

Document Number: 000PMAN0002

Aircraft Serial Number: _____



STC Number:

SA00560SE
SA00701SE
SA2622NM
SA01129SE
SA4005NM
ST00717SE
ST00733SE
SH3319NM

63354 POWELL BUTTE ROAD
BEND, OR 97701
800- 547-2558

**Pulselite® Instructions for Continued Airworthiness
STC Number SA00560SE, SA00701SE, SA01129SE, SA2622NM,
SA4005NM, ST00717SE, ST00733SE and SH3319NM**

NOTICE

The Airworthiness Limitations section (Section 2.0) is FAA Approved and Specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA Approved.

These Documents Must be Kept with the Aircraft Records

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INSTRUCTIONS FOR CONTINUED AIRWORTHINESS**

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REVISIONS

Rev.	DESCRIPTION OF CHANGES	Author	Date	Approved By	Approved Date
-	Original Release	JNS	11/16/2004	JNS	11/17/2004
A	Added ICA document to STC SA01129SE, Fixed formatting. Added wording to make the TCAS/TCAD references more generic.	JNS	1/25/2005	JNS	1/25/2005
B	Added STC SA00560SE and SH3319NM, and reference to helicopter lights.	JNS	1/13/2006	JNS	1/16/2006
C	Added STC SA4005NM, SA00701SE, ST00717SE & ST00733SE to this ICA. Changed "Each Letter Check" to "C Letter Check".	JNS, DJC	7/13/2006	JNS	5/16/2007
D	Updated Section 2.7, page 7, added annual check for #3 Check Wiring and connections for security and chaffing	W. Ashforth	7/10/07	JNS	7/12/2007
E	Updated Sections 1.1, 2.7, 2.4.2, 2.8. Changed Annual and C Check to Annual or C Check. Typo: ST00733SE in header was SE00733SE. Clarified Functional Test. Added Electrical Loads section.	D. Creach	08/01/2008	JNS	08/01/2008

LIST OF ACTIVE PAGES

ORIGINAL		ADDED PAGES					
PG	REV	PG	REV	PG	REV	PG	REV
1	C						
2	E						
3	E						
4	C						

ORIGINAL		ADDED PAGES					
PG	REV	PG	REV	PG	REV	PG	REV
5	E						
6	E						
7	E						



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1.0 OVERVIEW

1.1 PURPOSE

The Precise Flight Inc. Pulselite system is a solid-state electrical switching unit that pulses the aircraft's existing external lights, such as the Landing, Taxi, Recognition, Logo, or Hover Lights. The lights are pulsed in variety of patterns at 45 times per minute (90 times per minute selectable for certain units) to create an illusion of exaggerated motion. This illusion enhances aircraft recognition in flight, similar to the manner that the flashing lights on an emergency vehicle do for automobiles. Certain Pulselite systems can also be coupled to the aircraft's TCAS/TCAD system so when activated will automatically pulse the lights for the duration of a TCAS/TCAD "Traffic Event" or "Traffic Advisory" by tying into the TCAS/TCAD unit annunciator signals. (U.S. Patent No. 6,252,525)

The Pulselite system does not effect normal operation of the aircraft lighting system. The Pulselite simply bridges the existing aircraft light switches and/or relays. The pilot can turn on his external lights at any time, by moving the light switch(es) to the ON position. When the pilot switches the applicable external lights off and the Pulselite is switched to PULSE, the Pulselite function will resume. Both the original switches and the Pulselite switch need to be switched off to turn the lights off.

Some systems may utilize a Pulse Mode switch that will allow lights, when selected, to pulse. When the Pulse Mode switch is not in the Pulse mode, the selected light will operate normally.

The TCAS option allows automatic control of the Pulselite function for the duration of traffic advisory. By placing the Pulselite TCAS/TCAD "Traffic Event" control switch in the ACTIVE, or Traffic Event in the ON position, or the stroblight is on if coupled with the Pulselite, the TCAS/TCAD processor will initiate pulsing of the external lights. In IMC conditions this switch should be in the OFF position. The Pulselite "Pulse" and TCAS/TCAD Active "Traffic Event" pulse functions may be controlled by a separate Pulselite switch or incorporated into the existing Strobe or Logo light switches.

1.2 ICA REVISIONS

To ensure the maintenance of your existing aircraft, possible revisions to section 2.0 Instructions for Continued Airworthiness may require updating over the life of the aircraft. Per the applicable Federal Aviation Regulations, an update process is required to properly maintain these instructions in addition to the aircraft itself. Because of this, it is imperative to complete the registration card for the aircraft once the system is installed.

Revisions can be made by a service letter from Precise Flight, an Airworthiness Directive as issued by the administrator, by single page updates, or a complete replacement of all pages of the manual. It must be clearly noted as to the revision level of the pages listed in The List of Active Pages. If a single sheet(s) is replaced, replace the list of active pages with the new one provided, or update the list manually and initial and date the list.



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2.0 INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

2.1 INTRODUCTION

The contents of this section provide the instructions for continued airworthiness for the Pulselite Lighting Control System Installation. Because a majority of the installation does not affect the standard airworthiness of the aircraft, only the key items that exist different are noted in this section. All structure and general maintenance must be performed in accordance with existing approved maintenance practices, or the aircraft maintenance manual.

2.2 SYSTEM DESCRIPTION

A Precise Flight Pulselite system includes is a solid state switching device that flashes the Landing, Taxi, Logo, Hover, and/or Runway Turnoff Lights, and associated wires, switches, etc. The pulsing lights create an illusion of exaggerated motion that allows the aircraft to be more easily recognized.

In general, the **ON** position of the Lights will override the Pulselite system. Some specific installations may require the deactivation of the pulse function to resume steady on lighting.

Certain Pulselite Models have an optional TCAS/TCAD system interface. With this interface, the system may be turned on automatically by the aircraft's TCAS/TCAD system utilizing its Annunciator Output, if the Pulselites Traffic Event Pulse enable switch is left in the **ACTIVE**, or in the **STROBE ON** position. This is generally the aircrafts STROBE switch.

The Pulselite System is considered optional equipment and the airplane may be dispatched with the system turned **OFF**, or disabled by tying off the CB. In case of a system malfunction the circuit breaker may be pulled to deactivate the system for dispatch.

2.3 SPECIAL TOOLS REQUIRED

Refer to the installation instructions, or drawings for the Pulselite System.

2.4 MAINTENANCE INSTRUCTIONS

Maintain aircraft structure, and wiring in accordance with aircraft maintenance manual, and FAA AC43.13.

2.4.1 PULSELITE CONTROL UNIT REMOVAL AND REPLACEMENT

The Pulselite Control Unit (PCU) requires no special considerations and is grounded to the airframe when installed. Normal care when handling the PCU should be observed.

Removal of the control unit requires disconnect the control and/or power wiring connectors to the unit itself, and unscrewing/unbolting the unit from the airframe.

Installation is a direct opposite of removal followed by a system functional check.

Refer to aircraft Pulselite unit installation drawings, if used, for specific instructions.



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2.4.2 FUNCTIONAL TEST

The following test procedure will evaluate the Pulselite System installation in the aircraft:

System without TCAS/TCAD Interface:

1. Check wiring & connections before applying power.
2. Activate Pulse function and verify that the appropriate Landing/Taxi/Recognition/Hover Lights are flashing on the aircraft.
3. Switch the appropriate Landing/Taxi/Recognition/Hover Lights to steady ON and verify that the lights remain on without flashing.
4. Switch the Pulselite Control Unit off and the existing Landing/Taxi/Recognition/Hover Light switches are off and verify that the Landing/Taxi/Recognition/Hover Lights are OFF.

System with TCAS/TCAD Interface:

1. Check wiring & connections before applying power.
2. Activate Pulse function and verify that the appropriate Landing/Taxi/Recognition/Hover Lights are flashing on the aircraft.
3. Switch the appropriate Landing/Taxi/Recognition/Hover Lights to steady ON and verify that the lights remain on without flashing.
4. Switch the Pulselite Control Unit off and the existing Landing/Taxi/Recognition/Hover Light switches off and verify that the Landing/Taxi/Recognition/Hover Lights are OFF.
5. Place the Landing Light Switch(es) in the OFF position. Place the Strobe, Nose Landing, Traffic Event Armed, or Active Switch in the Active/Enable position.
6. Simulate a TCAS/TCAD traffic situation on the aircraft TCAS/TCAD system or ring out wiring at the Pulselite Control Unit and the TCAS/TCAD processor and apply a ground to TCAS/TCAD pin on the Pulselite Control Unit. Observe that the Lights are flashing during the simulated "Traffic Advisory."
7. Switch the Pulselite Control Unit switch to off, the TCAS/TCAD interface switches off, the existing Landing/Taxi/Recognition/Hover Light switches off, and verify that the External Landing/ Taxi/ Recognition Lights are OFF.

2.5 TROUBLE SHOOTING GUIDE

2.5.1 Pulselite Fails to Operate

- a. Check circuit breakers.
- b. Check Connector plugs for security and contact insertion.
- c. Check Wiring diagram against aircraft installation.
- d. Follow detailed trouble shooting guide in appropriate installation manual.

2.5.2 Additional Technical Assistance

Please call Precise Flight, Inc. 800-547-2558



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2.6 AIRWORTHINESS LIMITATIONS

This Airworthiness Limitations section is FAA Approved and Specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA Approved.

None – The operation of the Pulselite® System does not impact the airworthiness limitations and is not required for normal flight.

2.7 ELECTRICAL LOADS

As the Pulselite unit simply switches power to existing lamps, the only additional load to the electrical system is that of the Pulselite unit's internal electronic logic. Typical loads listed below.

2.7.1 Pulselite Unit Loads:

Model:	Current Draw:
1210/2405-2A	≈15 mA
1220/2410-2	≈15 mA
3060 Series	≈15 mA
2401S, 2401S-C	≈50 mA
2400 Series	≈50 mA
2401, 2401C, 2401D, 1151, 1151D, 1152, 1152B	≈50 mA
1150 Series	≈75 mA



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2.8 SCHEDULED MAINTENANCE INTERVALS AND INSPECTIONS FOR CONTINUED AIRWORTHINESS

If TCAS/TCAD option has been installed, repeat the TCAS/TCAD Checkout Procedure on an annual basis.

Wiring and termination security for the system will be consistent with the aircraft continued airworthiness regarding aircraft wiring and terminations.

Table 1 - Scheduled Maintenance Intervals and Inspections

ANNUALLY (If progressive Letter Checks not used)		
C LETTER CHECK		
STC SA00560SE, SA00701SE, SA01129SE, SA2622NM, SA4005NM, ST00717SE, ST00733SE, SH3319NM Pulselite® Scheduled Maintenance Intervals		
1. Check Pulselite for Proper operation: Connect Ground Power to the Aircraft, or Power the aircraft on the ramp. Activate the Pulselite system. Observe that the external lights connected to the Pulselite system are flashing. These lights may be the Landing, Taxi, Recognition, Logo, Hover, or Runway Turnoff lights depending on installation. Switch the external lights connected to the Pulselite to steady ON.. Observe that the external lights connected to the Pulselite System are now on Steady. Switch the Pulselite Control Unit OFF and the connected Landing / Taxi / Recognition / Hover lights to OFF and observe that the external lights are off.	•	•
2. TCAS/TCAD Checkout Procedure (If Option Installed): Connect Ground Power to the Aircraft, or Power the aircraft on the ramp. Place the Pulselite Switch in the ACTIVE position. (Alternately the Pulselite System TCAS function may be connected to the aircraft Strobe, or Recognition Light switch as indicated by an ACTIVE or ON / ACTIVE or STROBE marking depending on aircraft installation. Simulate a TCAS/TCAD traffic event and alert situation on the aircraft collision avoidance system, or ring out wiring between the Pulselite control unit TCAS Active Pin (reference appropriate Precise Flight Installation Manual and the appropriate Collision Avoidance System) and place a ground between the Pulselite Control Unit and the collision avoidance system. Observe that the external lights connected to the Pulselite system are flashing. Toggle switch OFF Reconnect wiring as required from testing.	•	•
3. Check Wiring and connections for security and chaffing	•	•

SIGNED: _____
DATE: _____