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| <b>CUSTOMER</b><br>HONEYWELL ENGINES & SYSTEMS                  |                                             |                                                                 | <b>INVESTIGATION NO</b><br>1180358-1          |
| <b>CUSTOMER ORDER</b><br>Crash Investigation                    |                                             | <b>WOODWARD SALES ORDER</b><br>3815588                          | <b>WOODWARD WORK ORDER</b><br>B529301         |
| <b>CUSTOMER REJECTION DOCUMENT (CAR,QN RFA DMR,ETC.)</b><br>N/A |                                             | <b>WARRANTY DISPOSITION</b><br>N/A                              | <b>PRODUCT STATUS</b><br>N/A                  |
| <b>PROGRAM/ENGINE TYPE</b><br>GARRETT                           |                                             | <b>ITEM RECEIVED</b><br>8070-240                                | <b>ENGINE MFR. MODEL RECEIVED</b><br>N/A      |
| <b>PROGRAM CODE</b><br>82228                                    | <b>SERIAL NUMBER</b><br>1478487             | <b>ITEM SHIPPED</b><br>8070-240                                 | <b>ENGINE MFR. MODEL SHIPPED</b><br>869199-31 |
| <b>PARENT ITEM NUMBER</b><br>8070-240                           | <b>PARENT ITEM SERIAL NUMBER</b><br>1478487 | <b>FIRST SHIPPED</b><br>03-AUG-2022                             | <b>LAST SHIPPED</b><br>03-AUG-2022            |
| <b>CUSTOMER SERIAL NUMBER</b><br>N/A                            | <b>APPLICATION</b><br>N/A                   | <b>VESSEL TYPE &amp; VESSEL NUMBER</b><br>Grumman G-164B N3629F | <b>SITE &amp; LOCATION GRID ID</b><br>N/A N/A |
| <b>TIME/CYCLES SINCE NEW, OVERHAUL, OR REPAIR</b>               |                                             |                                                                 |                                               |
| <b>DATE REPORT OPENED</b><br>25-JUL-2022                        |                                             | <b>DATE PART REMOVED</b><br>N/A                                 | <b>DATE RECEIVED</b><br>19-JUL-2022           |

**TEAM MEMBERS (D1)**

Product Engineer: Brandon Bolley  
Customer QA Engineer: Jean Taylor  
Tech Advisor/Reviewer: Jeffrey T. Sympson  
Compliance: Robert A. Feggestad

Customer Account Manager: Charles J. Johnson  
Customer Service Rep: SHANNON L. COTE  
Product Integrity Coordinator: James D. Rosplack

**REASON FOR INVESTIGATION (D2)**

Reported Issue: On July 30, 2021, about 1423 Pacific daylight time, a Grumman G-164B airplane, N3629F, was substantially damaged when it was involved in an accident near Tracy, California. The pilot was not injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 137 aerial application flight. The pilot reported that he was just beginning his 8th pass over a hay field that was located beneath high- tension power lines. He planned to repeat his previous passes by flying south below the high-tension power lines, which ran diagonally across the field (northeast to southwest) and the flight path. When the pilot was about midfield, he experienced a total loss of engine power accompanied by a vibration. The pilot stated that his airspeed was about 130 mph at the time of the power loss, but it decayed rapidly. He was unable to enter a climb due to the power lines located overhead. The pilot flew about 10-15 ft above ground level under another set of power lines at the south end of the field to an adjacent field. He then began a shallow right turn to orient the airplane parallel to a series of raised dirt beds. However, during the turn the airplane contacted the ground and several trees. Photographs showed substantial damage to the fuselage and wings. The wreckage was retained for further examination.

**CONTAINMENT/IMMEDIATE ACTIONS (D3)**
**INVESTIGATION SUMMARY (D4)**

Confirmation Text: NO REPORTED PROBLEM

Discrepant Item Number: NA

Discrepancy: No Discrepancy Found

Finding: No Findings

Conclusion:

S/N 1478487 was originally shipped in February 1978. The presence of foreign lockwire indicates that the unit was serviced at another facility since it was last shipped from Woodward. The unit was returned with customer fittings, power lever and speed lever linkages, pressurizing valve assembly, and the Tt2 sensor still installed. The Tt2 sensor and customer hardware were removed and a visual as-received inspection was performed.

Minor damage was observed on the housing near the Pt2 bellows and one of the attachment screws was missing from the main cover. The power lever, speed setting lever, and drive spline were all free to rotate normally. The inlet fuel filter had been removed and bagged separately with the FCU. The inlet transfer tube that mates with the fuel pump was missing.

A slave inlet filter and transfer tube were installed and the unit was tested per the applicable TSP. There were three points on the Standard Day Accel schedule out of limits by up to 4.7% and four points high out of limits on the 15k foot Accel schedule by up to 2.5%. The 30k foot Accel schedule was high out of limits by up to 8%. There was one test point low by less than 1% on the Hot Day Accel schedule and one point high by 4% on the Cold Day Accel schedule. Two points on the Decel schedule were low by up to 2%.

The Underspeed Governor 65% speed schedule was within limits. The Underspeed Governor 97% speed schedule had lean fuel flow of 161 pph (Limits: 165 to 175 pph). The Overspeed Governor schedule had rich fuel flow at 103.5% speed and lean fuel flow at 105.8% speed. At 103.5% speed the fuel flow was 262 pph (Limits: 190 to 210 pph). At 105.8% speed the fuel flow was 102 pph

(Limits: 104 to 114 pph).

The standard day Max Power setting on the power lever schedule was within limits. The Tt2 Correction test points were high out of limits by up to 1.6%. The Pt2 Correction test points were also high out of limits at maximum power lever. The 30k foot test point was high by 27% and the 15k foot test point was high by 7%. Rich fuel flows at high altitude conditions would not contribute to the reported issue.

The Flight Idle setting was low out of limits at 138 pph (Limits: 178 to 188 pph). This is considered a normal customer adjustment. The Tt2 Correction and Pt2 Correction schedules were consistent with the out of limits fuel flow of the standard day Flight Idle setting.

The Tt2 sensor bellows length was measured using tool WT-51467 to determine sensor calibration. The sensor measured 1.024 inches at room temperature, which is within calibration requirements of 1.023 +/- .002 at 75 deg F.

Since no malfunctions were observed during as-received testing it was decided not to disassemble the control.

**ROOT CAUSE (D4)**

Origin of Cause: NONE

General Cause: No Problem Found

Cause: No Problem Found or Identified

Cause Notes:

The control was functionally tested and no evidence of a pre-incident malfunction was found.

**CORRECTIVE ACTION PLAN (D5)**

General Corrective Action: None Required

Specific Corrective Action: None Required

Corrective Action:

**CORRECTIVE ACTION IMPLEMENTATION (D6)**

Corrective Action Status: NO ACTION