Radiorax Aviation Systems, Inc. **11616 125th Avenue NE - Lake Stevens, Washington 98258**
Phone: (360) 651-1200 Fax: (909) 912-8057 **email: sales@radiorax.com**

Installation Manual
for

Single Stack, Pedestal Rail Tray Mount Kit
RK1030

Cirrus Aircraft Specific Installation
Lancair Aircraft Specific Installation

Document P/N RKD1030-2
Revision A

October 7, 2008

List of Revisions

Revision	Date	Description	Pages
NC	04/14/03	Original Disposition	All
A	08/20/03	Removed Experimental kits, added hyperlinks	1,3
B	2008-10-07	PMA address change, text readability updates	All

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Introduction

The Radiorax avionic support rail installation kit provides a straightforward retrofit for almost any aircraft. The following documentation is provided to install the Radiorax p/n RK1030 Single Stack, Pedestal Rail Kit in your aircraft.

Document #	Description	Used With: RK1030
RKD1030-1	Packing List / Certificate of Conformance	X
RKD1030-2	Installation Manual	X
RKD1030-3	Parts Manual	X
RKD1030-4	Instructions for Continued Airworthiness	X
SA01330LA	STC Front Sheet	X

General Notes

IMPORTANT! The distance between the faces (inside dimension) of installed Radiorax support rails MUST be **6.30** inches. This spacing provides maximum compatibility with all avionic trays and facilitates the use of other Radiorax products, such as Radiorax Tray Cams, Closeout Panels, and Dzus Adapters.

Use the RK400 Installation Spacer Tool Kit for simple, precise alignment of the rails

A. Tag all parts, including attaching hardware (unless otherwise noted), removed to gain access to work areas. Protect all parts from damage during the installation process.

B. Following any drilling or cutting operation, remove burrs and metal particles. Apply a thin coat of zinc chromate, epoxy, or equivalent primer to bare metal surfaces except when the hole is used as a grounding point.

C. When reinstalling ground wires, or components requiring grounding, clean the structure surface to provide good electrical contact.

For an original installation not involving the removal of existing avionics tray attachments, please proceed to step 2.3. All item numbers in parentheses (eg. item xx) refer to item listed in RAS Parts Manual p/n RKD1030-3.

Removal of Existing Tray Attachments (Step 1)

1.1 Remove avionics equipment from their trays. Remove screws attaching trays to the existing sheet metal and/or brackets. Remove all back-straps and attaching hardware supporting the forward end of the trays.

1.2 Remove all pedestal overlays required to gain access to the tray support structure.

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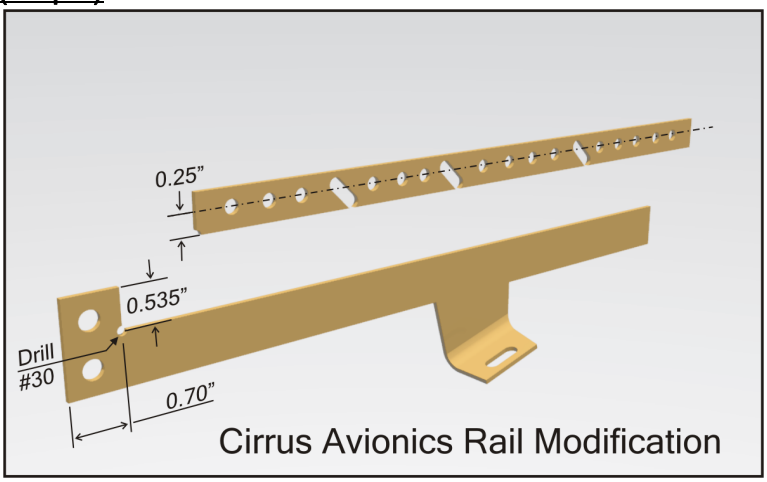
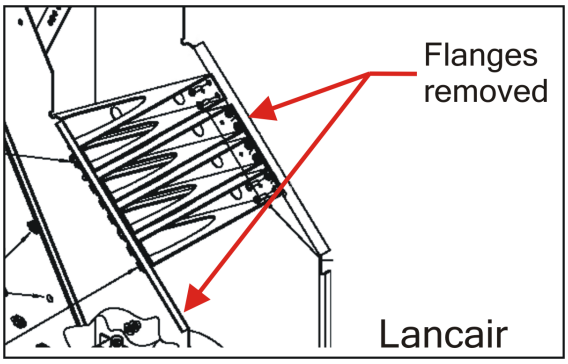
Assembly and Installation of Avionics Support Rails (Step 2)

2.1 Draw a cut-line .25" below the average centerline of the existing tray fasteners:

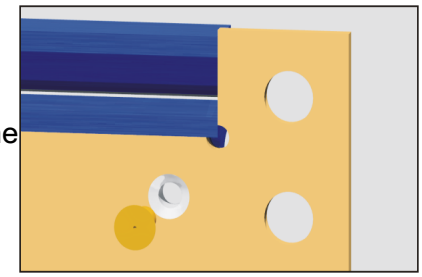
- For a Cirrus rail modification, this dimension is 0.535" from the top.

- Lancair tunnel assemblies have a stiffener flange which is cut off in addition to the measured portion of the tunnel sides.





2.2 Mark the ends of the cut:
Relieve each corner with a #30 hole. Drill the hole centered on the intersection of the cut lines. This will allow for the corner of the Radiorax rail to nest properly.



2.3 Cut rails to length: Cut the Radiorax support rails to fit the removed section of the mounting bracket (Cirrus) or sheet metal tunnel assembly (Lancair).

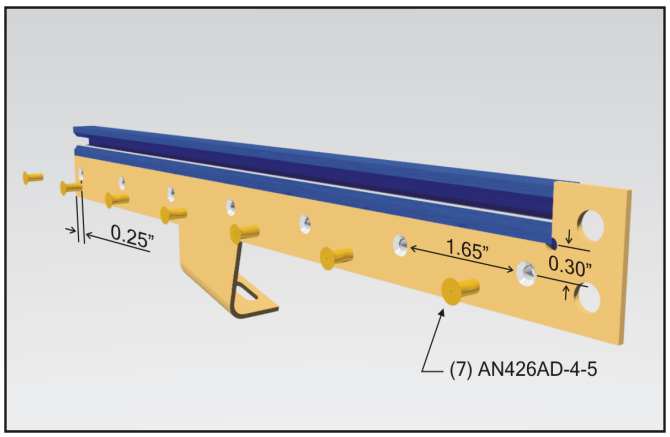
2.4 Lay out instrument panel/rail fastener hole pattern: Reference RKD1030-3 Parts Manual for permissible fastener locations. Temporarily fasten the LH and RH rails in place, 6.30" ID apart, and centered on the avionics bay cutout. Verify an inside dimension of 6.30" between the rail faces.

- A shim between the tunnel and Radiorax rail flange may be required in installations with face sheets thinner than 0.071".

- Verify that the rail p/n's are visible.

SCREW/RIVET PITCH SHOULD NOT EXCEED 2.50"

- Verify that the hole positions do not exceed the dimensions noted in the enclosed Parts Manual (RKD1030-3), and that the rivet spacing is <= 2.50".



2.5 Drill rails:
Match drill #30 through the avionic support rail flanges and countersink the tray side of the mounting bracket / tunnel assembly for the included AN426AD-4-5 rivets.

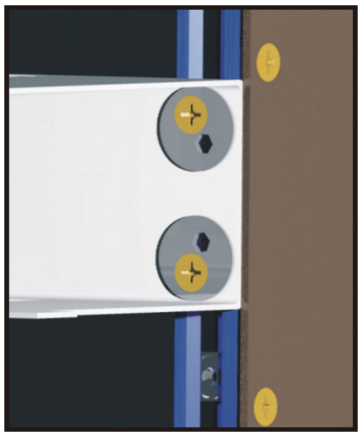
Assembly and Installation of Avionics Support Rails (Step 2), cont.

2.6 Install Nut Assemblies: Verify the installation of the total number of sliding nut assemblies (Items 2, 3a, 3, 4) used for the installation, plus 4-6 extra assemblies in each rail before final installation of the rail to the structure.

2.7 Install the LH and RH rails: Rivet the LH and RH rails to the mounting bracket / tunnel assembly.

2.8 Install the avionics trays: Radiorax avionic support rails are designed to take advantage of the increased rigidity offered by the use of countersunk screws and dimpled screw receptacles. Because of the integrity of mounting offered by this system, back-strapping the avionic trays is not necessary, provided the Radiorax support rails are affixed in a way which will bear the ultimate load factors of your aircraft.

For trays not supplied with countersunk holes, dimple each mounting hole with a #6 dimple-die, or equivalent means.



To achieve perfect face alignment in multiple avionics vendor stacks, use a Radiorax RK5000 Tray Cam Kit.

After each tray is prepared for installation, stack the tray in its respective position, pushed forward far enough to access the sliding nut assemblies. Slide all the nut assemblies (Items 2,3a,3,4) into place that are being used to mount the top tray.

Move the tray into position and fasten using the supplied screws (Item 5). Do not fully tighten the screws until the tray is verified level in its proper position. Tighten screws to lock in place.

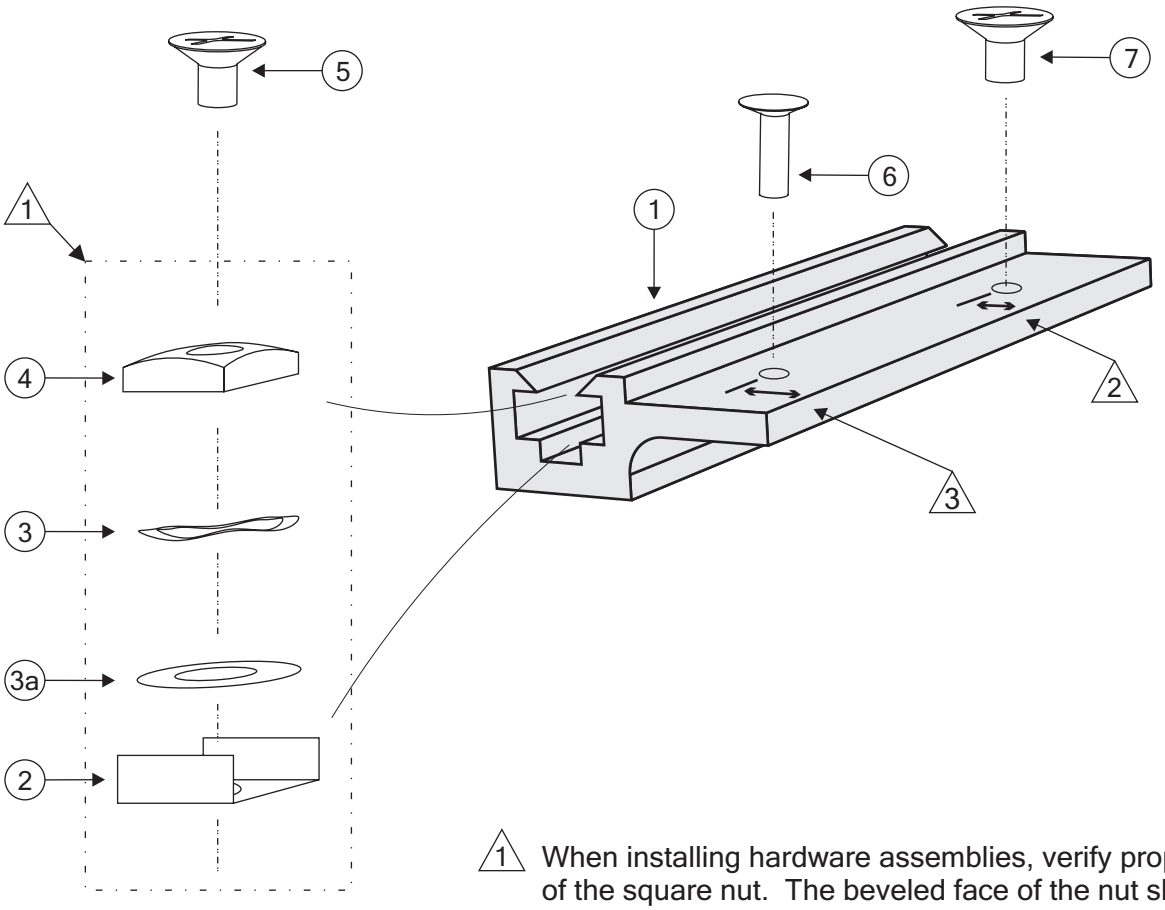
Each additional tray is mounted by positioning the nut assemblies, installing the mounting screws, sliding the tray into position beneath the last permanently affixed tray, and tightening the screws.

Nut assemblies for future use may be stored between the nuts used to mount trays, or grouped toward one end of the rail.

Use a Radiorax RK4000 Closeout Panel Kit to close out any remaining space.

Please visit www.radiorax.com for more information, including kit documents.

Radiorax RP1030-P Tray Mount Rail: Parts and Installation Detail



1 When installing hardware assemblies, verify proper orientation of the square nut. The beveled face of the nut should be visible when the assembly is installed.

2 Maximum dimension .750”
Tip: Hand turn a 6-32 bottom tap chucked in a drill press to achieve perfect thread alignment.

3 Maximum dimension .750”

QTY.	PART NO.	DESCRIPTION	MATERIAL	SIZE/SPECIFICATION	ITEM NO.
6	NAS514P632-4P	6-32 STEEL SCREW C/SUNK HEAD	-	100 degree x .250	7
6	MS20426AD4-14	7/8" #4 AD RIVET C/SUNK	-	-	6
12	NAS514P632-4P	6-32 STEEL SCREW C/SUNK HEAD	-	100 degree x .250	5
12	RP3030-P	6-32 STAINLESS SQUARE NUT	-	.310 x .310 x .105	4
12	RP3020-P-4	THREE-WAVE WASHER	Stainless	-	3
12	RP3030-P-4	SHIM WASHER	Stainless	-	3a
12	RP3000-U-4	RETAINER	Stainless	.350 x .310 x .140	2
1	RP1030-P	AVIONIC SUPPORT RAIL	6061-T6	1.000 x .385 x 12.0	1

Revisions			
REV	DESCRIPTION	DATE	APPROVED
A	Added shim washer to accommodate upgraded wave washer.	03/06/03	M. Landes

N/A	FAA/PMA
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
DECIMALS .XX ± .02 .XXX ± .010 ANGLES ± 0.30°
MATERIAL N/A
FINISH N/A
DO NOT SCALE ON DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN M. J. Landes	6/24/03
CHECKED V. D. L'Esperance	6/24/03
ENGINEER M. J. Landes	6/24/03
APPROVED V. D. L'Esperance	6/24/03

Radiorax Aviation Systems, Inc.
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TITLE: RADIORAX 1030 SERIES RAIL ASSEMBLY DETAIL
DWG CODE: -
SIZE: D | CAGE CODE: | DWG. NO.: RKD1030-3 | REV.: A
SCALE: NONE | FILE: RKD1030-3revA.cdr | SHEET: 1 of 1