

PA-32 RUDDER FIN CAP/ STROBE FAIRING

APPLICABLE MODELS:

PA-32-260, PA-32-300, PA-32S-300, PA-32R-300
PA-32R-301, PA-32R-301T, PA-32-301, PA-32-301T

INSTALLATION MANUAL

ISSUE DATE: 07/04/90

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REV #	DATE	EFFECT
A	04/15/91	Corrected assembly order of light components.
B	06/01/97	Changed name and address.
C	01/01/99	General cleanup. Added provision for 24 volt aircraft. Added provision for installation of already approved strobe systems with the BCN fairing.
D	6-25-09	ECO 0158

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NOTE #1

This manual describes the installation of the KNOTS 2U P/N 2832BCN, in conjunction with an Aeroflash or Whelen strobe system. It also allows the installation of KNOTS 2U P/N 2832FIN to be installed on top of the vertical fin on planes that already meet the FAA anti-collision requirements without a light on top of the vertical fin. The installation must conform to FAA AC43.13-2A, chapter 4, paragraph 51 and FAR 23.1401.

NOTE #2

If an equivalent strobe system other than the Aeroflash strobe kit described in this manual is used with the BCN fairing, all of the manufacturer's directions must be followed. The strobe system must be approved for the aircraft and reference FAA AC 43.13-1A Chapter 11 to confirm correct wiring procedures. The installation must conform to FAA AC43.13-2A, chapter 4, paragraph 51 and FAR 23.1401.

SECTION 1.0 **REPLACING EXISTING STROBE / BEACON OR NON STROBE FAIRING**

1.1 **REMOVING OLD BEACON**

Remove screws and washers retaining old fairing and beacon. Disconnect wiring and remove fairing.

1.2 **POWER SUPPLY INSTALLATION**

The power supply may be mounted on the radio rack or elsewhere in the fuselage where space and weight permit. Mount power supply per manufacturer's installation instructions.

1.3 **WIRING NEW STROBE**

Consult strobe manufacturers wiring instructions and FAA AC 43.13-1A Chapter 11 to confirm existing wire, circuit breaker, and switch meet the rating required for new strobe. Plug power wire from cockpit switch into power supply just installed with the hot wire connected to the positive side (red lead) of the power supply. The black lead should be connected to an appropriate aircraft ground. The shielded cable can be run down the leading edge of the vertical fin using the old wire to pull it through. Experience has indicated it is easier to pull the wire from the top to the bottom rather than try to pull it up. After pulling the wires through vertical fin and fin cap connect AMP N-LOK plugs to all wires strictly observing all polarities. The red wire connects to #1, black wire to #2, and white wire to #3. *THE POWER SUPPLY IS A HIGH VOLTAGE DEVICE. LET THE POWER SUPPLY BLEED DOWN FOR 10 MINUTES AFTER TURNING OFF POWER BEFORE HANDLING.*

1.4 **INSTALLING MOUNTING PLATE**

Using mounting plate as a drilling template, drill #30 mounting holes in top of fairing P/N 2832BCN. Secure mounting plate to fairing using (2 ea) P/N AN526C-632-R8 screws, P/N AN960-6 Washers, and P/N AN365-632 nuts.

1.5 **CHECKING POWER CONNECTION**

Using care not to handle the glass tube portion of the light assembly install AMP N-LOK connector to P/N 073-0141 flashtube through hole in mounting plate and fin cap and connect to mating plug in vertical fin. Temporarily install fairing on top of fin and turn cockpit switch on to check operation of flash unit.

1.6 MOUNTING 2832BCN FAIRING

Using old fairing and airframe as a guide, duplicate mounting holes from old fairing onto new fairing. If antenna notches need to be cut in new fairing, use old fairing pattern as a guide. The fairing may be painted at this time prior to installation on aircraft. When making final installation the AMP N-LOK plug should be connected and a tie wrap used to secure the two halves of the plug together. Install fairing using the original screws and washers.

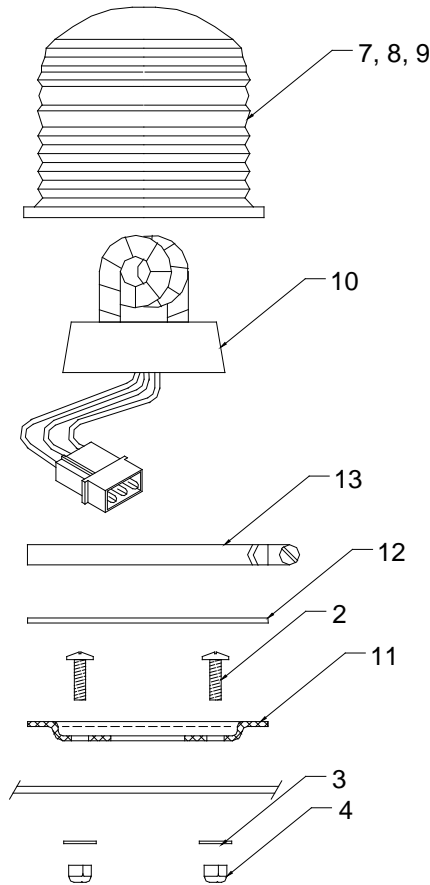
1.7 MOUNTING LAMP ASSEMBLY

Before mounting the light, using the Mylar tape, you may mask a small area at the front of the inside of the lens to shield the light from interfering with the pilot and crew. The masking must not compromise the "field of coverage" requirements of FAR 23.1401. Place gasket on mounting plate and install lens using clamp ring. Clamp ring screw should be located at aft side of lens.

1.8 FINAL INSTALLATION CHECK

Check rudder movement through full travel range for clearance from fairing and freedom from binding. Make a night flight check to assure that objectionable light reflections have been eliminated and enter a notation in the aircraft logs to that effect. Install cockpit decal as close to the strobe light switch as possible. A bead of RTV may be applied to the lower edge of the fairing if desired to prevent moisture from entering.

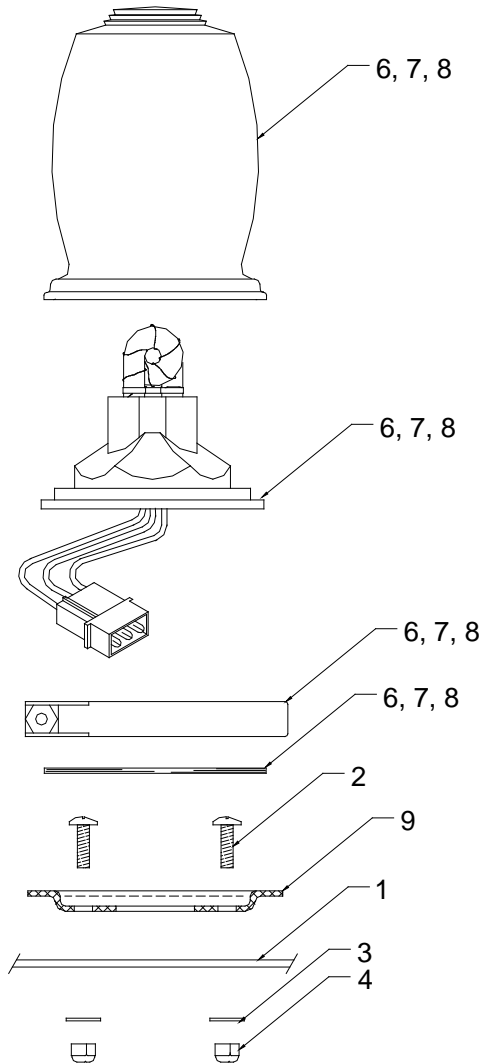
1.9 AEROFLASH PARTS AND INSTALLATION DIAGRAM



Item	Qty.	Part No.	Description
1	1	2832BCN	Beacon Fairing
2	2	AN526C-632R8	Screw
3	2	AN960-6	Washer
4	2	AN365-632	Nut
5	1	152-0007	12 Volt Aeroflash Power Supply (Not Shown)
6	1	152-0010	24 Volt Aeroflash Power Supply (Not Shown)
7	1	111-0001	Aeroflash Red Lens (Optional)
8	1	111-0004	Aeroflash Clear Lens (Optional)
9	1	111-0021	Aeroflash Split Red / Clear Lens (Optional)
10	1	073-0141	Aeroflash Flashtube (12 or 24 Volt)
11	1	101-0011	Aeroflash Mounting Plate
12	1	073-0002	Aeroflash Clamp Ring
13	1	080-0001	Aeroflash Gasket
14	1	073-0185	Aeroflash Cable Assembly (Not Shown)
15	1	120-0030	Aeroflash Mylar Tape (Not Shown)
16	1	120-0039	Aeroflash Cockpit Decal

1.10

WHELEN PARTS AND INSTALLATION DIAGRAM



Item	Qty.	Part No.	Description
1	1	2832BCN	Beacon Fairing
2	2	AN526C-632R8	Screw
3	2	AN960-6	Washer
4	2	AN365-632	Nut
5	1		Whelen Power Supply. Whelen HDACF Series or A490 Series (Not Shown)
6	1	A470AR	Whelen Strobe Head Assembly – Red Lens (Optional)
7	1	A470AW	Whelen Strobe Head Assembly – White Lens (Optional)
8	1	A470AS	Whelen Strobe Head Assembly – Split Red/White Lens (Optional)
9	1	H-102	Whelen Mounting Plate
10	1	HS-30	Whelen Cable Assembly and Installation Kit (Not Shown)

1.11 PAPERWORK

Perform paperwork (337 and logbook entries). Place Supplemental Type Certificate and KNOTS 2U, Ltd. Maintenance Manual with log books.

Fairing arm (old and new)	Per appropriate manual
subtract original fairing and beacon weight	- XX.X lbs
New light and fairing weight	.70 lbs
Power supply weight	1.31 lbs
Power supply arm to be determined by installed position.	

SECTION 2.0

REPLACING EXISTING FAIRING WITH NON BCN FIN CAP

NOTE #3

This replacement of the existing fin cap and beacon/strobe requires that the remaining anti-collision lighting on the aircraft meet the "field of coverage" specifications of FAR 23.1401. If the wingtip strobes and/or tail light of fuselage strobes supply the required field of coverage without the vertical fin light, then the vertical fin light may be removed. If the coverage is insufficient, then supplemental lighting must be installed.

2.1 REMOVING OLD FAIRING

Remove screws and washer retaining old fairing. If old unit contains a strobe or beacon, terminate and insulate wires using tie-wraps & heat shrink.

2.2 MOUNTING 2832FIN FAIRING

Fairing may be painted at this time before installation on aircraft. Install new fairing using the original screws and washers.

2.3 FINAL INSTALLATION CHECK

Check rudder operation through its full travel range for clearance from fairing and freedom from binding. A bead of RTV may be applied to the lower edge of the fairing to seal against moisture.

2.4 PARTS LIST

PART #	QTY	DESCRIPTION
2832FIN	1	FIN CAP FAIRING

2.5 PAPERWORK

Fairing arm (old and new)	Per appropriate manual
subtract original fairing and beacon weight	- XX.X lbs
New fairing weight	.32 lbs
Old power supply weight	-XX.X lbs

SECTION 3.0**MAINTENANCE MANUAL**

KNOTS 2U, LTD.
PIPER PA-32
FIN CAP / STROBE

PART A INSPECTION

- 1 Daily inspection at preflight to check security of fin cap attachment to aircraft. Also check for any cracks in the fin cap. Confirm operation of strobe if installed.
- 2 During annual or 100 hour inspections, inspect fin cap attachment hardware for excessive wear or looseness.

PART B MAINTENANCE

- 1 There are no special tools required to maintain the fin cap or strobe. Any tools needed are basic hand tools.
- 2 If the fin cap attachment hardware is found to be excessively worn or loose during the 100 hour or annual inspection, it should be replaced.

PART C CRACKING OR DEFECTS

- 1 If a crack is found in the fin cap . stop drill the crack
- 2 If any crack exceeds 1" in length; or, if a crack runs from an attachment hole to the outer edge of the fin cap, remove the fin cap and repair the crack according to FAR AC43.13-1A Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair, Chapter 2.