4 *Alignment Troubleshooting*

4.1 AHRS Alignments

NOTE: The software version of the PFD is displayed on the AHRS Initialization box during alignment for S/W Version 530-00177-000 and later.

4.1.1 AHRS Alignment Unable to Complete Due To Motion Sensed

Symptoms

- The AHRS Init box states " UNABLED TO COMPLETE ALIGNMENT MOTION SENSED – STOP AIRCRAFT Alignment Should Resume Within 2 Mins."

Cause

- Aircraft is subjected to continuous moderate yawing action (due to excessive crosswind conditions) during AHRS alignment.
- Aircraft is subjected to continuous substantial rolling or pitching action during AHRS alignment.
- Aircraft is subjected to extended forward motion during AHRS alignment.

Workaround

- None

Corrective Action

- Stop Aircraft as soon as practical and wait for alignment to resume.
- Reposition orientation of aircraft as required, if subjected to substantial rolling or pitching action due to environmental conditions.
- Reposition aircraft as required, to reduce/eliminate any yawing action during AHRS alignment.
- Ensure aircraft is not subjected to forward motion during alignment.

Other Comments

- None

4.1.2 AHRS Alignment Unable to Complete Due To Magnetic Anomaly

Symptoms

- The AHRS Init box states " UNABLED TO COMPLETE ALIGNMENT MAGNETIC ANOMALY IN THE AREA Recommend Moving Aircraft".

Cause

- A significant magnetic disturbance is experienced by wing mounted magnetometer (e.g. right wing parked over ferrous material).
- Communication with the magnetometer in the wing is intermittent.

Workaround

- None

Corrective Action

- Move Aircraft to different location and begin startup operations.
- Ensure right wing is clear of any iron-containing material during AHRS alignment.

Other Comments

- None

4.1.3 AHRS Alignment Unable to Complete Due To Software Fault Experience

Symptoms

- The AHRS Init box states " UNABLE TO COMPLETE ALIGNMENT SOFTWARE FAULT EXPERIENCED Recommend Power Cycle".

Cause
- Most likely cause is PFD software detected a software fault.

Workaround
- None

Corrective Action
- Power Cycle the PFD and begin startup operations.
- If this message displays again then contact Avidyne Technical Support

Other Comments
- None

4.1.4 AHRS Alignment Unable to Complete Due To Attitude Sensor Failure

Symptoms
- The AHRS Init box states " INABLE TO COMPLETE ALIGNMENT ATTITUDE SENSOR FAILURE Recommend One-Time Power Cycle".

Cause
- Most likely cause is an IRU failure.

Workaround
- None

Corrective Action
- Power Cycle the PFD and begin startup operations.
- If this message displays again then contact Avidyne Technical Support

Other Comments
- None

4.1.5 AHRS Alignment Unable to Complete Due To No Comm with Mag

Symptoms
- The AHRS Init box states " UNABLED TO COMPLETE ALIGNMENT NO COMM. WITH MAGNETOMETER".

Cause
- Communication with the magnetometer in the wing is failed.
- Communication with the magnetometer in the wing is intermittent.

Workaround
- None

Corrective Action
- Contact Avidyne Technical Support

Other Comments
- None

4.1.6 Inaccurate Attitude Depiction Following AHRS Alignment

Symptoms
- Immediately following the completion of an AHRS alignment during ground ops, the displayed attitude solution is clearly incorrect (e.g. more than 2° error in displayed pitch or roll).

Cause
- Improper Mag Calibration.
- Failure of an internal component of the AHRS that was not detected by self test.
- The PFD improperly mounted in the instrument panel.

- The aircraft is positioned on an uneven surface.

Workaround
- None

Corrective Action
- Ensure proper calibrations were performed IAW published procedures.
- Perform as-published magnetometer calibration.
- Verify the PFD is correctly mounted in the instrument panel.
- Reposition the aircraft to an even surface.
- If performance of PFD after alignment is still unacceptable, Contact Avidyne Technical Support.

Other Comments
- None

4.1.7 AHRS Initialization Box Never Displayed

Symptoms
- AHRS Initialization Box does not ever get displayed after power is applied to PFD. Display stays covered by Red-Xs.

Cause
- An internal communication failure within the PFD.
- Failure or non-communication with the on-board magnetometer.

Workaround
- None

Corrective Action
- If this is a one-time event, power cycle the PFD and reattempt a proper AHRS alignment. If successful, expect a nominal PFD. If unsuccessful, contact Avidyne Technical Support.
- If this happens on a more frequent basis, contact Avidyne Technical Support.

Other Comments
- None

4.1.8 Inaccurate Heading Depiction Following AHRS Alignment

Symptoms
- Immediately following the completion of an AHRS alignment during ground ops, the displayed heading solution is clearly incorrect (e.g. more than 4° error in displayed heading).
- Heading errors appear to be approximately twice any observed pitch or roll errors.

Cause
- Improper Mag Calibration.
- Magnetic anomalies in the immediate vicinity of the magnetometer (right wing).
- Failure of an internal component of the AHRS that was not detected by self-test.

Workaround
- None

Corrective Action
- Ensure proper calibrations were performed IAW published procedures.
- Perform as-published magnetometer calibration
- If performance of PFD after alignment is still unacceptable, ensure there are no magnetic anomalies in the immediate vicinity by either moving the airplane to a known good location or perform the location suitability test as described in section □.

- If performance of PFD after alignment is still unacceptable, Contact Avidyne Technical Support.

Other Comments

- None