

DESCRIPTION AND MAINTENANCE INSTRUCTIONS

HIGH CYLINDER HEAD TEMPERATURES  
TROUBLE SHOOTING  
ENGINES - PISTON TYPE - GENERAL

(This EO replaces EO 10A-1-2AM dated 19 Feb 58)

GENERAL

1 The most effective means of eliminating high cylinder head temperatures is to utilize operation and maintenance procedures which have been collected from various sources and under varying conditions.

2 Following is a list of items which have been known to affect cylinder head temperatures. These are listed as a guide only, to aid in pin-pointing when trouble shooting. When repairs, replacements or adjustments are necessary refer to applicable airframe or engine EO.

TROUBLE	CHECK	REMEDY
<b>CARBURETTORS</b>		
Air leak between carburettor adaptor and intermediate rear case.	By trying to insert a .002 feeler gauge. If feeler gauge enters, a lead is evident. Check carburettor adaptor for warpage. Check rear case for warpage.	Replace necessary part.  NOTE MRP may insert shim stock for temporary repair.
Out of flow limits. Automatic Mixture Control out of calibration.	Remove.	Replace AMC. Replace carburettor.
Carburettor emergency rich by-pass plates leaking.	A change in CHT should be noted between Emergency Rich and Auto Rich.	Replace carburettor.
Mixture Control out of rig.	Check rigging from cockpit quadrant to carburettor.	Re-rig if necessary.

TROUBLE	CHECK	REMEDY
<b>COWLING &amp; COOLING</b>		
Improperly adjusted cowl flaps.	Check rigging for travel, looseness and wear.	Re-rig, replacing parts as necessary
Turbulence of carburettor air due to improper fitting of airscoop cowling and leather strips.	Inspect cylinder head anti-drag ring pad assembly, check leathers for wear, check toggle assembly for proper lock and tension. Refit cowling and test fly.	Make certain leather is forward of head baffles and not blocking entrance to spark plug blast tubes.
Air blast tubes to rear spark plugs bent or missing.	Visual.	Replace or repair.
<b>ELECTRICAL</b>		
Improper installation of thermocouple.	Check for proper type, crossed wires at connections, proper nuts and installation at instrument resistance of wiring (8 ohm). Check all connections for proper routing and loose connections.	Repair as necessary.
Electrical induction pick-up.	In flight, turn off all generator and battery switches and check for change in CHT.	Re-route thermocouple wiring.
Static electrical pick-up.	Check all engine bonding for clean contact and condition.	Replace or repair.
Electrical pick-up from tachometer generator.	Remove Tachometer generator and test.	Re-route wiring.
<b>LEAKS</b>		
Leaking Primer.	With pressure on carburettor, disconnect primer line at engine.	Replace or repair.
Induction Leaks	Check intake pipes, couplings, Allen plugs, etc.	Tighten or replace.
Leaking Blower Drain.	Check operation either by removal or blow and suck method.	Replace.

TROUBLE	CHECK	REMEDY
<b>INTERNAL</b>		
Incorrect piston and ring set-up. Instances of feathered rings in barrels.	Remove cylinder and inspect condition of barrel and rings.	Replace cylinder and piston assembly.
Incorrect timing.	Check magneto timing and synchronization.	Re-time and synchronize.
Incorrect valve clearance.	Check valve clearances.	Re-set.
Roughness and overheating.	Cam on magneto.	Replace magneto.
<b>CYLINDERS</b>		
Loose spark plug bushing.	Leakage test, EO 10A-1-2Q.	Replace cylinder.
Low compression.	Leakage test, EO 10A-1-2Q.	Replace cylinder.
<b>MISCELLANEOUS</b>		
Improper routing of prop feathering oil line to governor.	Visual.	Re-route.
Propellor blade angles.	Check low pitch stops.	Re-set.
Restricted fuel flow.	Fuel screens and emergency shut-off valve.	Repair or replace.
Exhaust collector system.	Check for excessive leakage.	Repair or replace.
Overheating.	Anti-icing nozzle flow for leakage.	Repair.

ISSUED ON AUTHORITY OF THE CHIEF OF THE AIR STAFF

