



Field Installation of Adjustable PAPI Baffles

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1. Introduction

This service bulletin provides instructions for modifying the horizontal light beam coverage of the PAPI unit for obstacle avoidance in the approach area for the ADB Airfield Solutions' 2-lamp PAPI A or PAPI B.

2. References

Refer to Table 1 for references.

Table 1. References

Reference Description	ADB Airfield Solutions's Part Number
<i>Style A L-880/L-881 PAPI Precision Approach Path Indicator (Voltage Powered) instruction manual</i>	96A0209
Style A PAPI (Voltage Driven) general assembly drawing	44A4733-XXXX
<i>Style B L-880/L-881 PAPI Precision Approach Path Indicator (Current Powered) instruction manual</i>	96A0236
Style B PAPI (Current Driven) general assembly drawing	44A5860-2XXX

3. Special Tools and Equipment Required

Refer to Table 2 for the special tools and equipment. This equipment is not supplied.

Table 2. Required Equipment Not Supplied

Description	Quantity
Walkie-talkies or other form of communication	2
Small Phillips screwdriver	1
Combination square or machinist's square	1
Cotton gloves	1 pair
Instruction manual for Style A PAPI (Voltage Driven) part number 96A0209	1
Instruction manual for Style B PAPI (Current Driven) part number 96A0236	1

4. Items Included in PAPI Baffle Retrofit Kits

This subsection provides the PAPI Baffle Retrofit Kit ordering code, and a parts list for 2-box and 4-box baffle kits.

PAPI Baffle Retrofit Kit Ordering Code

See Figure 1 to determine the part number for a particular PAPI Baffle Retrofit Kit.

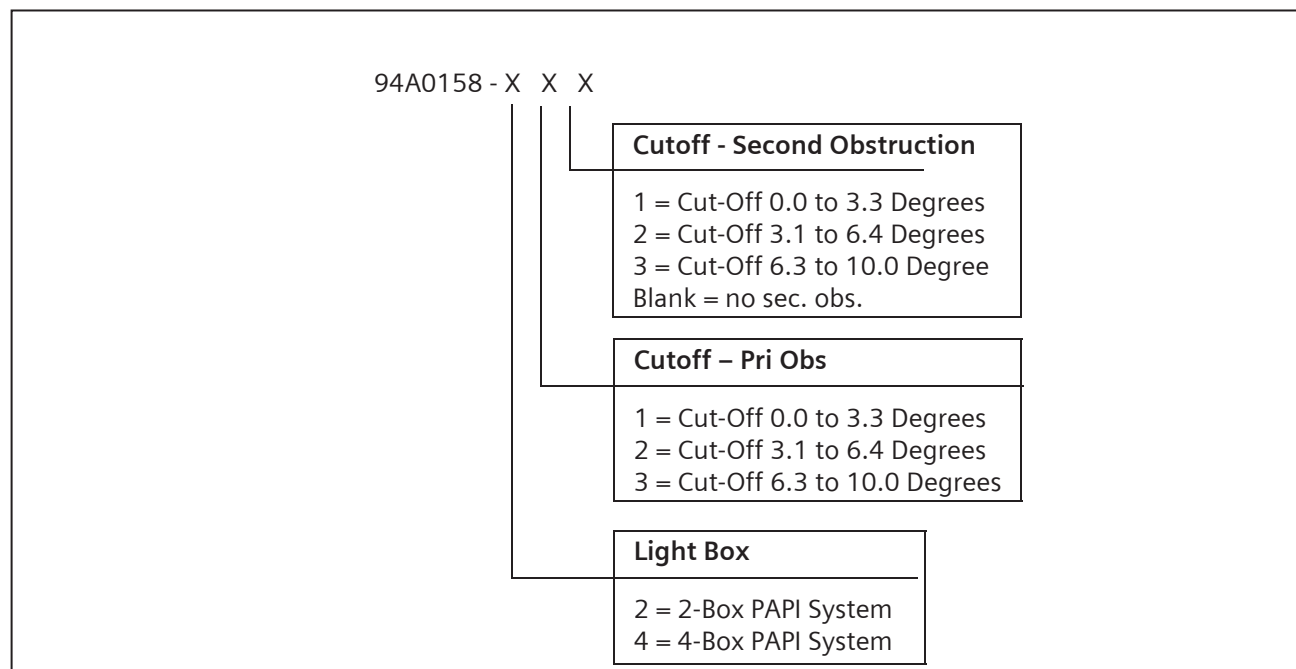


Figure 1. PAPI Baffle Retrofit Kit Part Ordering Code

Baffle Kit Parts List for 2/4-Box PAPI

Refer to Tables 3 through 5 for the Baffle Kit parts list for 2/4-box PAPIs.

Table 3. Baffle Kit 94A0158-XXX

	Part Number	Baffle Kit No.			
		94A0158-21 Quantity	94A0158-211 Quantity	94A0158-41 Quantity	94A0158-411 Quantity
Baffle Mounting Plate	60C1672	4	4	8	8
Baffle (0.0 -3.3)	60B1673-1	4	8	8	16
Pan head screws, 6-32 x 0.75 large	64A0198-12	8	8	16	16
Lockwasher, Split #6	66A0026-11	8	8	16	16
Hex Nut, 6-32	65A0015-11	8	8	16	16
Pan head screws, 8-32 x 0.38 large	64A0966/06	8	16	16	32

Baffle Kit Parts List for 2/4-Box PAPI (contd.)

Table 4. Baffle Kit 94A0158-X2/X21

Baffle Kit No.	Part Number	Baffle Kit No.			
		94A0158-22 Quantity	94A0158-221 Quantity	94A0158-42 Quantity	94A0158-421 Quantity
Baffle Mounting Plate	60C1672	4	4	8	8
Baffle (3.1 – 6.4)	60B1673-2	4	8	8	16
Pan head screws, 6-32 x 0.75 large	64A0198-12	8	8	16	16
Lockwasher, split #6	66A0026-11	8	8	16	16
Hex nut, 6-32	65A0015-11	8	8	16	16
Pan head screws, 8-32 x 0.38 Large	64A0966/06	8	16	16	32

Table 5. Baffle Kit 94A0158-X3/X31

	Part Number	Baffle Kit No.			
		94A0158-23 Quantity	94A0158-231 Quantity	94A0158-43 Quantity	94A0158-431 Quantity
Baffle Mounting Plate	60C1672	4	4	8	8
Baffle (6.3 – 10.0)	60B1673-3	4	8	8	16
Pan head screws, 6-32 x 0.75 large	64A0198-12	8	8	16	16
Lockwasher, split #6	66A0026-11	8	8	16	16
Hex nut, 6-32	65A0015-11	8	8	16	16
Pan head screws, 8-32 x 0.38 large	64A0966/06	8	16	16	32

Kits with 2 obstruction baffles may have different baffle part numbers for each side. A 94A0158-432 is not shown above, but would have the same number of parts with one side having a baffle 6.3-10 and the other baffle 3.1-6.4.

5. Modification Procedure

NOTE: Two baffles are required for EACH PAPI Light Box, or four for EACH PAPI Light Box if you have 2 obstructed sides. Each set of baffles are to be the same cut-off range. More than one baffle type (cut-off range) can be ordered depending upon the application. Contact ADB Airfield Solutions if you are not sure about the cut-offs required for your particular application.

NOTE: The estimated time required is 60 minutes per PAPI Light Box.



WARNING: Only personnel authorized to work on high voltage equipment should make the modifications described in this service bulletin.



WARNING: Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage.

NOTE: Coordinate a power outage for the PAPI system with Air Traffic personnel.

To modify the horizontal light beam coverage of the PAPI unit, perform the following procedure:

1. De-energize the PAPI system.
2. Open and remove the top cover of the PAPI unit and carefully loosen the spring-loaded filter holder on the filter support assembly and remove the two red filters from the filter support assembly.

NOTE: Wear cotton gloves when handling the filters.



WARNING: Glass filters are fragile. Handle with Care. Since each filter must be returned to the same filter holder from which it was removed, lay out (or mark temporarily) the filters so they can later be installed in the appropriate filter holder.

5. Modification Procedure (contd.)

- Depending on the location of the obstruction in the approach area (right or left side), attach the baffle mounting plate on the front side of the filter bulkhead. If both sides are obstructed, install one side completely first, then do the other side.

NOTE: The baffle mounting plate is mounted on either the left or right side of the bulkhead by flipping the plate over.

- Fasten the Baffle Mounting Plate to the bulkhead by using the #6-32 x 0.75 long pan head screws, hex nuts, and split lock washers provided.
- Insert the #6 screws through the plate and then through the mating slots in the bulkhead located at the end of the filter slot.

IF the obstacle is on the LEFT side of the approach area, then install the baffle over the filter slot on the RIGHT side. See Figures 1 and 3.

-OR-

IF the obstacle is on the RIGHT side of the approach area, then install the baffle over the filter slot on the LEFT side. See Figures 2 and 3.

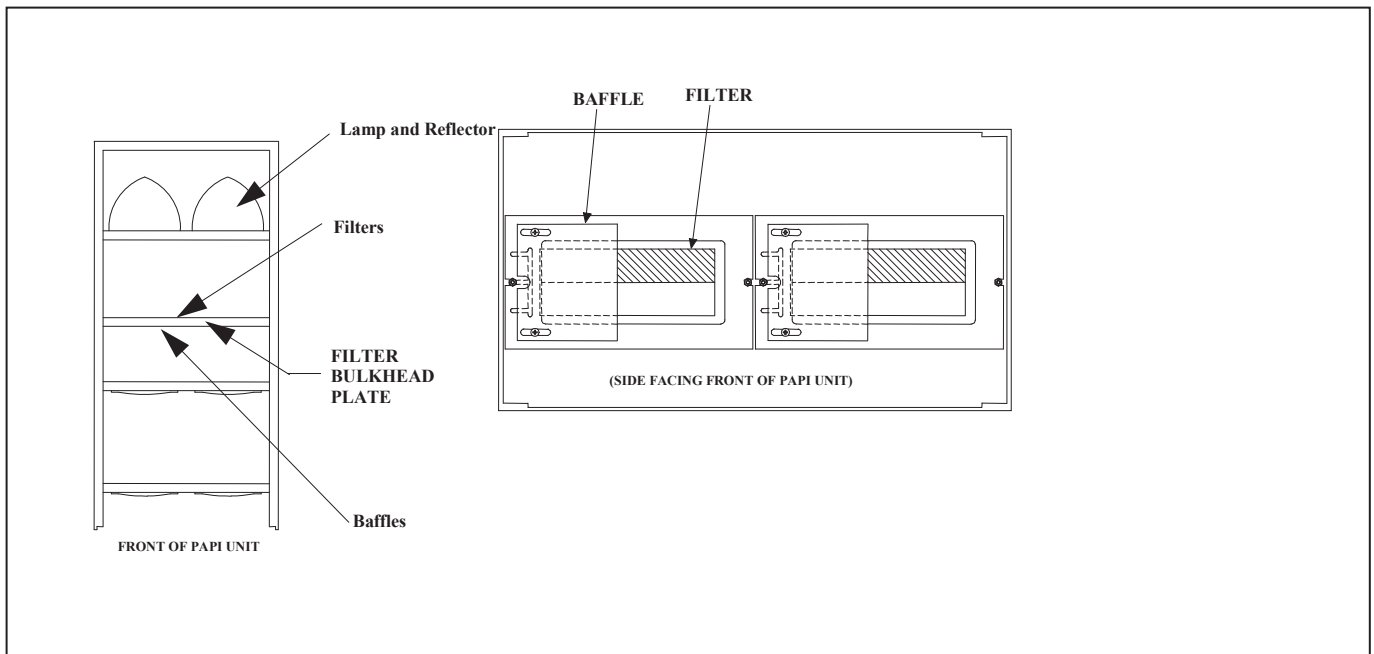


Figure 1. Baffle Located on Left Side of Bulkhead Plate for Obstacle Located on Right Side

5. Modification Procedure
(contd.)

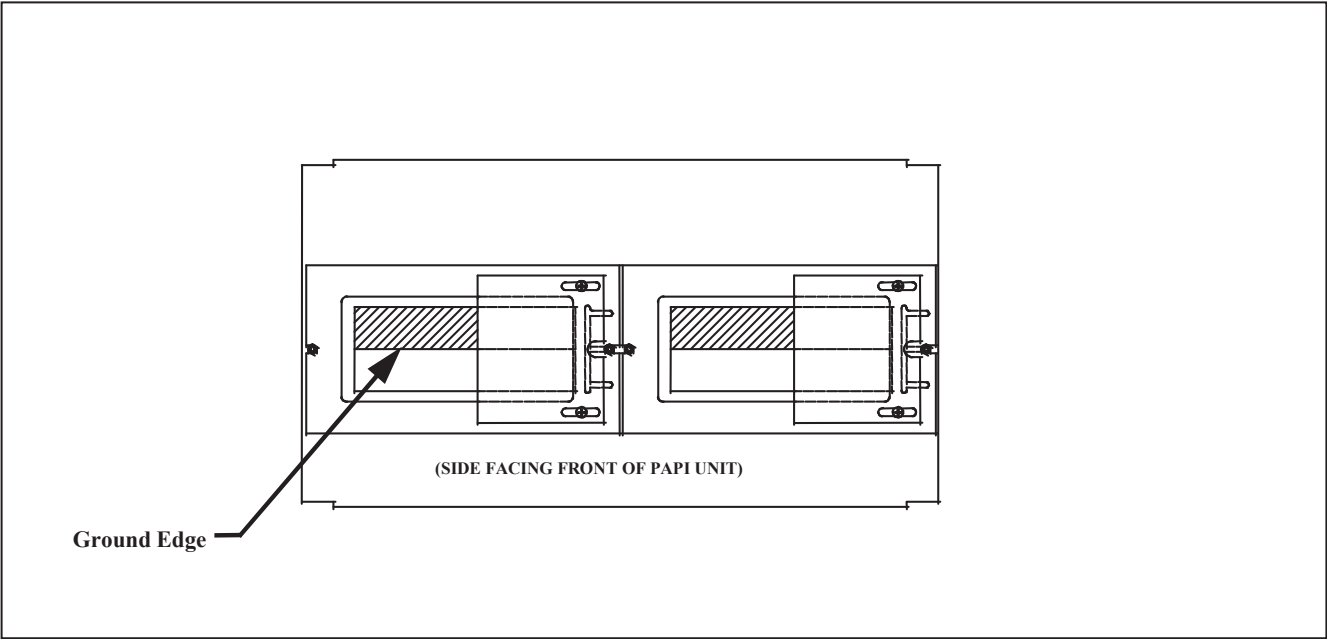


Figure 2. Baffle Located on Right Side of Bulkhead for Obstacle Located on the Left Side

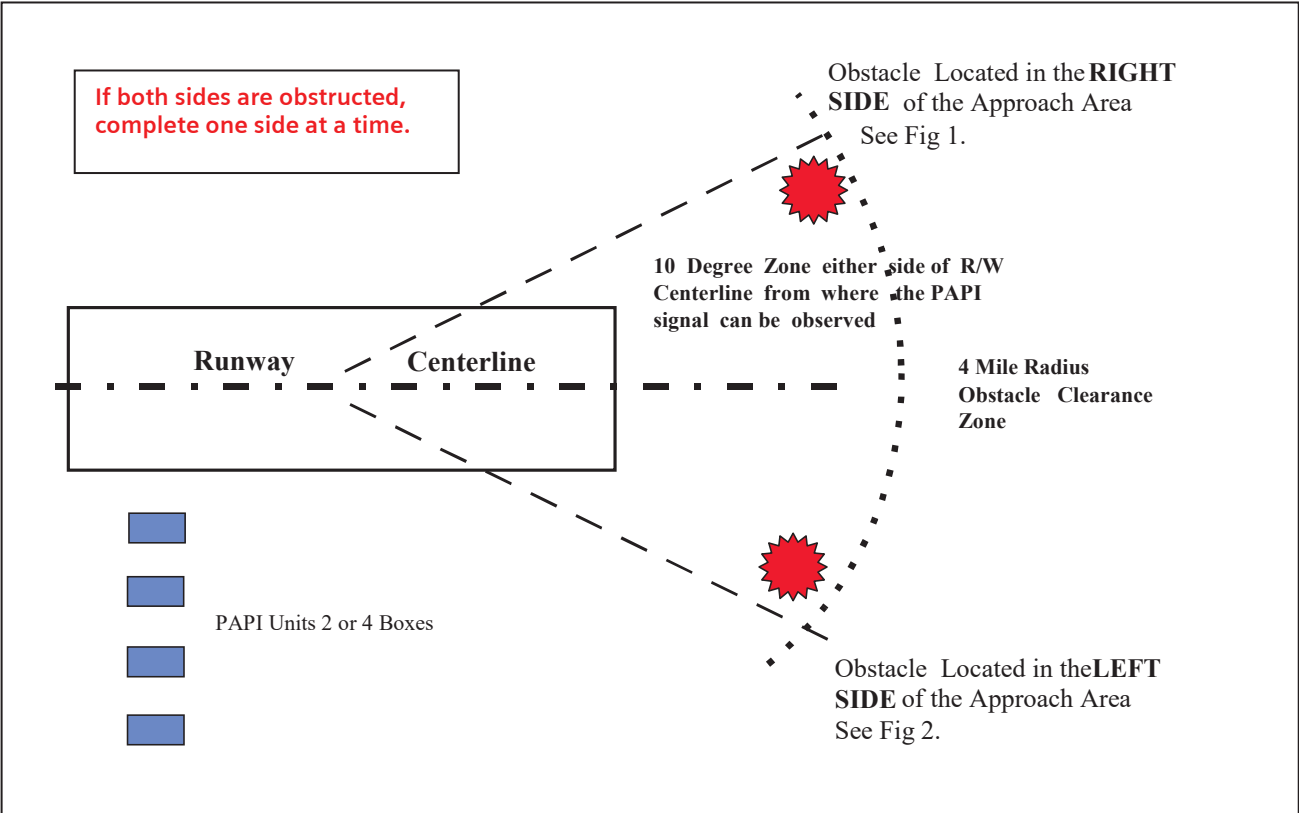


Figure 3. PAPI Signal Viewing Zone

5. Modification Procedure

(contd.)

6. Take a combination square or machinists' square of appropriate length, and square the Baffle Mounting Plate with the top edge of the filter mounting bulkhead plate. See Figure 4.

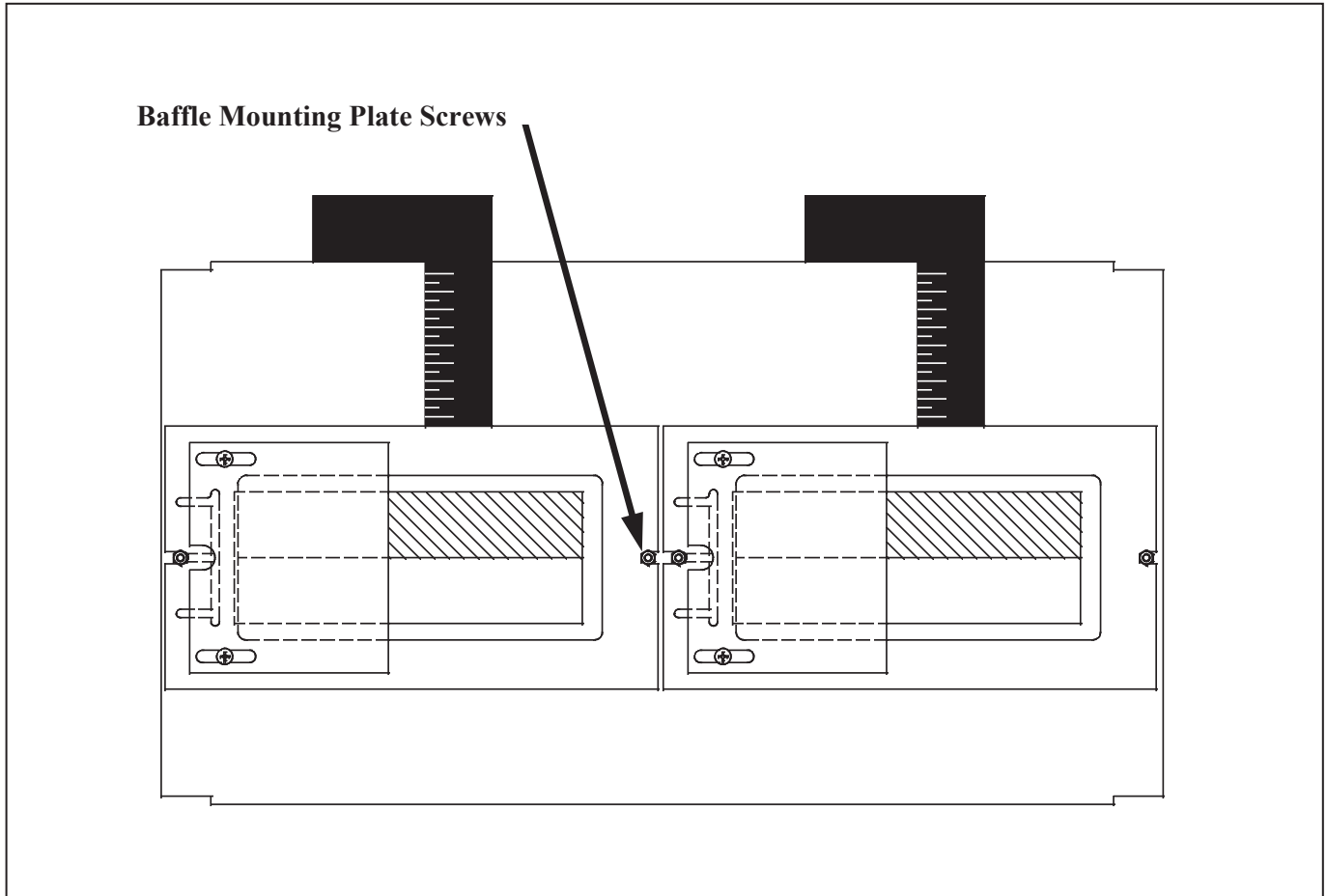


Figure 4. Squaring Top Edge of Baffle Mounting Plate

7. Using the #10-32 x 0.38 large screws, and hex nuts supplied with the baffles, install baffles as required for the application. Two #10-32 tapped holes are located in the Baffle Mounting Plate.

NOTE: Until the cutoff has been confirmed, the two screws should only be finger tight.



CAUTION: The position of the baffles on the Baffle Mounting Plate must be adjusted separately for each lamp. See Figures 1 and 2.

5. Modification Procedure (contd.)

8. Disconnect one of the lamps in the PAPI unit from the circuit and remove film disc cutout (if present). Apply power to the other lamp. Make sure that power to the other lamps in the PAPI system is de-energized.

NOTE: It may be necessary to lower the PAPI unit in elevation for the individual to see the light beam. If this is the case, jumper the tilt switch to restore power to the unit. Proceed as follows to jumper the tilt switch:

For Voltage Driven (PAPI A), see instruction manual 96A0209, Figure 8-1 or 8-2. **Jumper TB1-9 to TB1-10.**

-OR-

For Current Driven (PAPI B), see instruction manual 96A0236, Figure 8-3. **Jumper red and green leads.**

9. Position someone equipped with a walkie-talkie at the edge of the obstacle or as far out from the edge the beam where cutoff is desired. Move the baffle along the aperture of the baffle mounting plate until the light beam cut-off is seen by the individual who is standing in front of the obstacle. Use a combination square to make sure the machined edge on the baffle is perpendicular to the top edge of the Baffle Mounting Plate. Tighten the two screws on the baffle. See Figure 5.

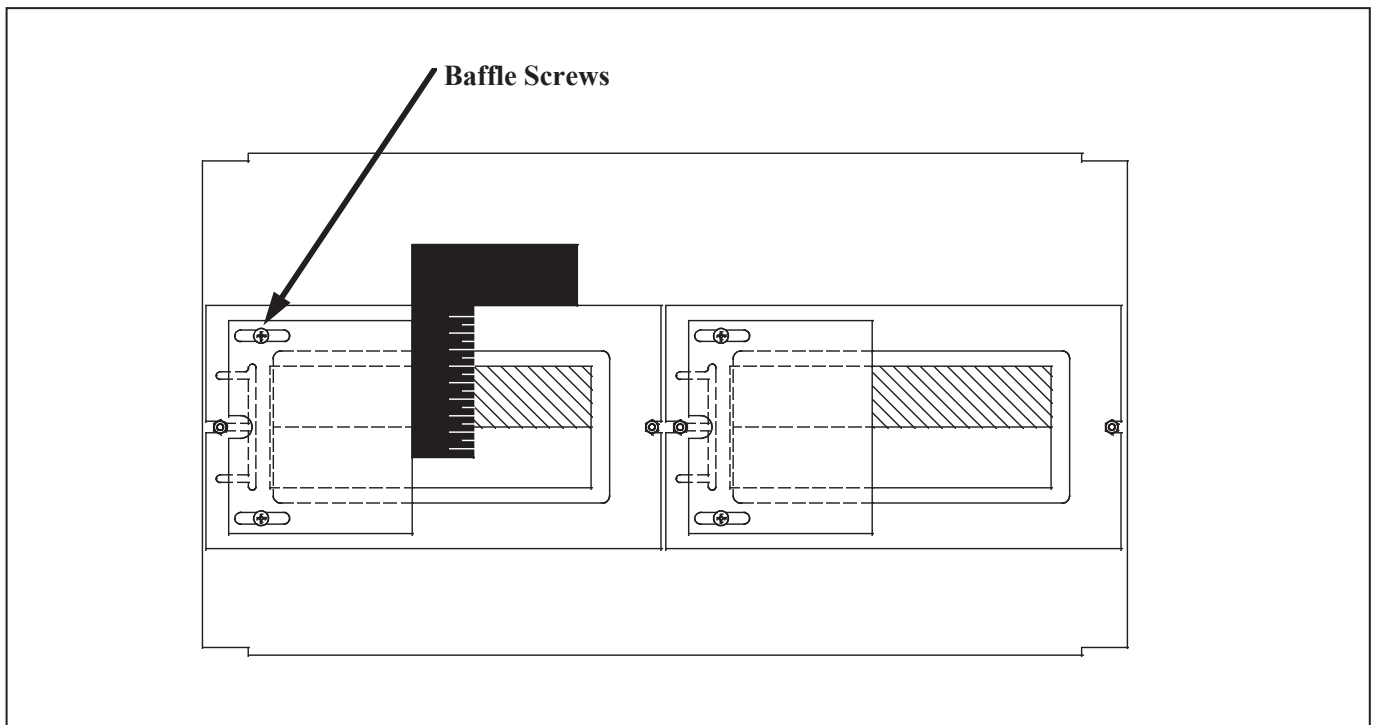


Figure 5. Squaring Baffle Plate with Top Edge of Mounting Plate

5. Modification Procedure

(contd.)

10. Disconnect power to the illuminated lamp, reconnect power to the other lamp in the PAPI unit, and repeat Step 9 for each baffle in the light box.
11. Energize both lamps in the PAPI unit, and verify that the light beam cannot be seen by the individual stationed at the obstacle. If the light beam is visible, repeat Steps 9 and 10.
12. Disconnect power from the PAPI unit, remove the jumper from tilt switch (if installed), and reinstall the red filters. Make sure each filter is installed in the same filter holder from which it was removed. The red filter's **ground edge must be installed facing down**. See Figure 2. If the filters are dirty, use a soft cotton cloth moistened with alcohol to clean the filters.
13. After the filters have been reinstalled, recheck the cutoff to make sure it is correct for each PAPI Light Box. If the settings are correct, remove ONE SCREW AT A TIME AND PLACE A DROP OF LOCTITE 242, or equal, thread locking compound on the threads. Retighten the screws. Repeat this process for each screw used to secure the baffle.
14. Repeat Steps 1 through 13 for the remaining PAPI units in the system. The individual observing the horizontal cutoff for the PAPI units should remain at the same position for all observations.
15. If the PAPI units were lowered in elevation, the units will require realignment and the tilt switches will need to be leveled. Consult the subsection *Aligning Units* in the *Installation* sections of instruction manual 96A0209 or 96A0236 for instructions to align the PAPI and level the tilt switches.
16. Before putting the PAPI system into service, a flight check of the PAPI system is required to determine if all horizontal cutoffs of the PAPI beams are properly located relative to the obstacle(s).
17. **After the cut-off angle has been verified, remove jumpers** from the Tilt Switch by reversing the procedure as outlined in Step 8. In addition, see instruction manuals 96A0209 or 96A0236 to verify that the Tilt Switch is wired correctly **BEFORE PLACING PAPI IN SERVICE**.



CAUTION: These adjustable baffles have been designed to be used in ADB Airfield Solutions' PAPI light boxes to alter the horizontal cut-off angle avoidance of obstacles. **The customer is responsible for the proper installation and verification that the horizontal cutoff produced by the baffles meets the requirements set by the FAA for obstacle avoidance.** Therefore ADB Airfield Solutions asserts that it be held harmless for the end use of the ADB Airfield Solutions PAPI in this special baffle application.