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AVIONICS • INTERIOR • MAINTENANCE • PAINT REFINISHING

SERVICE MANUAL & ICA
for the
AMPHIBIAN GEAR ADVISORY SYSTEM MkII
and
LASER GEAR ADVISORY SYSTEM

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Revision D

LOG OF REVISIONS

REVISION LEVEL	PAGES AFFECTED	DESCRIPTION	FAA APPROVAL	DATE
A	ALL	INITIAL RELEASE		7/14/2015
B	8,9	Changed 60 sec to 10 secs. Revised weight of laser Removed Limitations chapter.		3/14/2016
C	1,2,9,13	Added ULS Laser weight. Added battery removal note.		1/11/17
D	1,2,3,10, 11,12 16	Added volume control information. Added Laser disconnect information. Removed "Page Revision" page. Removed "New Customer Info" page. Noted Controller Rev H no battery.		01/28/21

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CHAPTER 1

INTRODUCTION AND

GENERAL INFORMATION

1.0 INTRODUCTION

This manual is provided for the owners of an Amphibious Gear Advisory System installed on amphibious float equipped aircraft. It has two main priorities:

To inform owners of the level and amount of servicing required to properly maintain their airplane, and to provide technical data and servicing as specified to maintenance professionals charged with servicing airplanes modified by this STC.

The service products referred to throughout this manual are described by their trade names and may be purchased from Wipaire Parts.

Department:

We, at Wipaire, welcome your purchase and look forward to years of satisfying exchanges with you. Our customer service department, WipCaire, is available for your questions 24 hours a day, 7 days a week, where-ever you are in the world.

Parts Sales and Technical Support Dept:

Wipaire, Inc.
1700 Henry Avenue – Fleming Field
South St. Paul, MN 55075
Telephone: (651) 306-02.359
Fax: (651)-306-0666
Website: www.wipaire.com
Email: CustomerService@wipaire.com

When a part of this installation is significantly changed or an additional inspection is recommended or required, often a service letter and/or kit is issued. If a warranty is issued, most commonly it is for an 18 month time period, so it is crucial to check for service letters specific to your float model at each periodic inspection to be eligible.

Service Manuals and the installation documents included are also revised periodically and also to be kept updated. Service letters, Service Kits and Service Manuals are available on our web site at no charge, www.wipaire.com.

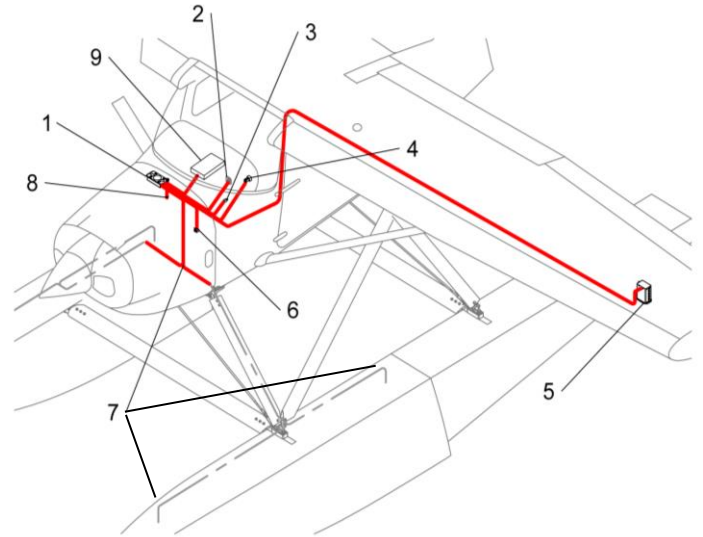
NOTE:

IT IS CRITICAL TO CHECK FOR MANUAL UPDATES EACH TIME AN INSPECTION IS EXECUTED.

1.1 GENERAL INFORMATION ON GEAR ADVISORY INSTALLATION

The Amphibian Landing Gear Position Advisory System provides the pilot with supplementary gear position information not normally found in amphibious aircraft. The system is available in three versions:

1. The original system, referred to in this document as the AGAS.
2. The 2016 upgraded system, referred to as the AGAS MKII.
 - a) This system provides the same base functionality as the AGAS, but employs modernized hardware components.
 - b) Additional functionality in the form of a 10 second alert after takeoff if the landing gear has not been retracted.
3. The LGAS system, which uses the same hardware components as the AGAS MKII.,
 - a) Adds a wing mounted laser array to determine if the aircraft is directly over land or water.
 - b) If below 400' agl, the LGAS compares the surface directly below aircraft with the gear position switches to determine if the gear is properly configured, and will only issue an alert if the gear position and laser indications are not in agreement with each other.
 - c) The LGAS also provides an alert if the gear has not been retracted approximately 10 seconds after takeoff.



- | | |
|-------------------------------------|-----------------------------------|
| 1. LGAS Controller | 6. Pitot A/S Switch |
| 2. IN from gear selector assembly | 7. Landing Gear Position Switches |
| 3. IN from 2 amp CB | 8. Ground |
| 4. Illuminated Switch (LGAS only) | 9. Audio Out |
| 5. Laser Array Assembly (LGAS only) | |

(typical single engine, high wing installation shown)

1.2 REFERENCES

A list of important references is given below. In addition to this document, these will aid in the maintenance and continued airworthiness of this Amphibian Gear Advisory System and Laser Gear Advisory System installation.

1. POHSA39CH – Aircraft Flight Manual Supplement for Amphibian Landing Gear Advisory System.

1.3 SPECIFICATIONS

System specifications are shown below.

AGAS Controller:

Wt: 0.55 lbs. (Arm to be determined upon installation).

AGAS MKII/ LGAS Controller:

Wt: 0.45 lbs. (Arm to be determined upon installation).

LGAS ULS Laser Array:

(AGASMKII/LGASv-01 thru v-02.3):

Weight: 1.65 lbs. (Arm to be determined upon installation).

LGAS S200 Laser Array:

(AGAS MKII/LGASv-03 only):

Weight: .30 lbs. (Arm to be determined upon installation).

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CHAPTER 2
SERVICING AND MAINTENANCE

2.0 SERVICING AND MAINTENANCE

The AGAS, AGAS MkII / LGAS system is maintenance free and requires little servicing, once installed in the aircraft according to the approved documentation.

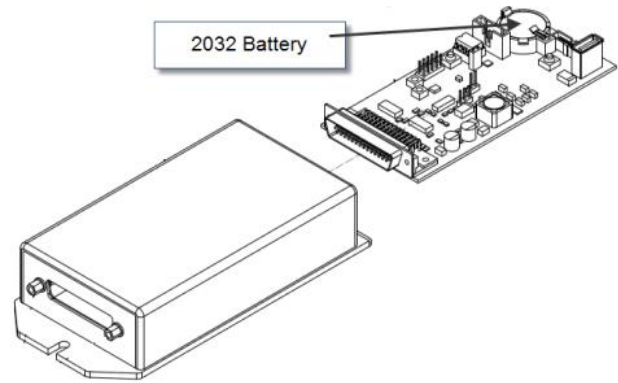
2.1 CHANGING BATTERY

NOTE: Applicable to AGAS MKII/LGAS Controllers revisions A thru G only. Battery use discontinued with rev. H and above.

The AGAS MKII and LGAS (shown) computers maintain date and time information during periods of non-operation by means of a single 2032 coin battery installed on the printed circuit board. The battery has a minimum life of one year with reserves, although should be changed at annual inspection. If the battery should fall below minimum acceptable voltage, the gear advisory power up test will announce “CHANGE GEAR ADVISORY BATTERY”, instead of the typical “GEAR ADVISORY BATTERY OK” announcement. The system may continue to function normally for several days after the battery change announcement but should be changed as soon as practicable.

To replace the gear advisory battery:

1. Locate the Gear Advisory Controller, generally under the co-pilot’s side of instrument panel.
2. Loosen the thumbscrews on each side of 44-pin connector and disconnect from Controller.



3. Loosen the single knurled nut retaining the Controller in the Mounting Tray and remove the Controller from the Tray.
4. With the Controller on a work bench remove the two screw-lock standoffs retaining the 44-pin connector on the end of the Controller enclosure. Remove the four machine screws securing the end cap, from the opposite end of the enclosure.
5. While observing standard static grounding procedures, remove the circuit board from the enclosure by pressing on the 44-pin connector, being very careful so as not to bend any of the pins. The end of the circuit board will sometimes dislodge the end cap and allow the board to slide out of the enclosure. If not, a small stiff wire or screwdriver in the upper most holes may be used to lift the cover off.
6. The board is equipped with a small capacitor that will maintain the internal clock for 60-90 seconds during battery replacement. Carefully remove and replace the 2032 button cell, observing proper polarity of the battery.

NOTE: To avoid exceeding capacitor time, have the replacement battery unpackaged and standing by before removing old battery.

7. Re-assemble and re-install the gear advisory Controller, being careful to re-install the 44-pin connector gasket and end cap gaskets.

2.2 ADJUSTING AUDIO VOLUME

To adjust audio volume of the gear advisory system:

AGAS:

1. Adjust volume on side of Controller.

AGAS MKII/LGAS:

Perform steps 1 -5 above.

2. With enclosure removed, carefully reattach board to 44-pin connector from airplane. To avoid damage, do NOT touch any of the components on the board.
3. Locate the R1 potentiometer near edge of circuit board (as shown at right) and using a small screwdriver, rotate switch to find center of its range.

Note: Power will be applied to board so ensure board is separated from other metallic or electrical sources.

4. Turn power ON to audio, make volume adjustments while system is annunciating.

8. Functionally test the gear advisory battery after reinstallation by applying power to the system (including avionics bus) and confirming the “GEAR ADVISORY BATTERY OK” audio message.
9. Make appropriate logbook entries for the service performed.

5. Press annunciator switch 2-3 seconds to activate system check annunciation to assist adjustments.

6. Re-assemble and re-install the gear advisory Controller, being careful to re-install the 44-pin connector gasket and end cap gaskets.



2.3 DISCONNECTING LASER

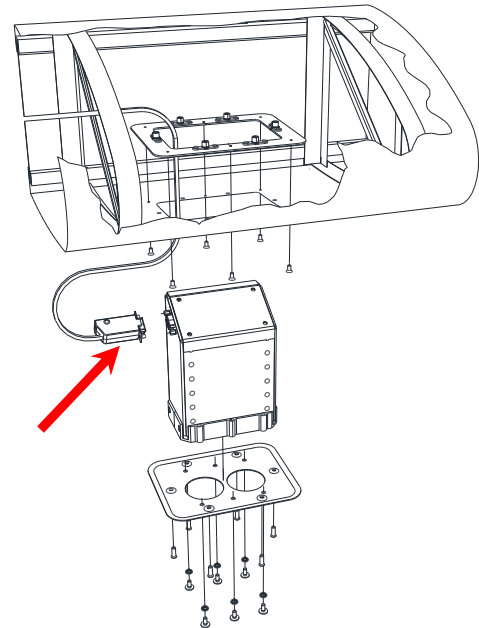
Laser may be disconnected at any time without loss of AGAS MKII function. The Laser Assembly is not a required component for float operations.

NOTE

System reverts to AGAS MKII operation with Laser disconnected from Controller. See POHSA39CH for description of operation.

To disconnect Laser Assembly:

1. Remove Laser from its stowed location, normally located in wing.
2. Disconnect 9-pin connector from Laser Assembly and stow Wing Harness using plastic cable-ties. Ensure re-stowed Harness will not interfere with control cables, linkages.
3. Replace Laser assembly in wing.
4. "Laser Inoperable" must be placarded near gear handle assembly.
5. Make appropriate logbook entries for the service performed.



CHAPTER 3
RECOMMENDED PROCESSES, PRODUCTS
AND INSPECTION CHECKLIST

3.0 SERVICING INSTRUCTIONS

No specific servicing required.

3.1 MAINTENANCE CHECKLIST

SERVICE MANUAL & ICA
AGAS MkII, LGAS INSTALLATION

INSTRUCTIONS / PROCEDURES		HOURLY LIMITS					MECHANIC	INSP
		25	50	100	200	Annual		
	General	Details						
Gear Advisory System	Placards	Check installed placards against the AFM/POH Supplement Section 2, and installation drawings.				x		
Controller	Inspect security	Check for tight fit. Must not be loose or vibrating.		x		x		
Controller Rev. A thru G Rev. H and above	Change Battery	Replace 2032 battery. Not Applicable.				x		
Laser Assembly (LGAS only)	Inspect security	Check retaining screws. Check Wing Harness connection.		x		x		
Wiring Harnesses	Inspect	Check for security of 44-pin connector to Controller.		x		x		

END