

# **ATTACHMENT 1**

## **AIRWORTHINESS GROUP CHAIRMAN FACTAULA REPORT**

**NTSB No. DCA20MA059**

**Summary List of Avionics Documentation  
(14 Pages)**

**ATTACHMENT 1 – LIST OF RECOVERED AVIONICS DOCUMENTED  
DURING WRECKAGE LAYOUT  
January 30-31, 2020**

Note: Equipment numbers refer to numbers written on components using permanent marker for identification. Pictures of all components were taken during wreckage layout.

Electronic Display (ED-600)

- Part of EDZ-705 EFIS system
- PN: 7003430-902
- SN: 83070143
- Mod: A-H, K
- Repair stamp 2/21/1995
- Crushed, fire damaged.

Electronic Display (ED-600)

- Part of EDZ-705 EFIS system
- PN: 7003430-902
- SN: 90011579
- Mod: A-K
- Repair stamp 7/25/1996, Reference #353480
- Crushed, fire damaged.

Air Data Sensor (ADC) AZ-649

- PN: 7002353-902
- SN: 87080444
- Impact damaged.

Emergency Power Supply for the Standby Display

- PN: 501-1228-04
- Model PS-835D
- SN: 14406
- Mod: 1-6
- Impact damaged.

Altimeter

- Manufacturer: Kollsman
- PN: 24929532
- SN: 3158
- Manufacturer Date: 8-90
- Mod: A, B and more that were not discernable
- Earthen debris was adhered to the outside of the unit.

- During the wreckage layout the indicated value had changed since the on-scene examination. During the wreckage layout the altitude drum displayed 1000 ft (needle was detached) and the pressure setting was approximately 30.17 inHg.

Unknown (Equipment #1)

- Manufacturer: Honeywell
- A label on an attached part indicated RANTEC SMI-14-01F, PN: 7003127-1, S/N 32597
- This part appeared to be broken from a larger piece.

Unknown (Equipment #2)

- The part was fire damaged and fragmented.

Unknown (Equipment #3)

- Two units connected with same Collins labeled mount.
- Collins mount: UMT-12 Mount 622-5212-003
- The two units were impact damaged.

Flight Control Computer

- Maintenance records indicate it was PN 7003183-914 (S/N 95080487 or 84120202). This PN corresponds to a Honeywell FCC model FZ-700.
- Unknown which side this was associated with. The unit was labeled as “FCC1” by investigators for identification purposes only, not because of position on the aircraft.
- Impact and fire damaged
- The top was missing to the unit.
- Tray was still attached

Flight Control Computer

- Maintenance records indicate it was PN 7003183-914 (S/N 95080487 or 84120202). This PN corresponds to a Honeywell FCC model FZ-700.
- Unknown which side this was associated with. The unit was labeled as “FCC2” by investigators for identification purposes only, not because of position on the aircraft.
- Impact damaged
- The top was torn and the front was missing to the unit.
- Tray was still attached.

Unknown (Equipment #4)

- Impact damaged
- Fire damaged
- The top was missing to the unit.
- Tray was still attached

Radio Altimeter Transceiver

- Manufacturer: Collins
- Model: ALT-50A
- PN: 622-3201-001

- SN: 6896
- Mod: 1-3
- Unit was impact damaged.

#### TCAS

- Manufacturer: Bendix King
- Model: TPU66A TCAS 1
- PN: 066-01145-0101
- SN: 1834
- Software level 2
- Mod: 1-9, 12, 14, 15, 17, 18, 25, 30
- Impact damaged
- Tray was still attached.

#### Unknown Unit (Equipment #5)

- Impact damaged
- Fire damaged
- The top was missing to the unit. Front is missing to the unit.
- Tray was still attached

#### Display Unit:

- Part of EDZ-705 EFIS system
- PN: 7003430-902
- Model: ED-600
- SN: 84010174
- Unit was fragmented with very few components remaining.

#### Unknown (Equipment #6)

- Unit was unidentifiable but was still attached within a Collins labeled tray.
- Unit was impact and fire damaged.

#### Unknown (Equipment #7)

- Fire damaged
- Impact damaged
- Unable to read the data plate on the unit.

#### Display Controller

- Manufacturer: Honeywell
- Model DC-811
- PN: 7012977-73? (label damaged)
- SN: 0110? (label damaged)
- Mod: A-D
- Impact damaged.

#### Garmin Transponder

- GTX-335
- PN: 011-03300-40
- SN: 3EE422301
- Impact damaged
- Tray was pried open during wreckage exam to expose the data plate info.

Emergency Locator Transmitter

- PN and SN were unreadable
- Impact damaged

Altitude Preselect Command Controller

- Manufacturer: Sperry
- PN: ??2-904 (label damaged)
- SN: ??0213 (label damaged)
- Impact damaged

Unknown (Equipment #8)

- Manufacturer: Rantec
- PN: 7003127
- A label on the part indicated RANTEC SMI-14-01 E/1
- SN: 10152
- Fire and impact damaged. This part appeared to be broken from a larger piece.

Unknown (Equipment #9)

- No label identified
- Impact and fire damaged

Unknown (Equipment #10)

- No label identified
- Impact and fire damaged

Unknown Indicator (Equipment #11)

- Front dimension is approximately 2" x 2" square
- Impact and fire damaged.

Unknown Indicator (Equipment #12)

- Front dimension is approximately 2" x 2" square
- Impact and fire damaged.

Unknown (Equipment #13)

- No data plate readable
- Fire and impact damaged
- One knob has writing which states "PULL SYNC"

Unknown (Equipment #14)

- No data plate readable
- Fire and impact damaged
- One knob has writing which states “PULL SYNC”

Unknown (Equipment #15)

- No label to identify the unit.
- Fire and impact damaged.

Dimmer Controllers

- A total of 7 dimmer controllers were identified in the wreckage.
- FL Aerospace Corporation
- PN: 70-0158-5 Rev R
- SN: 2275, 2158, 2196, 2276, 2277, and 2 that are unknown/not legible
- All were impact damaged. Some were fire damaged.

Unknown (Equipment #16)

- Fire and impact damaged.

Generator Control Unit

- Manufacturer: Lear Siegler
- PN: 76550-09006-106
- SN: 8181A
- Date Code: 03-81
- Impact and fire damaged

Unknown (Equipment #17)

- Manufacturer: Honeywell
- Much of label is unreadable
- SN: 90100714
- TSO C3c, C6c, C34d listed on label
- Fire and impact damaged

Rate Gyros (quantity 2) (Equipment #18)

- Both units were still attached to a portion of airframe
- Impact and fire damaged.

Unknown (Equipment #19)

- Impact and fire damaged
- Item had no distinguishable data plate or face plate

Unknown (Equipment #20)

- Impact and fire damaged
- Item had no distinguishable data plate or face plate

Flight Director Mode Selector (Equipment #21)

- Impact and fire damaged
- No distinguishable data plate
- Front buttons were missing or damaged

Fuel Flow Indicator (Equipment #22)

- Identified as fuel flow based on the remaining face plate that could be seen
- PN: PC90?-ECA?-??01 (label damaged)
- Manufacturer: ??? Technologies, Inc (label damaged)
- SN: ???510 (label damaged)
- Impact damaged
- Needle was approximately halfway between the 0 and 100 indication.

Pitot Static Tube

- Unit is bent
- Manufacturer: Rosemont
- PN: 856LK-2
- SN: 124077

Engine Oil Temperature/Pressure Indicator (Equipment #23)

- No needle was present
- No discernable label on the unit
- The faceplate is present.
- Impact and fire damaged

Unidentified Indicator (Equipment #24)

- Impact and fire damaged
- Face plate missing

Unidentified Indicator (Equipment #25)

- Impact and fire damaged
- Face plate missing

Unknown (Equipment #26)

- No label present
- Fire and impact damaged

AC Voltmeter:

- Manufacturer: INSCO
- PN: 90?3?10 (label damaged)
- SN: ?40 (label damaged)
- Date of manufacture: May 90
- Impact damaged.

DC Voltmeter:

- Manufacturer: INSCO

- PN: 9053-3010
- SN: 140
- Date of manufacture: May 90
- Impact damaged.
- Faceplate is present
- A portion of the needle was present and pointing out of range of the scale.

#### DC Voltage Sensor

- Manufacturer: Tempo Instrument
- PN: 07031-94327-1
- SN: 356
- Impact damaged and was still attached to a portion of the airframe

#### DME Indicator

- Manufacturer: Rockwell Collins
- PN: 622-6524-003
- SN: 1491
- Impact damaged

#### Control Adapter

- Manufacturer: Collins
- PN: 622-6590-001
- SN: 11360
- Impact damaged

#### ADF Control

- Manufacturer: Collins
- PN: 622-6522-007
- SN: 7927
- Impact damaged

#### AC Generator Control Unit (Equipment #27)

- Model: 51676
- PN and S/N not identifiable
- Impact damaged

#### Unknown (Equipment #28)

- No discernable data plate
- Impact damaged

#### Light Dimmer Power Supply and Other Unknown Attached Components (Equipment #29)

- Manufacturer: KGS Electronics
- Model LT-50(A)
- SN: 209
- Unit attached to structure with other unknown components also attached



- Components are fire and/or impact damaged

Linear Accelerometers (Quantity 2)

- Manufacturer: Systron Donner
- PN 65610-03031-103
- SN: 14587 and 14639
- The cannon plug on both units was detached and hanging by wires

Unknown (Equipment #30)

- No discernable data plate
- Impact damaged

Unknown (Equipment #31)

- Components include gearing, motor, and relays
- Impact damaged.
- Geared section remained attached to control unit by wires.

Unknown (Equipment #32)

- Impact and fire damaged
- No discernable data plate was present

Static Feeder Fault Protection Panel (Equipment #33)

- Model: 50284-003
- SN: 1449A
- Date: 04-90
- Fire and impact damaged

Unknown (Equipment #34)

- Fire and impact damaged

Unknown (Equipment #35)

- Impact damage
- Output gear was bent

Position Potentiometers (Equipment #36)

- Section of structure containing three potentiometers
- Impact and fire damaged.
- One input control arm remained approximately straight, one was bent, and one was missing
- One input shaft was seized
- One input shaft was free to rotate
- The input shaft missing the arm was free to rotate

Lightening Processor and Other Attached Components

- Section of structure containing three different components
- Lightening Processor Manufacturer: Honeywell

- Lighting Processor Model: LP-850
- Impact and fire damaged

Unknown (Equipment #37)

- Impact and fire damaged

Unknown (Equipment #38)

- Impact and fire damaged

Triple Tachometer (Equipment #39)

- The face had two needles. One needle had a “2” on it.
- Both needles were indicating approximately 115%
- The unit was impact and fire damaged

Airspeed Indicator (Equipment #40)

- The face was not readable until the front glass face was removed
- No data plate was identified
- The unit was impact and fire damaged.
- After removal of the front face glass, the needle was indicating approximately 65 knots

Dual Fuel Quantity Indicator (Equipment #41)

- The indicator had 2 concentric needles
- The two needles appeared to be indicating approximately 200 lbs
- The unit was impact and fire damaged

Fuel Flow Indicator (Equipment #42)

- The unit contained a single needle
- The needle was indicating approximately 0
- The unit was impact and fire damaged

Unknown (Equipment #43)

- The front of the unit had two switches
- Both switches are bent
- The unit was fire and impact damaged

Indicated Airspeed Indicator (Equipment #44)

- Manufacturer: Aerosonic Corporation
- PN: 20020-11293 (label partially damaged)
- SN: 251326
- The face was not readable until the front glass was removed
- After removal of the front face glass, the needle was indicating approximately 10 knots
- The unit was impact and fire damaged

Engine Oil Temperature/Pressure Indicator (Equipment #45)

- The unit was impact and fire damaged

- The indicator had one needle present
- After cleaning of the indicator face, the remaining needle pointed to approximately the 150° C tick mark

#### Hydraulic Pressure Indicator and Unknown Indicator (Equipment #46)

- There are two indicators still in portion of instrument panel
- One of the indicators states “HYD PRESS” on the face. The single needle is indicating approximately 2500 psi.
- The second indicator is damaged and unidentifiable
- Both indicators are fire and impact damaged

#### Torque Indicator (Equipment #47)

- Manufacturer: Gull Airborne Instruments, Inc
- Gull PN: 310-007?? (rest of P/N unreadable)
- The label indicated torque range 0-150%
- Unit was fire and impact damaged. Faceplate was missing.

#### Altimeter (Equipment #48)

- Manufacturer: Kollsman
- The unit was fire and impact damaged
- The cannon plug connector was still attached
- PN: ???532 (label damaged)
- SN: 3082
- After removal of the face, the drum dial read 2100 ft. The numbers were free to move and changed during light handling.
- The needle was detached but remained loose inside the glass face
- The altimeter settings were between 1020.5 and 1021 millibars and approximately 30.15 inHg.

#### Radio Altimeter Indicator (Equipment #49)

- Manufacturer: Collins
- PN: 622-1205-004
- SN: 465
- Modifications: 3-7
- The unit was fire and impact damaged
- Faceplate was severely damaged and rotated out of position

#### Unknown (Equipment #50)

- No label present.
- The unit was impact and fire damaged.
- The rear connector was still attached.

#### Autopilot Controller (Equipment #51)

- The unit was impact and fire damaged
- The front button faces were not present
- The front face was not present

- The unit's data plate was not present
- The "T" for top and "B" for bottom handwritten markings were determined by how it was still attached to the aircraft structure with the Flight Management System panel that was located just above it.

Flight Management System (FMS) Panel (Equipment #52)

- The panel was impact damaged
- Only the panel was present. The unit was not still attached.

Transmission Oil Temperature and Pressure Indicator (Equipment #53)

- Manufacturer: Gull Airborne Instruments, Inc
- Control Number: 76450-00907-103
- SN: 141
- Date: 49/8? (label damaged)
- Mod: None
- Impact damaged

Iridium Satellite Transceiver (Equipment #54)

- The unit was impact damaged.
- Model: 9602N
- IC: 4629A-9603N
- FCC ID: Q639603N
- SN: J10ELK

TCAS Control Panel (Equipment #55)

- Bendix King / Allied Signal
- PN: 071-01568-04
- SN: 1340

Garmin Transponder (Equipment #56)

- Model: GTX-335
- PN: 011-03300-40
- SN: 3EE423578
- Impact damaged
- Tray was pried open during wreckage exam to expose the data plate
- Mod: None

Directional Gyro (Equipment #57)

- No label present (Island Express records indicate it was a Honeywell C-14A, P/N 2587193-43, S/N 5115911).
- The lower portion of the gyro assembly was separated from the upper portion
- The lower housing (power supply) portion of the gyro was not present.
- The upper portion of the housing was bent and deformed. The spinning mass was trapped within the upper portion.

Push Button Switch from Instrument Panel (Equipment #58)

- Was located in a portion of a separated section of instrument panel
- It was the right most switch of the 4 in this area. The other 3 switches were missing.
- The switch is marked M22885/1084214/95-42-14
- Comparison to an exemplar S-76B determined that this was the Symbol Generator Reversion switch.

Pilot's Side Master Warning Annunciator Panel (Equipment #59)

- The unit was fire and impact damaged
- Many bulbs and light covers were missing or destroyed

Unknown (Equipment #60)

- The component was fire and impact damaged.
- The component remained attached to a portion of structure. Near to the component was a T shaped pull handle labeled "Turn and Pull".

Compass Face Plate (Equipment #61)

- The face plate was bent.
- The face plate was not attached to its respective unit.

Triple Tachometer Indicator Face Plate (Equipment #62)

- The face plate was bent.
- The face plate was not attached to its respective unit.

Caution/Advisory Annunciator Panel (Equipment #63)

- The unit was impact and fire damaged
- Many bulbs and light covers were missing or destroyed

Course Selector Indicator (Equipment #64)

- Manufacturer: Aeronetics
- PN: 520-51?? (label partially damaged)
- The unit was impact damaged
- The needles were bent and free to move
- The "GS" red flag was shown in the window

Directional Gyro (Equipment #65)

- Manufacturer: Sperry
- Model C-14A Gyro Synchronizer
- PN of synchronizer: 4019190-? (label damaged)
- SN: 81014229
- Modifications: None
- The upper and lower portions of the gyro were still attached to the main housing

Vertical Gyro (Equipment #66)

- The unit was fire and impact damaged

- A data plate was not identified
- 3761 hours was indicated

#### Vertical Gyro (Equipment #67)

- The unit was fire and impact damaged
- A data plate was not identified
- 714 hours was indicated (Viewing window was damaged)

#### Attitude Indicator (Equipment #68)

- The unit was fire and impact damaged
- A data plate was not identified on the unit

#### Radio Cluster (Equipment #69)

- There were 4 Collins radios still installed in a radio rack
- All 4 units were impact and fire damaged.
- Lower left unit front plate indicated it was a DME-42
- Lower right unit front plate indicated it was a VIR-32 Receiver
- The other two front plates were not readable but confirmed by Sikorsky as a second DME and second VIR

#### Miscellaneous Other Items

- A number of miscellaneous items, such as stand-alone circuit cards and electrical components, were found in the wreckage. Pictures of these parts were taken but they were not further documented.