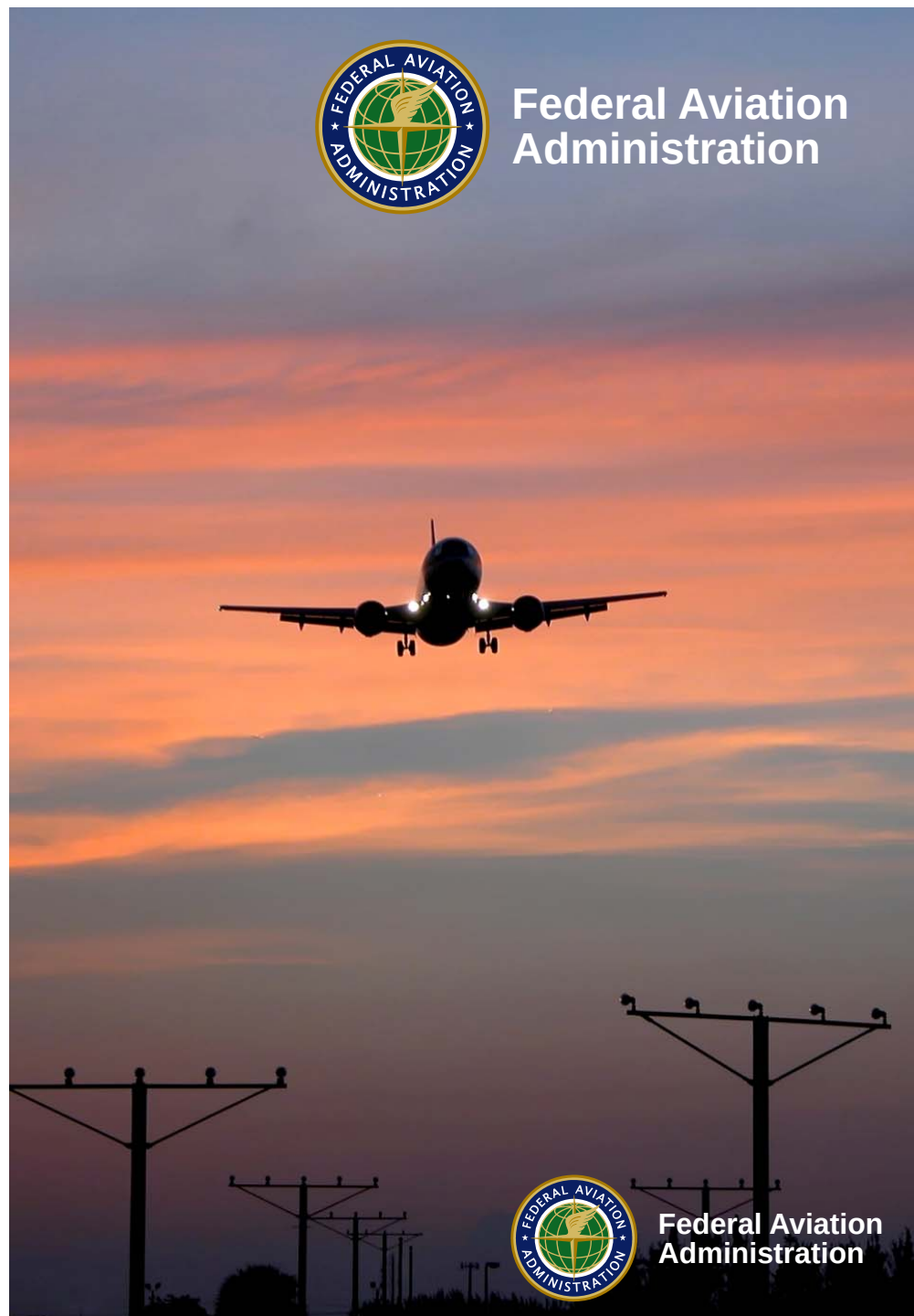


R-1340-AN1 S/N 16302 Engine Inspection

**Younkin Aviation
West Fork, AR
3 October 2017**

The following personnel were present for the inspection:

Ken Miller	- Younkin Aviation
Greg Miller	- Younkin Aviation
William Kelly	- FAA Little Rock FSDO
Anthony Flores	- FAA Little Rock FSDO



R-1340-AN1 S/N 16302 Engine Inspection

Engine Information

- Manufacturer – Pratt and Whitney
- Model – R-1340-AN1
- Serial Number – 16302
- Time Since Overhaul – Approximately 800 hrs.
- Engine was involved in an accident and received at Yunkin Aviation for evaluation and repair.



Federal Aviation
Administration

R-1340-AN1 S/N 16302 Engine Inspection

Engine Teardown Information

Engine was partially disassembled to supercharger drive section prior to FAA arrival with the following observations:

- One supercharger drive gear tooth was located in the engine oil sump.
- Crankshaft end play was measured to have increased by .003 in from recoded clearance in overhaul build record.
- Thrust bearing shows signs of propeller strike.
- Supercharger drive section was not disassembled.



Federal Aviation
Administration

R-1340-AN1 S/N 16302 Engine Inspection

Engine Teardown Information

Disassembly of supercharger drive section with the following observations:

- Supercharger multiplier drive gear had three missing teeth.
- Supercharger impeller was not damaged, showed sign of slight rub.
- Oil filter showed signs of high carbon content and some debris, very little metallic content.



Federal Aviation
Administration

R-1340-AN1 S/N 16302 Engine Inspection

Engine Information

General Observations

- Engine appears to have been operated in a dirty environment with lack of regular cleaning.
- Surface rust was noted on internal oil transfer tubes, cam drive gear, on supercharger drive gear.

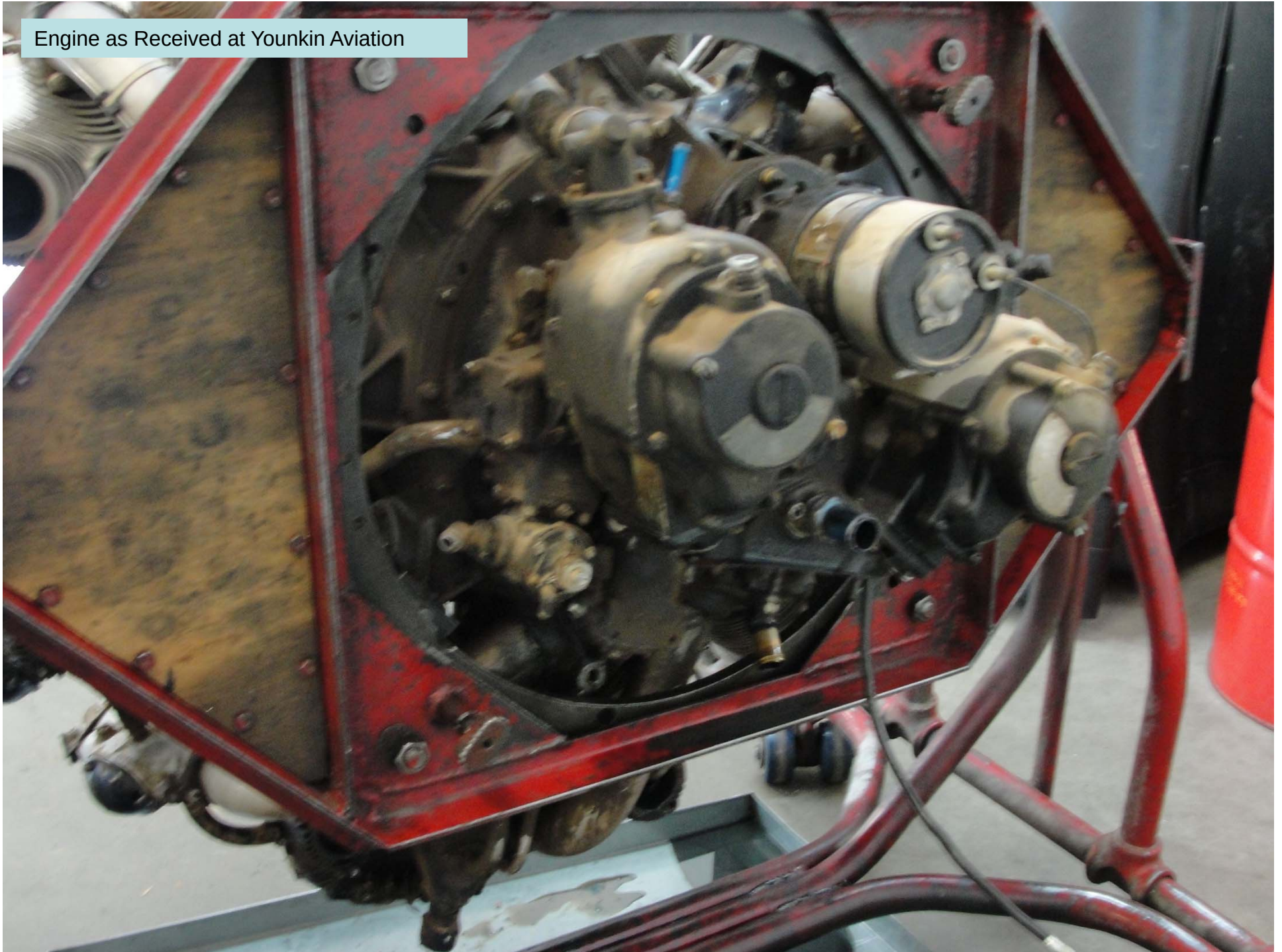


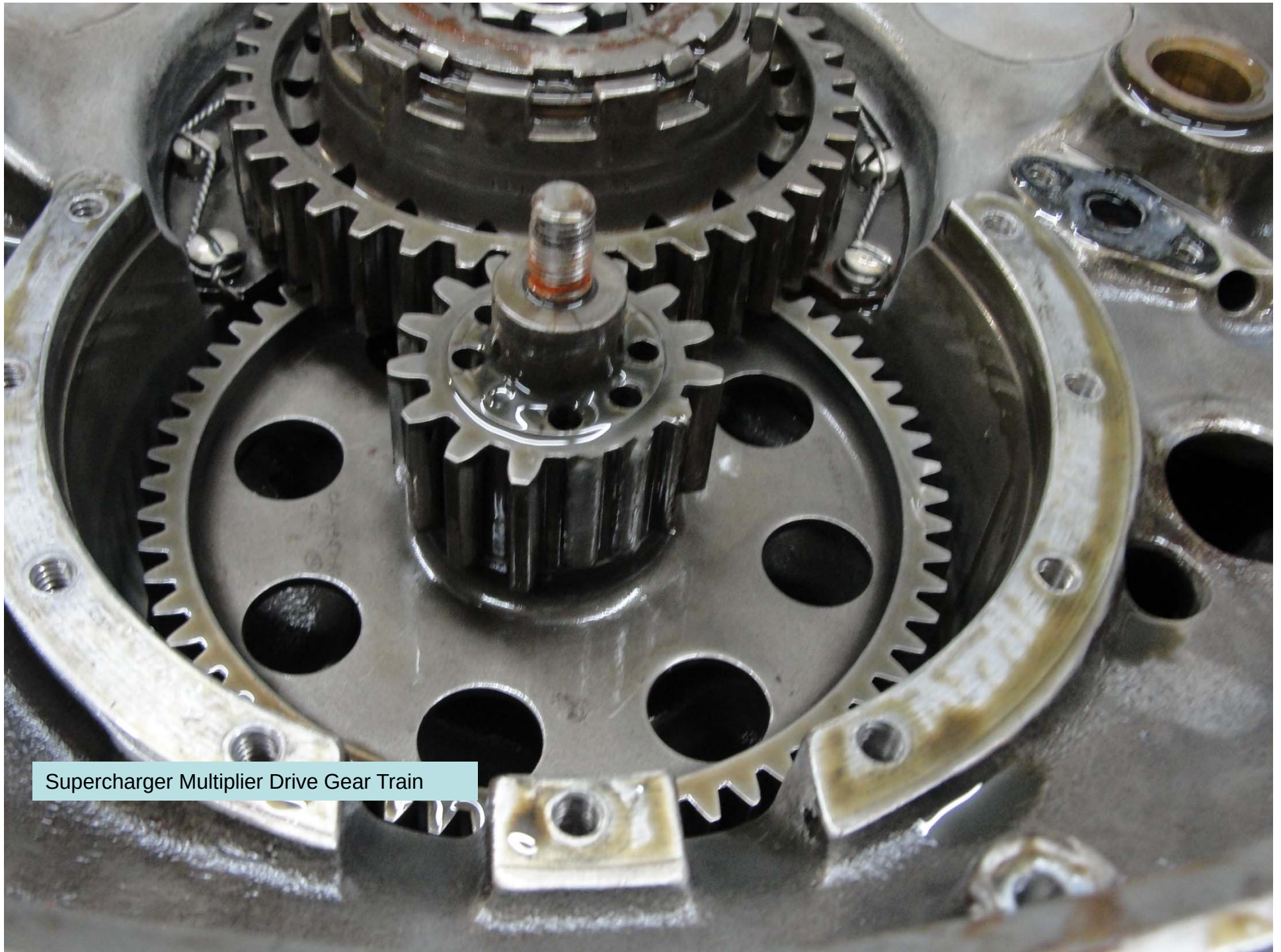
Federal Aviation
Administration

Engine as Received at Younkin Aviation



Engine as Received at Younkin Aviation

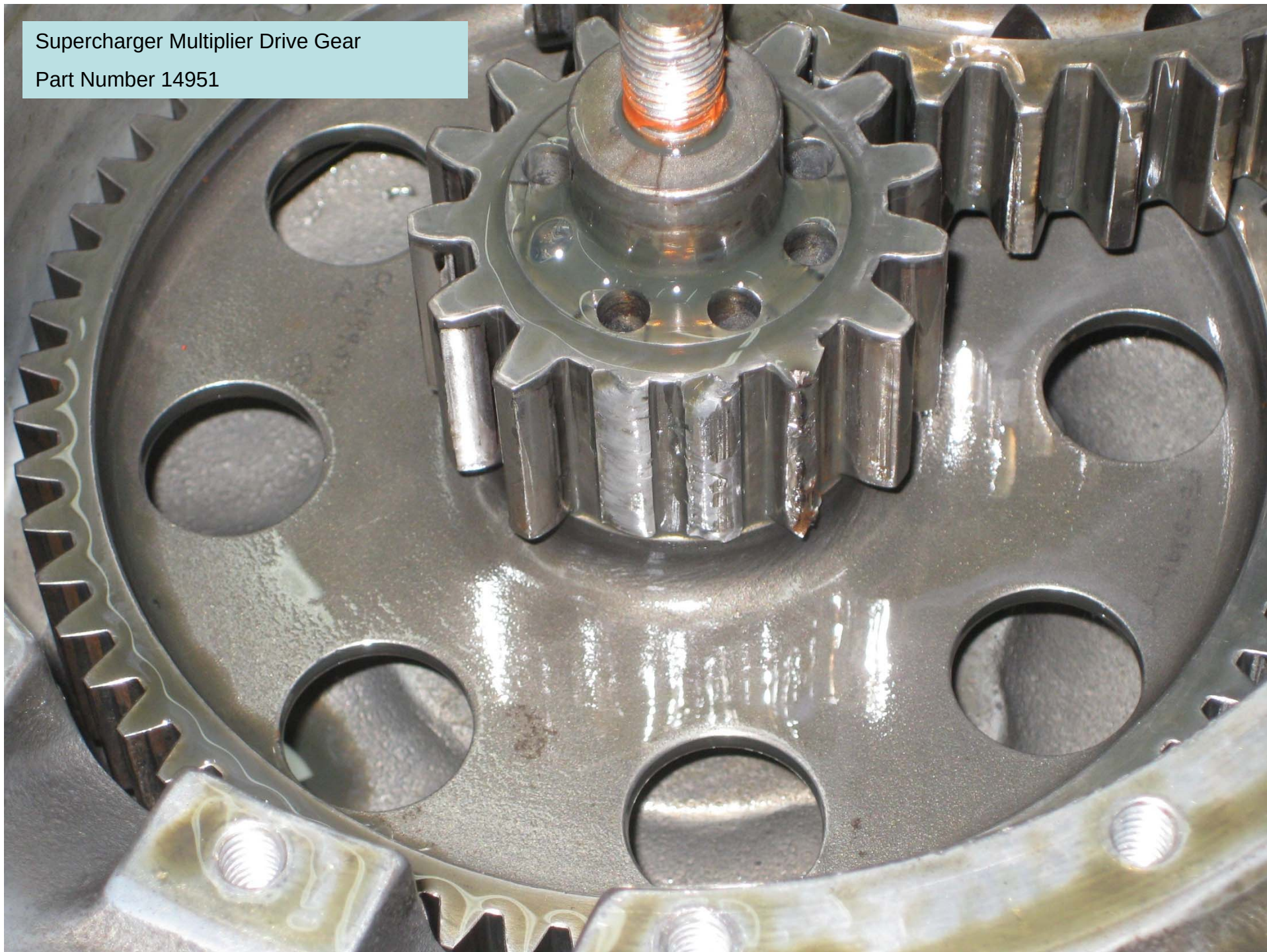




Supercharger Multiplier Drive Gear Train

Supercharger Multiplier Drive Gear

Part Number 14951



Supercharger Multiplier Drive Gear Tooth
Found in Oil Sump

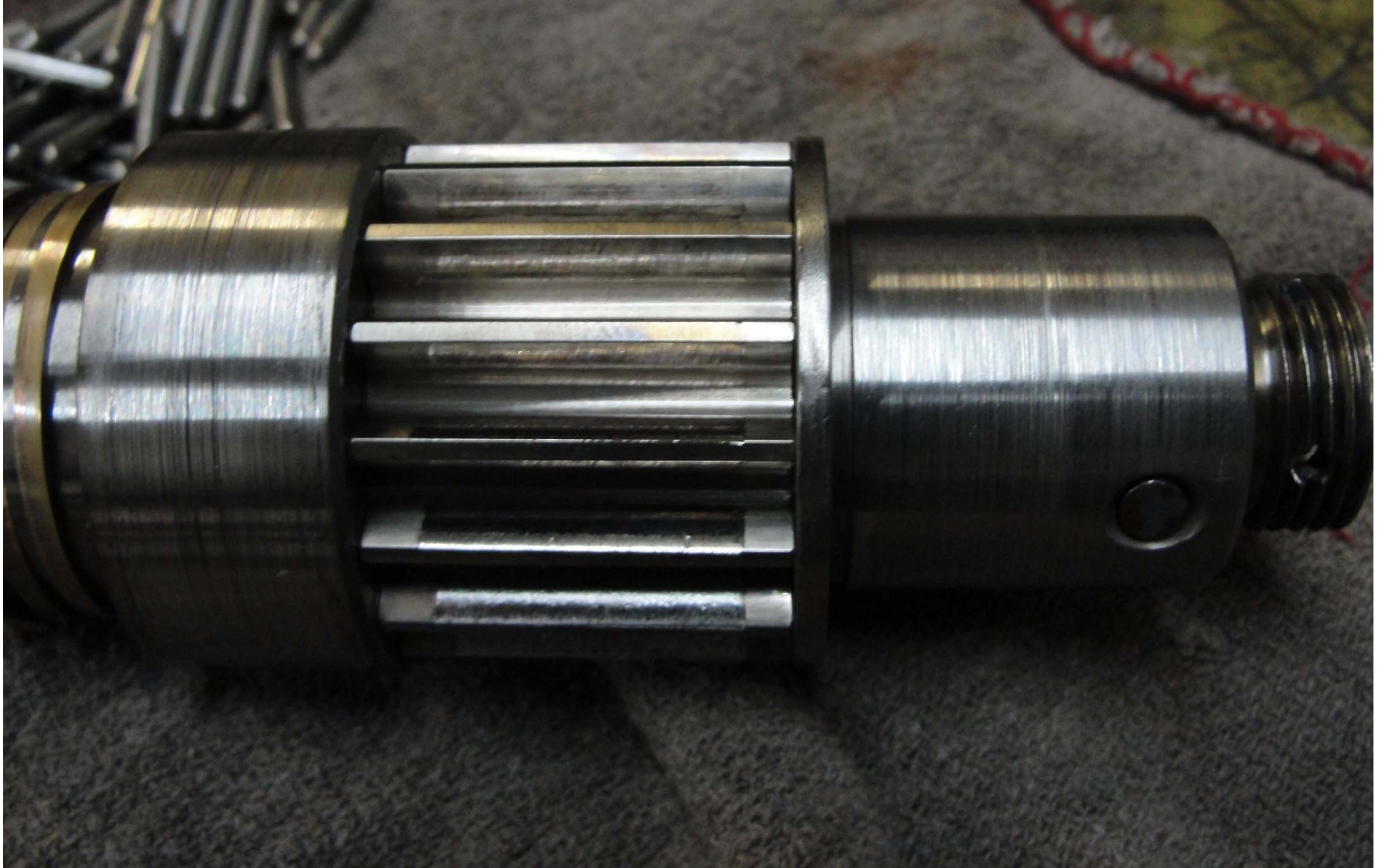


Recovered Supercharger Multiplier Drive
Gear Teeth



Supercharger Drive Shaft, Signs of Scoring
on Bearing Surface.

Normally induced by application of power
with engine not properly warmed-up



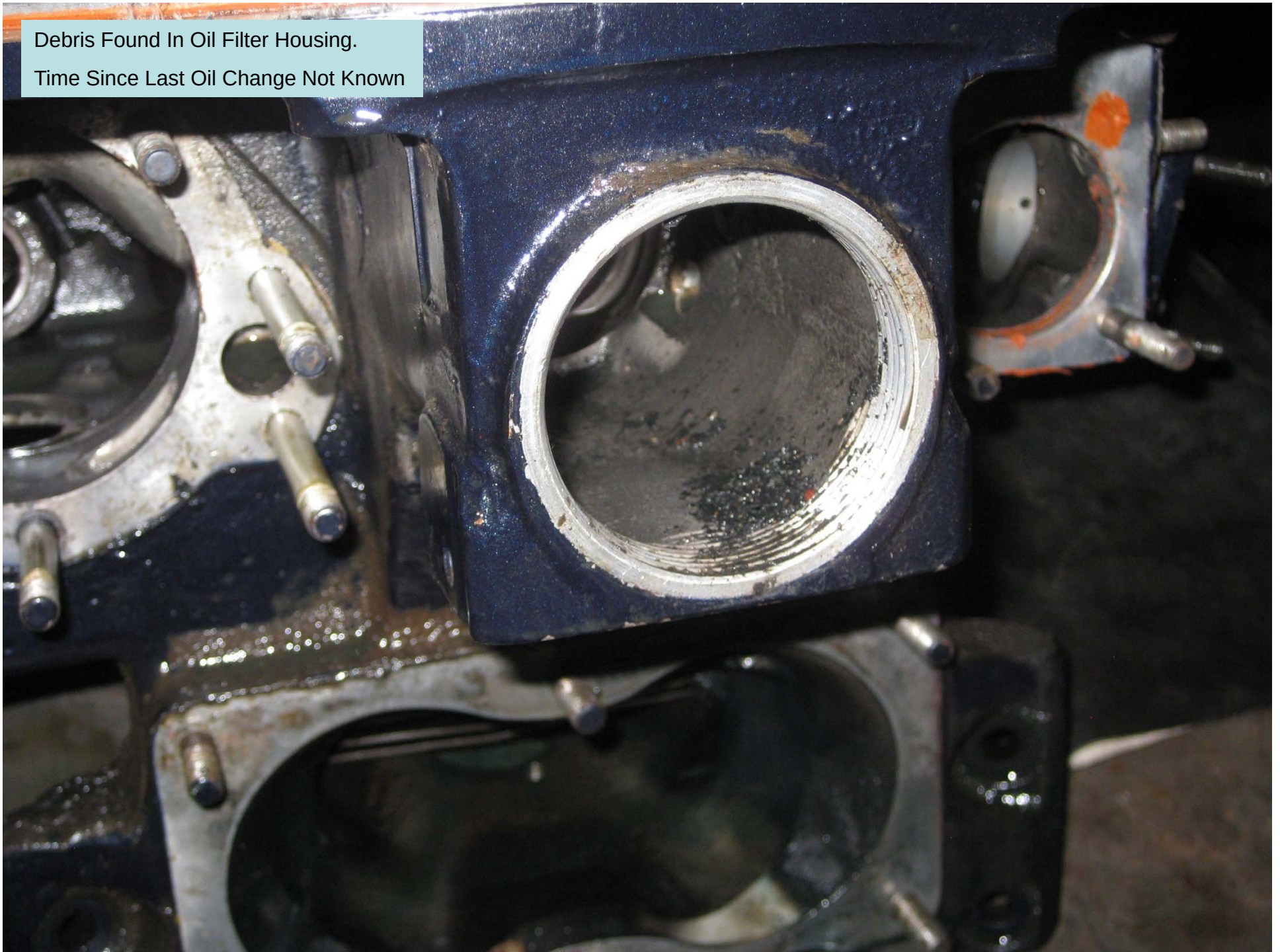
Debris Found In Oil Filter.

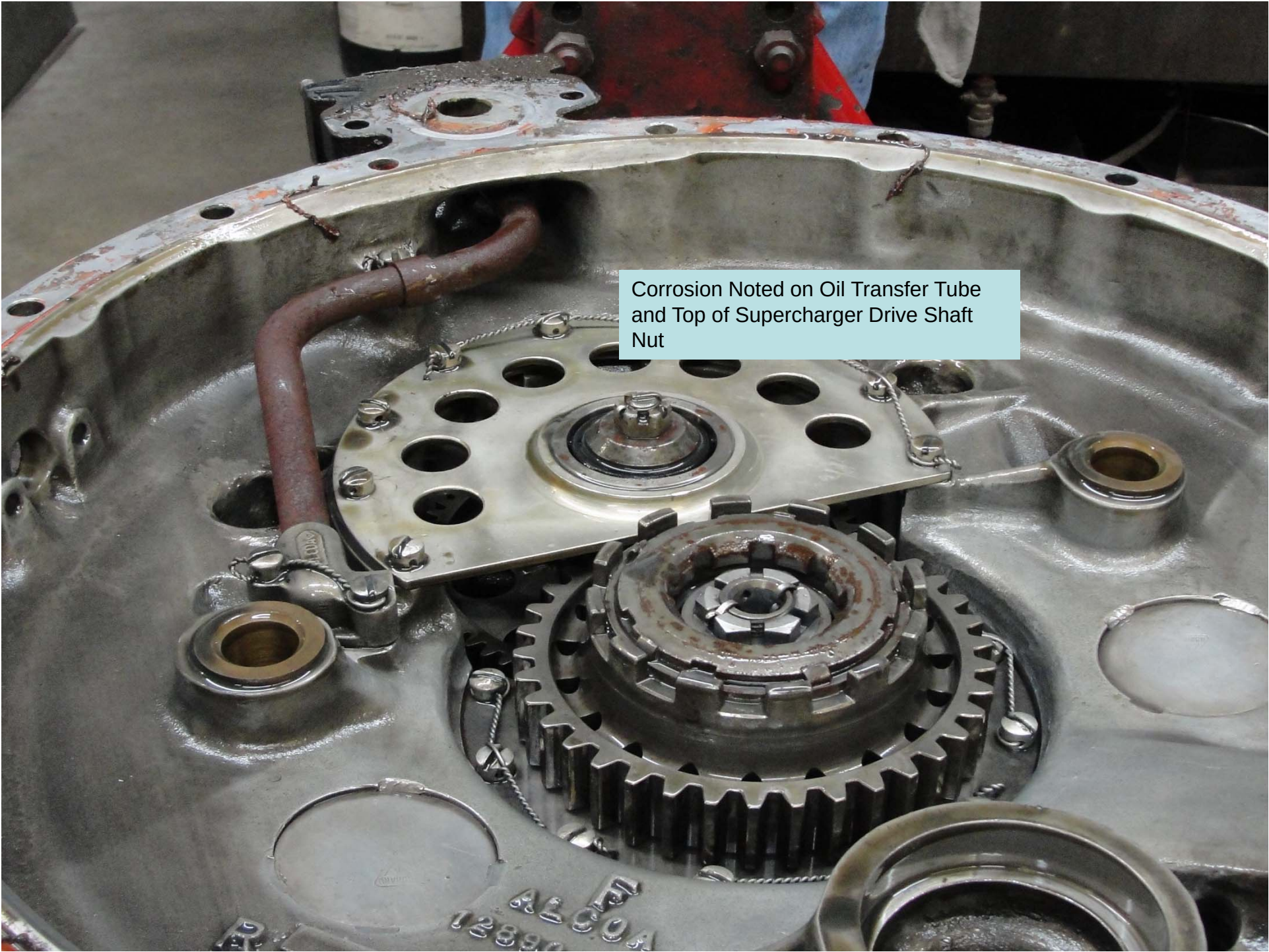
Time Since Last Oil Change Not Known



Debris Found In Oil Filter Housing.

Time Since Last Oil Change Not Known

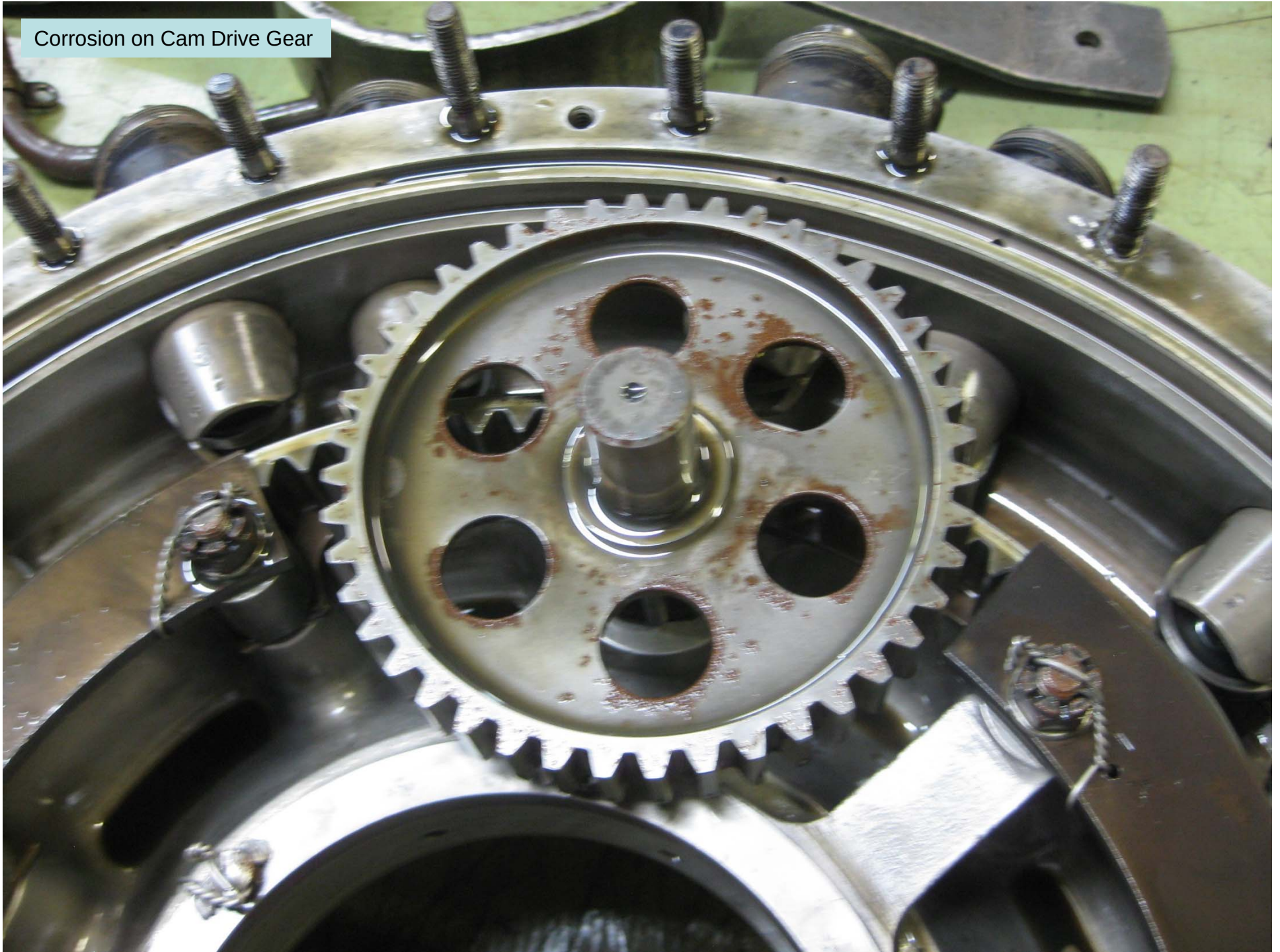




Corrosion Noted on Oil Transfer Tube
and Top of Supercharger Drive Shaft
Nut

The image shows the internal components of an engine, specifically the oil pan area. A large, curved metal oil pan is visible, with a central oil pump and a supercharger drive shaft assembly. The oil transfer tube, which is a curved metal pipe, shows significant rust and corrosion. The top of the supercharger drive shaft nut also exhibits corrosion. The oil pan has several circular holes and a central oil pump assembly. The supercharger drive shaft is a large, circular gear-like component. The overall condition of the engine components appears to be poor, with significant rust and corrosion visible throughout.

Corrosion on Cam Drive Gear



- **The FAA was requested to provide on-site support and monitor the engine teardown and inspection of R-1340-AN1, S/N 16302.**
- **William Kelly – FAA Aviation Safety Inspector**
 - **Little Rock, AR FSDO - SW-11**

