


REV	B	APPLICATION			REVISIONS		
		PRODUCT LINE	REV	DESCRIPTION	DATE	APPROVED	APPROVED
SH	1	IDU-III	A	Initial Release per DCN W5487	9/11/06	R. DuRall	D. Woodhurst
			B	Update per DCN W5656	11/9/06	R. DuRall	D. Woodhurst
DWG. NO.	150-045077						

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF WULFSBERG ELECTRONICS, A CHELTON GROUP COMPANY, NEITHER RECEIPT NOR POSSESSION THEREOF CONFERS ANY RIGHT TO REPRODUCE OR USE, OR DISCLOSE, IN WHOLE OR IN PART, ANY SUCH INFORMATION WITHOUT WRITTEN AUTHORIZATION FROM WULFSBERG ELECTRONICS

		 Wulfsberg Electronics <i>A Chelton Group Company</i>			
APPROVALS	DATE			TITLE:	
DRAWN R. DuRall	9/11/06	SERVICE BULLETIN WSB IDU-III-20 (SOFTWARE APPLICATION VERSION 5.0C)			
CHECKED D. Boston	9/11/06				
PRODUCT MANAGER ----	---				
ENGINEER		SIZE	CAGE CODE	DWG NO.	REV
ISSUED Diana Woodhurst	9/11/06	A	1B7G3	150-045077	B
Typed signatures indicate approval. Handwritten signature approval of this document is on file at Wulfsberg Electronics, Prescott, Arizona.		SCALE: NONE		DO NOT SCALE DRAWING	



Wulfsberg Electronics
A Chelton Group Company

SERVICE BULLETIN

EQUIPMENT: IDU-III

DATE: November 9, 2006

BULLETIN NUMBER: WSB IDU-III-20 Revision B

MANDATORY SERVICE BULLETIN

EFFECTIVITY

This Service Bulletin is **mandatory** for the following equipment operating with Class-A TAWS under STCs SA02203AK, SA02220AK, SA02232AK, and SA02254AK.

This Service Bulletin is **advisable** for the following equipment operating with Class-B or Class-C TAWS/HTAWS under FAA STCs SA02203AK, SA02220AK, SA02232AK, SA02254AK, SR02209AK, SR02230AK, SR02238AK, and TCCA STC SH06-6:

LRU P/N	HDWR Mod	SWID
401-045500-[]	0101	5.0B

REASON

Features and Changes:

1. Revised IDU limits viewer program on Ground Maintenance menu to also edit limits. Eliminates IDU Limits program on desktop/laptop computer.
2. Improve accuracy of air data calculations near Mach range. Improves Mmo overspeed warnings.
3. Implement smoothing of Glidepath and GPS track to improve autopilot pitch-steering behavior.
4. Inhibit menus displayed on PFD when unusual attitude mode is activated.
5. Improve calculations of along flight path distance.
6. Improve validity of ARINC429 transmissions by changing "out of range" values to "no computed data".
7. Smooth Radar Altimeter reading to 10 foot increments above 100 feet AGL.
8. Remove requirement of flight plan to output valid Course Datum in GPS mode.
9. Eliminate potential negative values of ARINC429 BCD labels (Altitude Label 235).

10. Encode seconds into ARINC429 Label 125 (UTC time).
11. Add ten readings of smoothing to Crossbow heading to reduce jittery heading.
12. Add ARINC429 Labels 100 and 101 to support KFC-400 autopilot integration.
13. Correct termination of waypoints to resolve Avidyne FlightMax integration.
14. Reset starting altitude to match manual target altitude to eliminate unexpected altitude transition to VNAV mode with HITS boxes.
15. Correct altimeter initialization with milibars selected.
16. Add smoothing to altitude capture predictor symbol.
17. Correct SYNC setting for Heading bug, Target Altitude bug, and Minimum Altitude bug.
18. Correct action for ENTER and EXIT functions in the Faults Menu.
19. Add pitch-based smoothing to improve performance of Flight Path Marker.
20. Modified HTAWS FLTA inhibit requirement so FLTA is automatically inhibited in both normal and low-altitude modes when below 50KIAS.
21. Disable roll-rate limiter function unless GPS roll-steer mode is active.
22. Eliminate overspeed warning deadband to comply with FARs during 1 knot/second acceleration through Vne/Vmo.
23. Add 5 second debounce to Radar Altimeter warning to eliminate nuisance Radar Altimeter warnings.
24. Eliminate overspeed and minimum altitude debounce periods.
25. Improve magnetic variation calculations in GPS failure modes.
26. Improve low groundspeed performance to prevent intercept oscillations below 150 knots.
27. Correct airspace overflow error in European navigation database.
28. Add Com port display in Ground Maintenance mode.
29. Correct GPWS Mode 4 logic to use AGL altitude instead of MSL altitude.
30. Modified airspeed tape to display at 20 KIAS for Rotorcraft TAWS.
31. Disable automatic map scaling changes and reversion to map mode due to TAWS callout when TAWS Inhibit switch is activated.

DESCRIPTION

This modification updates the application software to 5.0C.

COMPLIANCE

Required for all installations listed under the Effectivity section of this Service Bulletin.

WARRANTY INFORMATION

Units still in the warranty period may request this modification under the terms of the warranty agreement. Inquiries should be directed to "Customer Support" at the address listed below:

Chelton Flight Systems
1109 Main Street, Suite 560
Boise, ID 83702
Phone: (208) 389-9959
Fax: (208) 389-9961

Warranty claims will not be reimbursed unless a copy of the completed log book entry including all IDU Serial Numbers is supplied with the warranty claim.

APPROVAL

This Service Bulletin has been reviewed and approved by the FAA.

This modification does not affect the original approval.

MANPOWER

1.0 Man-hours per aircraft.

REFERENCES

System Installation Instructions, 150-045264 and 150-045057.

MATERIAL INFORMATION

The parts required to modify an IDU-III in accordance with this Service Bulletin may be obtained by contacting Chelton Flight Systems Sales Department at (208) 389-9959.

Items 1 and 2 may be contained in the 5.0C Service Bulletin Kit, P/N SW050CKIT.

Item 1 may be purchased from any office supply or other store selling computer and digital camera accessories.

Items 3 and 4 are contained in the 5.0C Service Bulletin Kit, P/N SW050CKIT.

The full version of the Pilot's Guide may be downloaded from the Chelton Flight Systems web site at www.cheltonfs.com by selecting the "DATABASES" menu item then download each section.

Items 2 and 4 may also be downloaded from the Chelton Flight Systems web site at www.cheltonfs.com by selecting "DEALER LOGIN" menu item and logging into the Dealers web site.

PARTS REQUIRED

<u>ITEM</u>	<u>QTY</u>	<u>U/M</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
1	1	Ea	N/A	SmartMedia card
2	1	Ea	320-145239-050C	Software Load Module, Update Image 5.0C
3	1	Ea	150-045240 Rev J	Pilot's Operating Handbook Insert, EFIS SW Ver 5.0C
4	1	Ea	Various	Instructions for Continued Airworthiness

CAUTION

ANY DISASSEMBLY/ASSEMBLY OF THIS UNIT MUST BE DONE AT A STATIC SAFE WORKSTATION. REMOVED MODULES SHOULD BE PLACED IN ANTISTATIC BAGS WHEN NOT INSTALLED IN THE UNIT.

IDU MODIFICATION PROCEDURE

***NOTE:** Steps 1 through 13 listed below describe the update process for one IDU. These steps must be performed for all IDU(s) in the aircraft.*

APPLICATION SOFTWARE UPDATE (PFD AND MFD)

1. Apply external power to the aircraft.
2. Ensure power is removed from the IDU(s).
3. Insert the SmartMedia card (Item 1) from the Service Bulletin Kit into the PFD or single IDU.
4. Apply power to the IDU(s).
5. Verify the PFD or single IDU displays the Ground Maintenance menu (see Figure 1).

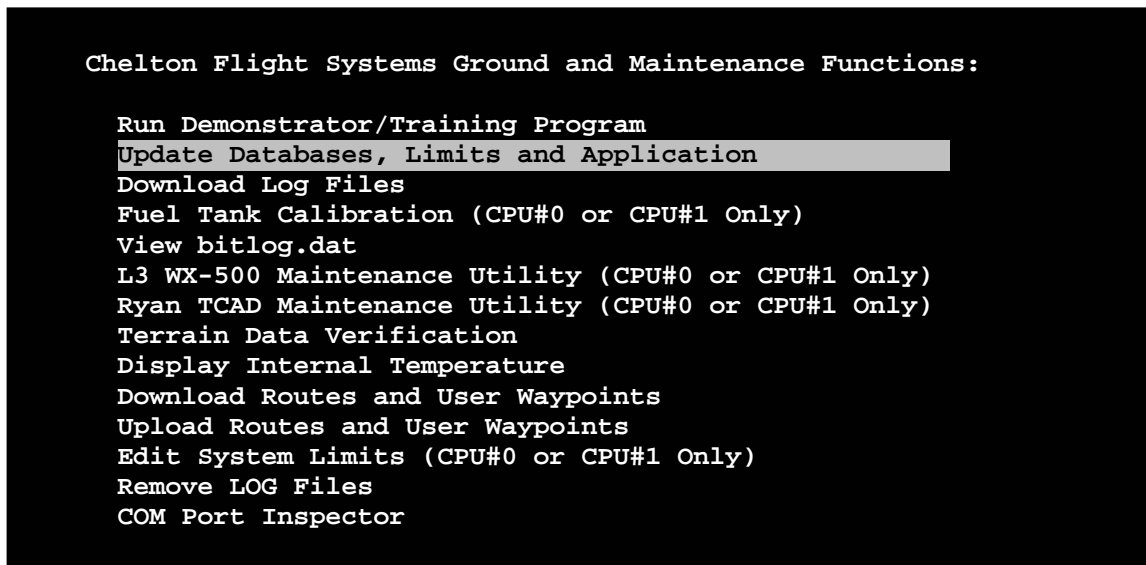


Figure 1 Ground Maintenance Menu

6. Rotate the right-hand encoder until the “Update Databases, Limits and Application” is highlighted then press in the right-hand encoder.
7. Verify the application software has been downloaded (See Figure 2 for details). This should take approximately 15 seconds to download.

```
Inflating: d:/UTIL/257928.GM
Inflating: d:/UTIL/258184.GM
Inflating: d:/UTIL/258440.GM
Inflating: d:/UTIL/BAT_MENU.EXE
Inflating: d:/UTIL/DOS4GW.EXE
Inflating: d:/UTIL/FUELVIEW.EXE
Inflating: d:/UTIL/GMIDX.EXE
Inflating: d:/UTIL/IDU_FCAL.EXE
Inflating: d:/UTIL/LIM_DSPL.EXE
Inflating: d:/UTIL/PUTLIMIT.EXE
Inflating: d:/UTIL/RTE_CHK.EXE
Inflating: d:/UTIL/S100A030.LOG
Inflating: d:/UTIL/SIMULATE.EXE
Inflating: d:/UTIL/TCADTEST.EXE
Inflating: d:/UTIL/TEMP.EXE
Inflating: d:/UTIL/TERR_BIT.EXE
Inflating: d:/UTIL/TPI.TXT
Inflating: d:/UTIL/USNEXRAD.DAT
Inflating: d:/UTIL/WX_TEST.EXE
Inflating: d:/UTIL/XBOW_CAL.EXE
    1 file(s) copied
    1 file(s) copied
    1 file(s) copied
Press any key to continue . . .
```

Figure 2 Typical IDU display when update is completed

8. Press any button or right-hand encoder on the unit when the “Press any key to continue . . .” is displayed.
9. Ensure the Ground Maintenance menu is displayed after the unit performs a scan of both internal drives.
10. Repeat steps 6 thru 9 a second time to ensure the update procedure has been completed.
11. Remove power from the IDU(s).
12. Remove the SmartMedia card.
13. Repeat steps 1 thru 12 for all remaining IDU(s) in the aircraft.

TESTING PROCEDURES

NOTE: Before proceeding with this section, ensure all IDU(s) in the aircraft have been updated per the Application Software Update (PFD and MFD) section.

1. Apply power to the EFIS system and verify each IDU completes initialization and testing.
2. Verify the information listed below is displayed on each modified IDU status page (See Figure 3):
 - a. "Rev 5.0C-10"
 - b. "SOFTWARE OK"

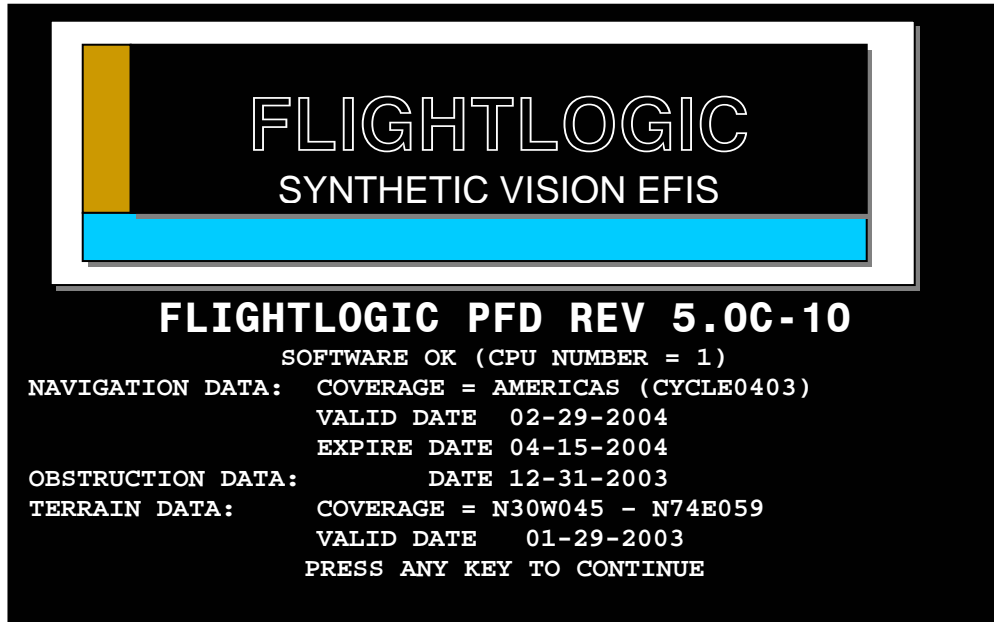


Figure 3 Typical EFIS Status Page

NOTE: PFD/MFD and CPU Number will depend on the position of the IDU.

3. Press any button or the right-hand encoder on each IDU and verify the EFIS system starts normal operation.

NOTE: If any IDU does not complete initialization and/or self-test, it may be necessary to repeat the modification process to reload the EFIS software. If the IDU does not operate properly after two load processes, contact Chelton Flight Systems Technical Support at (208) 389-9959.

DOCUMENT PROCEDURES

1. Remove and replace Instructions for Continued Airworthiness (Item 4) in the aircraft log books.
2. Add insert pages (Item 3) to Pilots Guide (Doc. 150-045240).
3. Document 5.0C update in Aircraft Logbook.
4. Submit a copy of the Aircraft Logbook with sign-off to Chelton Flight Systems along with the warranty claim.