

Indicated Malfunction	Probable Causes	Suggested Action
Engine has low rpm, exhaust gas temperature, and fuel flow when set to expected engine pressure ratio.	<ul style="list-style-type: none"> <li>Engine pressure ratio indication has high reading error.</li> </ul>	<ul style="list-style-type: none"> <li>Check inlet pressure line from probe to transmitter for leaks.</li> <li>Check engine pressure ratio transmitter and indicator for accuracy.</li> </ul>
Engine has high rpm, exhaust gas temperature, and fuel flow when set to expect engine pressure ration.	<ul style="list-style-type: none"> <li>Engine pressure ratio indication has low reading error due to: <ul style="list-style-type: none"> <li>Misaligned or cracked turbine discharge probe.</li> <li>Leak in turbine discharge pressure line from probe to transmitter.</li> <li>Inaccurate engine pressure ratio transmitter or indicator.</li> <li>Carbon particles collected in turbine discharge pressure line or restrictor orifices.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Check probe condition.</li> <li>Pressure-test turbine discharge pressure line for leaks.</li> <li>Check engine pressure ratio transmitter and indicator for accuracy.</li> </ul>
Engine has high exhaust gas temperature, low rpm, and high fuel flow at all engine pressure ratio settings.	<ul style="list-style-type: none"> <li>Possible turbine damage and/or loss of turbine efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>Confirm indication of turbine damage by: <ul style="list-style-type: none"> <li>Checking engine coast-down for abnormal noise and reduced time.</li> <li>Visually inspect turbine area with strong light.</li> </ul> </li> </ul>
NOTE: Engines with damage in turbine section may have tendency to hang up during starting.	<ul style="list-style-type: none"> <li>If only exhaust gas temperature is high, other parameters normal, the problem may be thermocouple leads or instrument.</li> </ul>	<ul style="list-style-type: none"> <li>Re-calibrate exhaust gas temperature instrumentation.</li> </ul>
Engine vibrates throughout rpm range, but indicated amplitude reduces as rpm is reduced.	<ul style="list-style-type: none"> <li>Turbine damage.</li> </ul>	<ul style="list-style-type: none"> <li>Check turbine as outlined in preceding item.</li> </ul>
Engine vibrates at high rpm and fuel flow when compared to constant engine pressure ratio.	<ul style="list-style-type: none"> <li>Damage in compressor section.</li> </ul>	<ul style="list-style-type: none"> <li>Check compressor section for damage.</li> </ul>
Engine vibrates throughout rpm range, but is more pronounced in cruise or idle rpm range.	<ul style="list-style-type: none"> <li>Engine-mounted accessory such as constant-speed drive, generator, hydraulic pump, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Check each component in turn.</li> </ul>
No change in power setting parameters, but oil temperature high.	<ul style="list-style-type: none"> <li>Engine main bearings.</li> </ul>	<ul style="list-style-type: none"> <li>Check scavenge oil filters and magnetic plugs.</li> </ul>
Engine has higher than normal exhaust gas temperature during takeoff, climb, and cruise. Rpm and fuel flow higher than normal.	<ul style="list-style-type: none"> <li>Engine bleed-air valve malfunction.</li> <li>Turbine discharge pressure probe or line to transmitter leaking.</li> </ul>	<ul style="list-style-type: none"> <li>Check operation of bleed valve.</li> <li>Check condition of probe and pressure line to transmitter.</li> </ul>
Engine has high exhaust gas temperature at target engine pressure ratio for takeoff.	<ul style="list-style-type: none"> <li>Engine out of trim.</li> </ul>	<ul style="list-style-type: none"> <li>Check engine with jetcal. Re-trim as desired.</li> </ul>

**Figure 10-75.** Troubleshooting turbojet engines.