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SERVICE MANUAL & ICA FOR THE AMPHIBIAN GEAR ADVISORY SYSTEM & LASER GEAR ADVISORY SYSTEM

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Revision: J

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<u>LOG OF REVISIONS</u>			
REV	PAGES	DESCRIPTION	DATE
A	All	Initial Release.	7/14/2015
B	8, 9	Changed 60 secs 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.	1/11/2017
D	1-3, 10-12, 16	Added volume control information. Added Laser disconnect information. Removed "Page Revision" page. Removed "New Customer Info" page. Noted Controller Rev H no battery.	1/28/2021
E	7, 10	Pg 7. removed LGAS S200 Laser Array; pg.10 Updated note for controller battery.	2/2/2023
F	All	Updated format, added note about WLGAS-24-01, updated multiple sections, added new sections, added trouble shooting guide.	3/20/2023
G	22	Changed 1000 hours to 5000 hours for 2-Amp Circuit Breaker in 3.1 Maintenance Checklist.	5/15/2023
H	20	Added section 2.5 Pushbutton Switch Bulb Replacement (12V Systems Only).	11/29/2023
J	22	Removed Rev H or later information regarding Change Battery in section 3.1 Maintenance Checklist.	12/17/2025

NOTE

This document is a subsequent revision of Doc. No. WLGAS-24-01.

NOTE

View most current revision of this ICA at www.wipaire.com.

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CHAPTER 1 INTRODUCTION AND GENERAL INFORMATION

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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 name and may be purchased from the Wipaire Parts Department.

To contact Wipaire for technical support or parts sales, call, write or email:

Wipaire, Inc.
Customer Service
1700 Henry Avenue – Fleming Field
South St. Paul, MN 55075
Phone: (651) 306-0459
Fax: (651) 306-0666
Website: www.wipaire.com
Email: CustomerService@wipaire.com

When a part in 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. It is crucial to check for service letters at each periodic inspection to be eligible.

Service Manuals and the installation documents are revised periodically and need to be kept updated. Service letters, Service Kits and Service Manuals are available on our website at www.wipaire.com.

NOTE

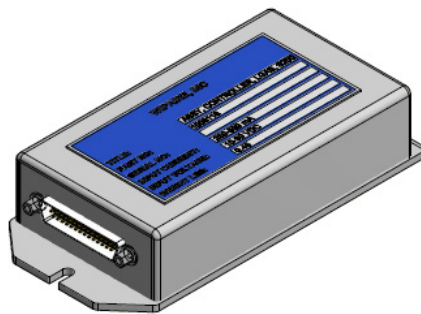
It is critical to check for manual updates each time and inspection is executed.

1.1 GENERAL INFORMATION ON GEAR ADVISORY INSTALLATION

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

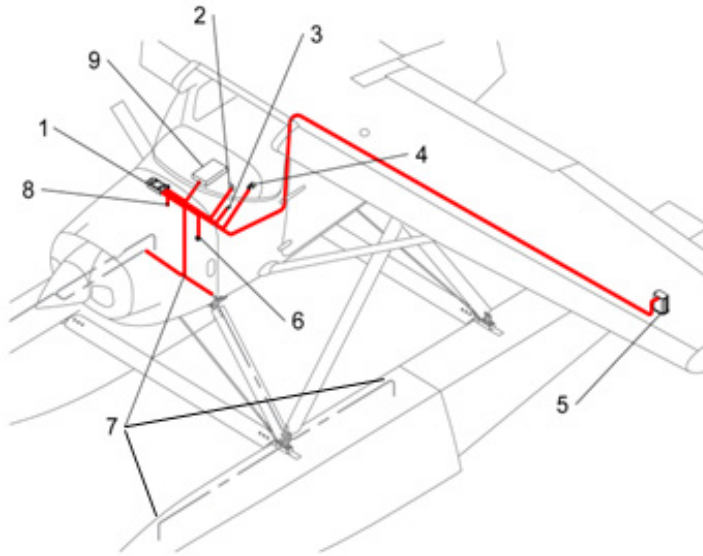


AGAS Controller 9600-1A (Discontinued)



AGAS MKII / LGAS Controller 1006831 or 1006839

1. The original system, referred to in this document as 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 | 4. Illuminated Switch (LGAS only) | 7. Landing Gear Position Switches |
| 2. IN from gear selector assembly | 5. Laser Array Assembly (LGAS only) | 8. Ground |
| 3. IN from 2 amp CB | 6. Pitot A/S Switch | 9. Audio Out |

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

AGAS MKII / LGAS Controller: Weight: 0.45 lbs. (Arm to be determined upon installation).

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

1.4 CONTROLLER AND SOFTWARE REVISIONS

Controller and part number revision level are marked on the identification placard.

Controller P/N	Rev	Functional / Software Version	Eligible for Update	Description
9600-1A	A-J	91.07.03		AGAS Only. Software unchanged throughout revision history.
1006831	A	V1.06*		AGAS Only. Initial Release of alternate Controller.
	B	V1.06*		AGAS Only. Enclosure Update.
	C	v-01	Yes	First laser-approved version.
	D	v-01	Yes	Add Internal Battery to Drawing.
	E	v-02	Yes	Software Update - Additional Laser Assembly Compatibility, Adjust Delays and Thresholds, Add Benchtop Functionality.
	F	v-02.1	Yes	Software Update - Automate Initial Laser Provisioning, Increase Startup Delay.
	G	v-02.2	Yes	Software Update - Increase Laser Pulse Frequency.
	H	v-02.3 ⁺		Remove Internal Battery, Revised Audio.
	J	v-02.3 ⁺		Enclosure Update.
1006839	A	v-04.0		Initial Release, v-02.3 Equivalent Functionality on Alternate Circuit Board (Supply Considerations).

*This software numbering is unrelated to those that follow, which were certified for use with laser.

* Removal of battery and update to audio file did not require changes to processor code, which remained at v-02.2, but documentation refers to these configurations as "LGASv-02.3."

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CHAPTER 2 SERVICING AND MAINTENANCE

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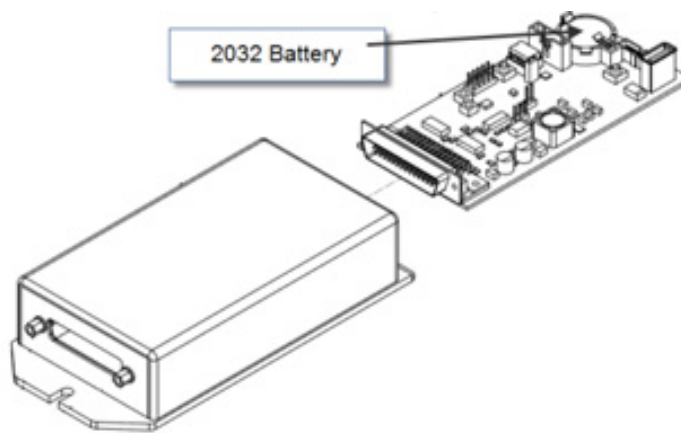
2.0 SERVICING AND MAINTENANCE

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 BATTERY REPLACEMENT

NOTE

Applicable to AGAS MKII/LGAS Controllers revisions A thru G only. Battery may not be found with controllers 1006831 revision H and prior, or controller 1006839 all revision levels due to software upgrade.



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.
 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.

2.2 AUDIO VOLUME ADJUSTMENT

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.
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 AIRSPEED SWITCH ADJUSTMENT

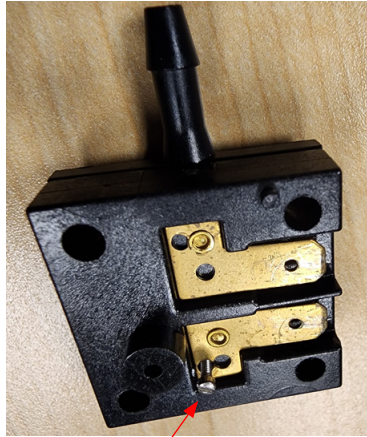


Airspeed Switch

Note: Airspeed switches are not pre-set by Wipaire for a specific airframe prior to installation.

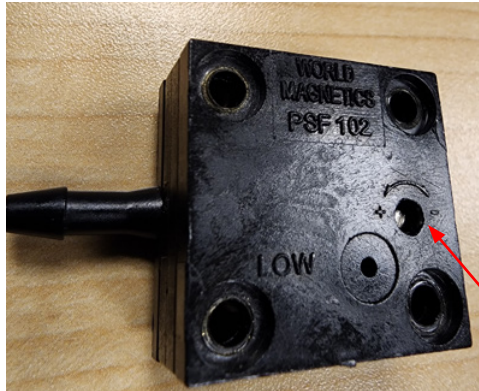
Airspeed threshold setting can be adjusted using a multimeter and pitot-static test box as follows:

1. Set airspeed switch by putting a multimeter set to continuity on the contacts of the switch.
2. Set the airspeed from a pitot static test box to the desired speed. Refer to the installation drawing and/or the Recommended Gear Advisory Speeds chart below for recommended speeds.
3. Once airspeed is set, adjust screw on airspeed switch until the contact closes.



Set screw is adjustable.

4. If switch is being reinstalled to airframe, ensure an air gap between static port and surrounding structure.



Do not cover this hole. This can affect the airspeed reading.

5. Perform a pitot leak check per AC 43.13-1B, chapter 12, section 4.

RECOMMENDED GEAR ADVISORY SPEEDS		
MAKE/MODEL	KTS	MPH
CUB	65	75
HUSKY	65	75
SCOUT	65	75
C-170	75	86
C-172	75	86
C-172XP	75	86
LAKE	75	86
C-175	85	98
C-180	85	98
C-182	85	98
C-185	85	98
C-206	85	98
HELIO	85	98
BEAVER	85	98
REPUBLIC	85	98
GRUMMAN	95	109
MAULE	95	109
KODIAK	95	109
TWIN OTTER	95	109
AIR TRACTOR	95	109
C208/C208B	95	109

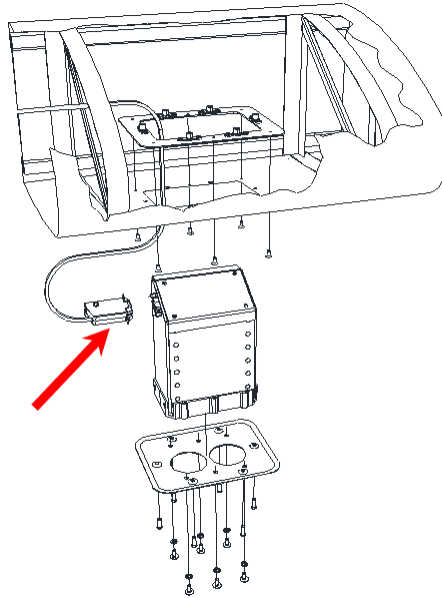
+/- 2 KTS / 2.3MPH

2.4 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.



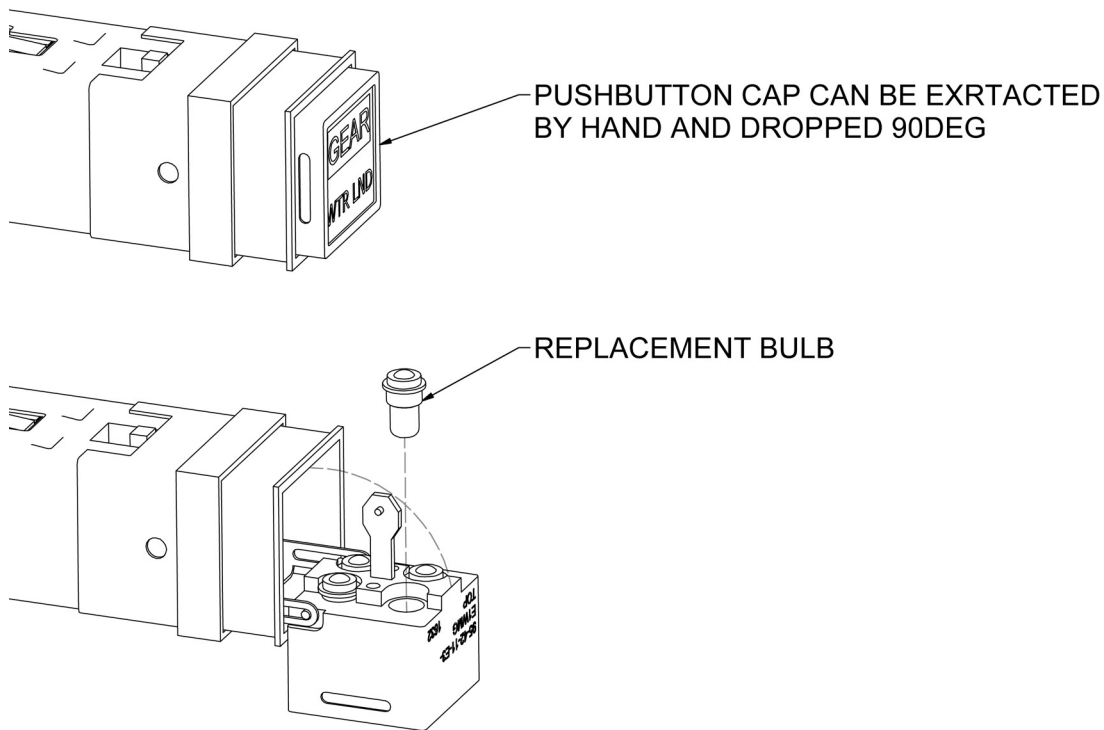
To disconnect Laser Assembly:

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.

2.5 PUSHBUTTON SWITCH BULB REPLACEMENT (12V SYSTEMS ONLY)

NOTE

This section pertains only to 12v LGAS systems. The 24v equivalent pushbutton switch utilizes long-life LEDs which are not replaceable.



To replace bulb (aka lamp):

1. Extract illuminated pushbutton cap by hand using the slots on either side.
2. Once clear of housing, cap can be dropped 90deg for access to bulbs.
3. Remove bulb(s) and replace. Replacement bulbs are available through Wipaire, PN 14-112
4. Reinsert cap into switch housing.

CHAPTER 3 RECOMMENDED PROCESSES, PRODUCTS, AND INSPECTION CHECKLIST

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3.0 SERVICING INSTRUCTIONS

No specific servicing required.

3.1 MAINTENANCE CHECKLIST

INSTRUCTIONS / PROCEDURES			HOURLY LIMITS			MECHANIC	INSP
	General	Details	100	5000	Annual		
Gear Advisory System	Placards	Check installed placards against the AFM/POH Supplement Section 2, and installation drawings.			X		
Controller 9600-1 9600-1A 100831 1006839	Inspect security	Check for tight fit. Must not be loose or vibrating.	X		X		
Controller 1006831 Rev. A - G	Change Battery	Replace 2032 battery. Rev H or later 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		
2-Amp Circuit Breaker	Replace	Remove and replace p/n 7277-2-2 Gear Advisory Circuit Breaker.		X			

3.2 SOFTWARE UPDATES

See table in section 1.4 for available software upgrades. Those marked as "eligible for update" can be advanced to the latest revision of that particular Controller P/N. Contact Wipaire Customer Service for more information.

3.3 SYSTEM TROUBLESHOOTING

See detailed Troubleshooting Guide on next page.

Note: Airspeed switches are not pre-set by Wipaire for a specific airframe prior to installation. See Section 2.3 for adjustment instructions.

AGAS MKII/ LGAS TROUBLESHOOTING GUIDE					
No.	Problem	AGAS	LGAS	Possible Causes	Solutions
1	No audio.	X	X	Failure to wait long enough for system checks to annunciate.	Wait at least 2 minutes to get switch lights and audio check.
		X	X	Ships audio or headset volume set too low.	Adjust headset, speaker volume.
		X	X	Loose or disconnected headset, jacks etc.	Check headset, wiring, jacks etc.
		X	X	Gear Advisory audio connected improperly.	Wire 20 on Main Harness must be connected to unswitched/unmuted audio source.
		X	X	Controller volume set too low.	Adjust cabin audio switch on controller board. Call Wipaire Inc. for details.
2	No lights on push button switch at all.	X	X	Failure to wait long enough for system checks to annunciate.	Wait at least 2 minutes to get switch lights and audio check.
		X	X	Switch unplugged.	Check complete wiring of Illuminated Switch for security and continuity.
		X	X	Pin(s) disconnected or corroded.	Check all pin connections, remove corrosion.
			X	Laser not communicating with Controller (black box).	Recycle 2A Gear Advisory circuit breaker. (Note: This is sometimes necessary after the first time the Controller and Laser are paired.) Check all connections, continuity. (If condition persists, this may require return of Controller and/or Laser to Wipaire for a compatibility check.)
3	LGAS. Red "GEAR" light works, but no blue "WATER" or green "LAND" lights on LGAS illuminated switch.	X		Amber light lens has opaque sticker on back side.	Check by removing amber lens from Switch and peel off sticker.
			X	Laser not communicating with Controller because of start-up issues. Note: System start-up is purposely delayed by 90 seconds by software to ensure aircraft is started and stable before laser attempts to initialize. Electrical surges during engine start will push the laser off-line if voltage drops below 10 volts.	Re-cycle 2 amp circuit breaker. Wait at least 2 minutes to get switch lights and audio check. Note: Pressing the Illuminated Switch to elicit the manual system check will only light the red Gear light. Water and Land lights will not come on during this test. This is normal.
			X	Illuminated Switch may be mis-pinned.	Contact Wipaire, Inc., for electrical schematic for aid in performing continuity checks on harness. Re-pin if necessary. Schematic, Wiring and Interconnect, LGAS (1008950).

AGAS MKII/ LGAS TROUBLESHOOTING GUIDE				
No.	Problem	AGAS	LGAS	Possible Causes
4	LGAS. Illuminated switch starts with "WATER" light on briefly (while on land), then goes out.		X	Controller is looking for, but not seeing the laser assembly. Note: Laser will go off-line anytime the voltage goes below 10 VDC.
5	LGAS. Gear light on, but no water/land lights when switch pressed for manual test.		X	Illuminated Switch may be mis-pinned.
6	AGAS. Amber push-button switch too dim or too bright.	X		This is normal above 400' agl and greater than the airspeed threshold.
7	LGAS. Illuminated push-button switch to dim or too bright.		X	Bulb in amber push button switch is incorrect.
8	Neither audio system alerts or lights on push button switch. No response.	X	X	Incorrect Illuminated Switch Assembly is installed.
		X	X	Not waiting long enough after master switch ON for system checks to annunciate.
		X	X	2A Gear Advisory circuit breaker pulled or popped.
		X	X	Power and/or ground disconnected.
		X	X	Circuit Breaker malfunctioning.
			X	Controller Assembly malfunctioning. Note: Although this would seem a likely culprit for many problems, its actually extremely rare that there is issue with the Controller or software.
				Check continuity of harnesses out to laser. Check voltage going out to laser. Disconnect harness at laser. With power to controller on, check for battery voltage at pin 2 on Wing Wire Harness. If voltage low, isolate problem by working way in towards controller by removing successive harness sections. Check controller voltage out at pin 5. Replace faulty wire harnesses.
				Contact Wipaire Inc for electrical schematic for aid in performing checks on harness. Re-pin if necessary. Schematic, Wiring and Interconnect, LGAS (1008950).
				No action required.
				Replace bulb. For 14 vdc aircraft use: Wipaire PN 330, Light Bulb 12v For 28 vdc aircraft use: Wipaire PN 327, Light Bulb 24v
				Replace Illuminated Switch Assembly. For 14 vdc aircraft use: Wipaire PN 1009862, Wire Harness, Indicator Switch, 12VDC. For 28 vdc aircraft use: Wipaire PN 1008204, Wire Harness, Indicator Switch, 24VDC.
				Wait at least 2 minutes for push button switch to illuminate and audio systems check to annunciate.
				Check 2A breaker.
				Check pin 1 power lead connected to 2A CB. Check pin 2 proper ground connection to appropriate location.
				Replace circuit breaker. (Wipaire P/N 7277-2-2. Circuit Breaker, 2 Amp.)
				Contact Wipaire. May require return of Controller for testing or replacement, though this is usually a last resort option after all other avenues have been expended.

AGAS MKII/ LGAS TROUBLESHOOTING GUIDE					
No.	Problem	AGAS	LGAS	Possible Causes	Solutions
9	Check gear alert on most/every landing.				
	If landing gear is in correct position and gear position lights are correct...	X	X	Controller not getting appropriate gear position input from handle assembly.	Problem between gear handle assembly and Gear Advisory Controller. Check wiring from gear indicator lights back to Controller for pin security and corrosion. Clean pins.
	If landing gear is in correct position and gear position lights are NOT correct...	X	X	Gear position bulb broken, burnt out.	Replace bulb. (Gear Advisory Controller gets gear position information from the gear lights not the gear switches).
		X	X	Magnetic gear position switch in float malfunctioning or disconnected.	Check gear position switch and/or continuity to handle assy.
Note: As per the manual, the alerts "Check Gear" and "Check Gear Position" have different meanings and occur only in specific modes. "Check Gear Position" is used for all such scenarios in later revisions. See POHSA39CH for alert descriptions.					
10	"CHECK GEAR POSITION" alerting on ground at little or no airspeed.	X	X	A/S Switch is set all the way to closed.	Switch set too low. Put aircraft on pitot check system and adjust A/S Switch to value referenced on installation drawing and/or section 2.3 of Service Manual.
11	No "CHECK GEAR POSITION."	X	X	Have not reached threshold A/S in flight with gear down.	Accelerate through threshold A/S (with gear down).
		X	X	A/S Switch set incorrectly.	Reset using pitot static ground check device. Refer to installation drawing and/or section 2.3 of Service Manual.
		X	X	Aircraft was too high by the time airspeed switch closed.	Prior to Controller PN 1006831 Rev F, the "Check Gear Position" alert would be silenced after 400' AGL. Check data plate on Controller for revision info. Upgrade to latest revision.
		X	X	A/S Switch static port is obstructed.	Examine installation of A/S Switch. Static port may be fastened tight against aircraft structure or otherwise obstructed.
		X	X	A/S Switch broken, not responding properly.	To determine if A/S Switch is operable: 1. Remove leads from AS Switch and have co-pilot hold apart during take-off and climb-out. 2. At around the threshold airspeed, touch and hold contacts together and wait for "Check Gear Position" alert. 3. Contact Wipaire, Inc., for replacement switch as needed.

SERVICE MANUAL & ICA
AMPHIBIAN GEAR ADVISORY SYSTEM & LASER GEAR ADVISORY SYSTEM

AGAS MKII/ LGAS TROUBLESHOOTING GUIDE					
No.	Problem	AGAS	LGAS	Possible Causes	Solutions
12	"CHECK GEAR POSITION" annunciating too early/late.	X	X	A/S Switch set incorrectly.	Reset using pitot static ground check device.
		X	X	A/S Switch static port is obstructed.	Examine installation of A/S Switch. Static port may be fastened tight against aircraft structure or otherwise obstructed.
		X	X	A/S Switch broken, not responding properly.	Replace airspeed switch.
13	"CHECK GEAR" annunciates passing through/over clouds.		X	Actual airspeed is too low. With the A/S switch open, the laser will be active. The laser may recognize the density of the cloud as being LAND. While inside the cloud the system will interpret that the aircraft is less than 50'. With gear up the Controller will elicit an alert.	Ensure airspeed is above the threshold airspeed prior to entering or flying low over clouds or fog.
			X	Airspeed (Pitot) Switch is set too high. Same explanation as above.	Ensure Threshold Airspeed is set correctly on Pitot Switch and penetrate clouds only above the threshold airspeed.
			X	Controller software is prior to Revision E. Early revisions only required input from laser for altitude information. Later revisions require input from A/S Switch to activate laser.	Check Controller data plate for revision level. Update to latest revision. Contact Wipaire Inc.
14	"CHECK GEAR" annunciates at <50' AGL with gear down over runway.		X	Gear Advisory System may have detected an asymmetric gear condition.	Do immediate go around and assess the situation. Observe gear light function and assess actual gear position. Check magnetic landing gear switches in floats. Check continuity from handle Assy to switches. Check landing gear position indicator bulbs on handle Assy.
			X	Controller may be interpreting the runway as a water source if Laser sees it as very dark (new asphalt, tire streaks, etc.) very wet or both.	Apart from choosing another landing area, this is a peculiarity with the system which there is no fix for.
15	"CHECK GEAR" annunciates at <50' AGL with gear up over water.		X	Gear Advisory System may have detected an asymmetric gear condition.	Do immediate go around and access the situation. Check symmetry of landing gear. Check magnetic landing gear switches in floats. Check continuity from handle Assy to switches. Check landing gear position indicator bulbs on handle Assy.
			X	Water surface rough, weedy, muddy, wind-streaks, white-caps, assorted debris. Etc. These type of surfaces can provide very strong "returns" for Laser, causing Controller to interpret as terrain .	It is important for the operator to be mindful of the surface below and to anticipate misleading laser returns. No system adjustment required.

AGAS MKII/ LGAS TROUBLESHOOTING GUIDE					
No.	Problem	AGAS	LGAS	Possible Causes	Solutions
16	No "CHECK GEAR" annunciates at <50' AGL with gear down over water.	X	X	Aircraft airspeed is above pre-set threshold or altitude higher than 50' agl. Laser is off-line, disconnected or not installed and system will be in AGAS MKII mode. AGAS does not require altitude inputs. Water surface rough, weedy, muddy, wind-streaks, white-caps, assorted debris, etc. These types of surfaces can provide very strong "returns" for Laser, causing Controller to interpret as terrain. Aircraft airspeed is above pre-set threshold. Or...	Airspeed must be below threshold A/S and altitude must be below 50' above surface as Laser reads it. Alert annunciations require both parameters to be met. Check Illuminated Switch to confirm Laser is off-line. WATER/LAND will not be lit. If less than 400' and below A/S threshold, It is important for the operator to be mindful of the surface below and to anticipate misleading laser returns. No system adjustment required.
17	No "CHECK GEAR" annunciates at <50' AGL with gear up over runway.	X	X	Aircraft altitude is actually higher than 50' agl. (Alert annunciations require BOTH airspeed and altitude parameters to be met.) Laser is off-line, disconnected or not installed and system will be in AGAS MKII mode. Airspeed on climbout has not accelerated through threshold airspeed. While still slow and maneuvering on climbout, laser may not be getting a strong enough return to determine distance, depending on conditions. A/S Switch static port is obstructed. Airspeed Switch may be set too high or stuck in open position. Aircraft A/S too high.	Airspeed must be below threshold A/S. Aircraft must be at or below 50' as the laser reads it to get alert. Note: Because of installed "12' off-set", actual altitude of laser itself will be about 62' agl. Check Illuminated Switch to confirm Laser is off-line. WATER/LAND will not be lit. (System cannot sense altitude without functioning laser.) Light may go out after acceleration. Light may go out after acceleration. Examine installation of A/S Switch. Static port may be fastened tight against aircraft structure or otherwise obstructed. Put aircraft on pitot/static test device and reset A/S Switch. Reduce A/S on approach to less than threshold A/S as referenced in POHSA39CH. Check Amber Gear Advisory push button switch for illumination.
18	"WATER/ LAND" light stays on after climbing thru 400' AGL.	X	X	If Amber Gear Advisory switch is blinking, check the headset or speaker volume. Note: Amber light blinking implies that the Controller is delivering the gear position alert. Aircraft may have not accelerated above threshold airspeed after last take-off. System is still in "Take-off State," in which gear position alerts cannot be elicited.	Set headset and speaker volume to preference. Aircraft must always accelerate through threshold A/S after take-off prior to the next approach to reset gear advisory alerts.

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No.	Problem	AGAS	LGAS	Possible Causes
				Solutions
		X		Reduce A/S on approach to less than threshold A/S as referenced in POHSA39CH. Perform check on A/S Switch to ensure proper airspeed is set.
20	AGAS. "GEAR UP FOR WATER LANDING" not annunciated.	X		Set headset and speaker volume to preference. Push the amber switch for system check annunciation. If none, lead may have come off of audio panel output.
		X		Aircraft must always accelerate through threshold A/S after take-off prior to the next approach to reset gear advisory alerts.