

RESTORATION AND MODIFICATIONS

Ski Flying And Proper Ski Installation

By Steve Krog and Joel Gehring

Editor's Note: Installation instructions Federal Aircraft skis A-1500A thru A-2000A

Winter will soon be here and with that snow! For those Cub owners that live in the hearty northlands it will be time to get the skis out of the rafters and installed on your airplane.

For those of you who may have never installed skis on your Cub, we'll go through the procedure step by step. And for those of you who have already installed skis previously, this will be a good review.

How many ski flyers using Federal skis know that there is a right and left ski? I'd have to admit that until Cub Club member Mike Tacoma pointed it out, I was always under the impression that the skis were interchangeable from side to side. This is definitely not true!

EACH 11A129 RIGGING KIT CONTAINS:

2 11B127	CABLE ASSEMBLIES	4 AN310-6	NUTS
1 11B128	SHOCK CORD ASSEMBLY	8 AN960-616	WASHERS
12 AR-1501	PULL-OFF FITTINGS	1 11R125	RIGGING INSTRUCTION SHEET REVISED OCT. 1953
4	1/8 SAFE-LINE FITTINGS	4 AN380-3-3	COTTERS
4 AN100-4	THIMBLES		
4 AN6-6	BOLTS		

PREPARE SHOCK CORDS AND CABLES AS SHOWN DIRECTLY BELOW

FACTORY ASSEMBLY
86" CUT LENGTH

TO PREVENT CORD FROM FLARING OUT WHEN CUT, WRAP LOCATION TO BE CUT WITH TWO TURNS OF ADHESIVE TAPE. CUT SHOCK CORD AT END OF TAPE.

TWO FORWARD SHOCK CORDS ARE TO BE MADE FROM EACH FACTORY ASSEMBLY, BY CUTTING FACTORY ASSEMBLY TO PROPER LENGTH TO SUIT CONDITIONS OF THE AIRPLANE.

THE GROUND ENDS OF LOCK RING ARE TO PREVENT PINCHING OF SHOCK CORD WHEN LOCK RING IS CLINCHED.

FACTORY ASSEMBLY
113" CUT LENGTH

FORWARD LIMITING CABLE

REAR LIMITING CABLE

ONE FORWARD AND ONE REAR LIMITING CABLE TO BE MADE FROM EACH FACTORY ASSEMBLY BY CUTTING FACTORY ASSEMBLY TO PROPER LENGTH TO SUIT CONDITIONS OF THE AIRPLANE. ATTACH SAFE-LINE FITTING AT OPPOSITE END OF CABLE FROM NICOPRESS FITTING.

CAUTION! ALLOW FOR EXTRA AR-1501 FITTING WHICH PROVIDES FOR METHOD OF QUICK DISASSEMBLY. NOT USED WHEN SPECIAL STRUT BRACKET IS REQUIRED.

Typical Ski Installation

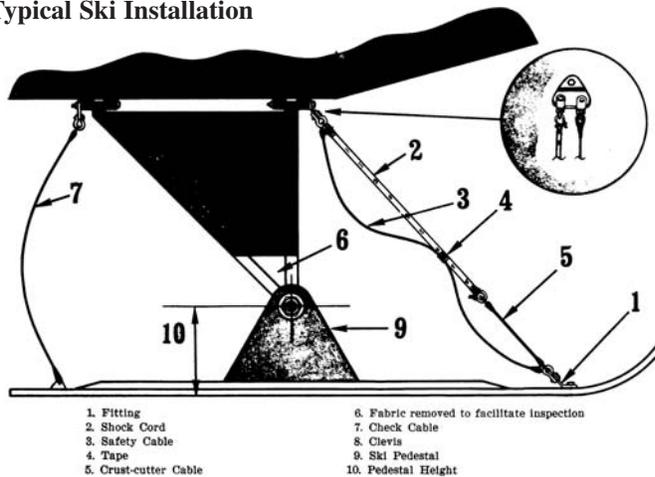


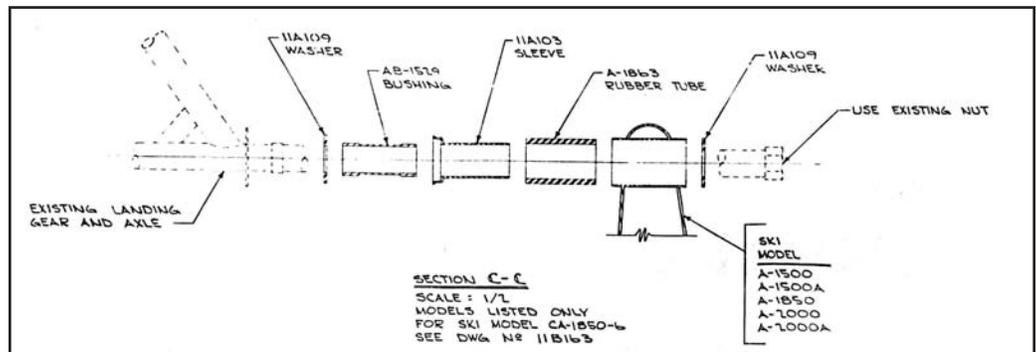
FIGURE 5.1.—Typical ski installation.

1. Fitting
2. Shock Cord
3. Safety Cable
4. Tape
5. Crust Cutter Cable
6. Fabric removed to facilitate inspection
7. Check Cable
8. Clevis
9. Ski Pedestal
10. Pedestal Height

Before installing the ski on the landing gear axle, first make sure that you have acquired all of the necessary component parts as depicted in the Typical Ski Illustration. Don't forget the necessary AN hardware as well.

Once you have collected all of the necessary parts and pieces, begin with the axle assembly.

Before beginning to install and rig skis on your airplane, We'd recommend that you first get a copy of Advisory Circular 43.13-2A. Chapter 5 provides a general guideline for ski installation, including the fabrication of fittings and rigging.



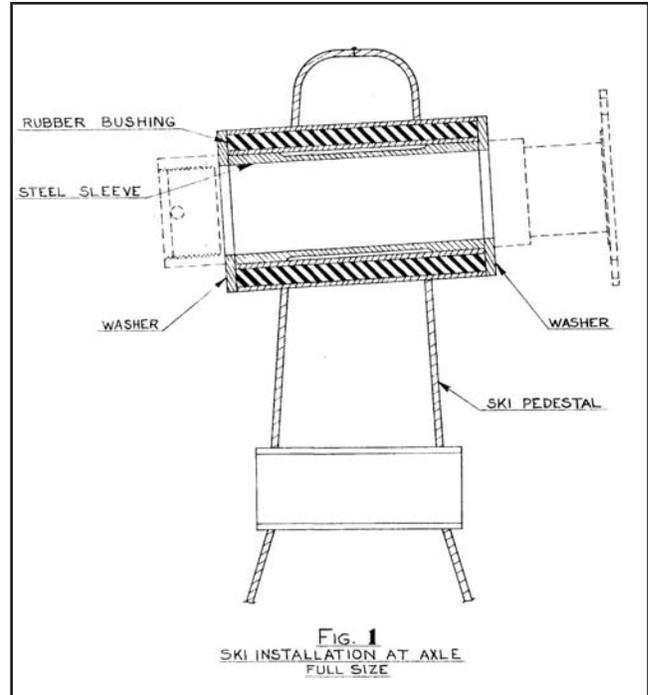
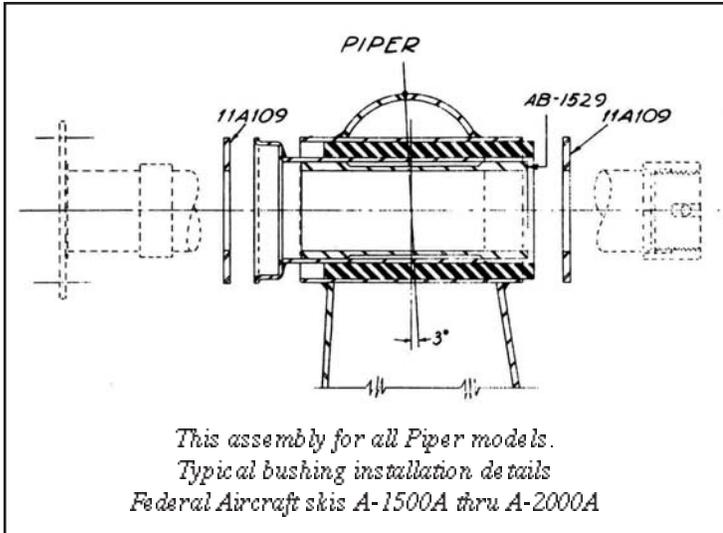
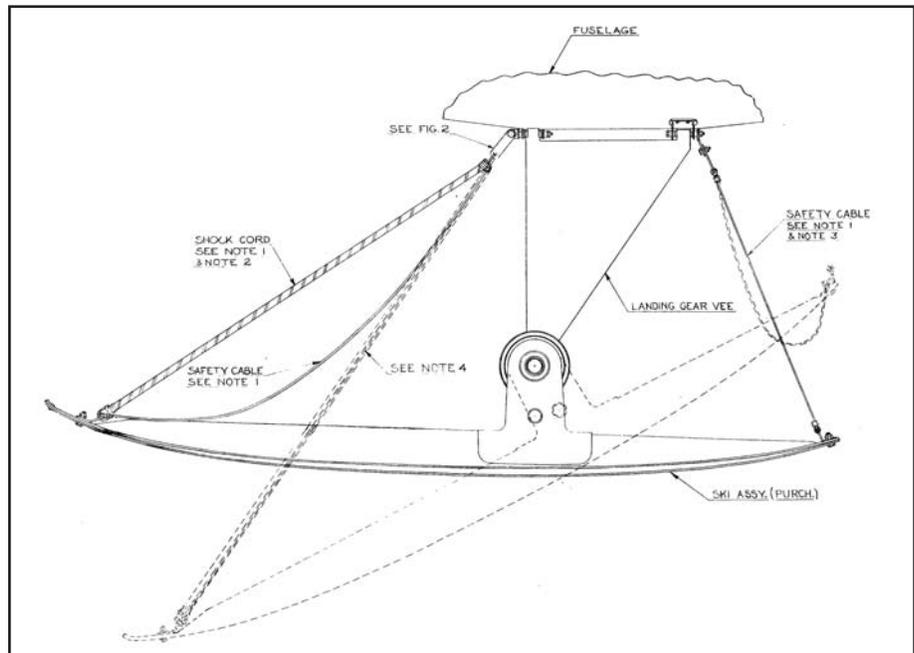


Photo Right:
Inspect your ski pedestals carefully to determine the left and right ski. The high side of the pedestal cross tube is always placed on the inside.

General Instructions For All Models

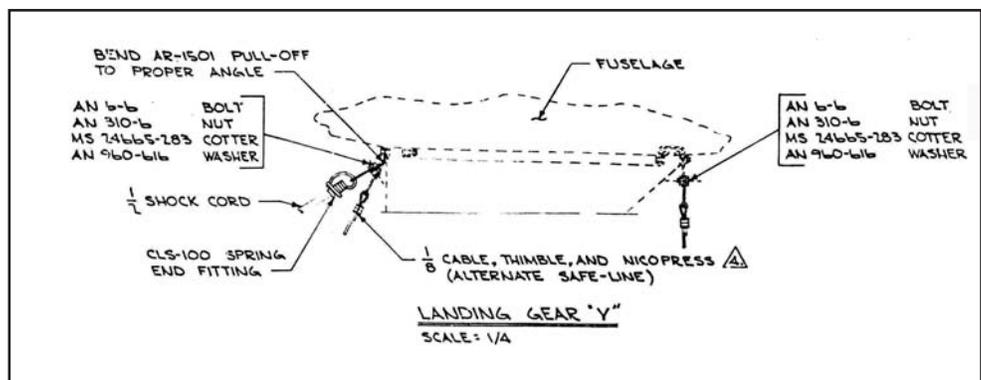
Instructions for installing pedestal rubber tube and sleeve:

1. Push rubber tube onto the steel sleeve as far as it will go.
2. Warm the rubber tube to approximately 100° F.
3. Insert the rubber into the ski pedestal.
Press the cub washer firmly in place.
4. Place ski assembly on the axle.
All component parts should be kept in order as per the diagram above.
5. Tighten the axle nut until ski nose will just maintain a horizontal position.
6. Safety the axle nut, then attach cable and shock cord rigging.



NOTE: If, after service, the ski tends to develop play, or turn on the rubber tube, adjust axle nut as in step 5 above.

NOTE: To compensate for the camber of the landing gear, Federal Skis are made Left and Right. The high side of the pedestal cross tube must be placed on the inside of the gear.

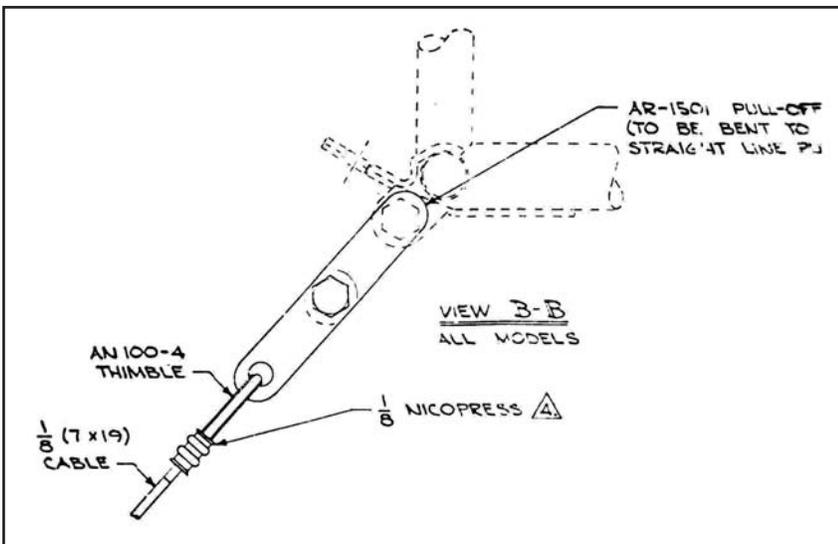
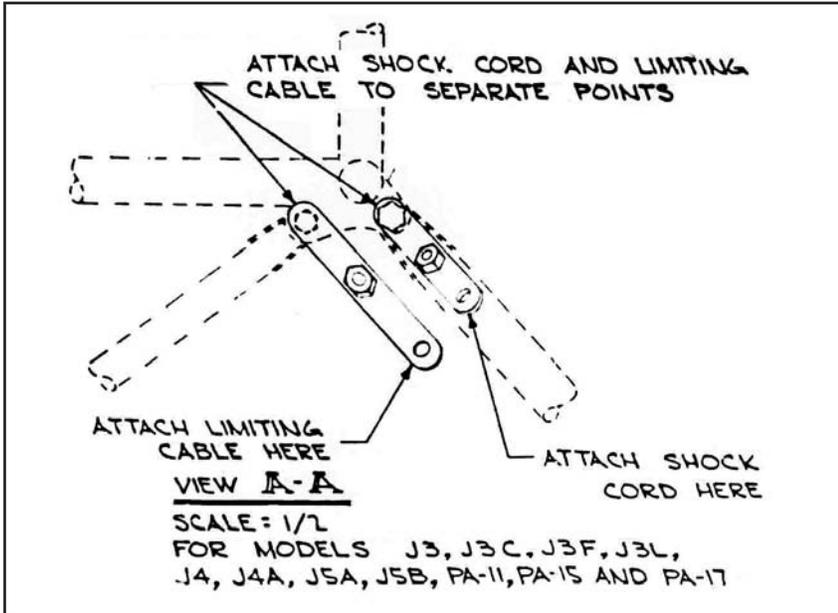


1. Length of shock cord is to provide tension against rear cable with gear fully extended.
2. Length of rear cable is to allow a plus (+) 4° angle of ski incidence, measured on the top of the channel when the gear is fully extended.
3. Length of front cable is to allow a negative (-) 20° angle of incidence with the gear fully extended. ((-) 15° on J-4's)

fasteners. Insert the cord through the small end of the cone. Apply the crimp locking ring about 1/2" from the end of the cord, pull the cord back until the locking ring contacts the inside of the hook/fastener. The cut ends of the cord should then be sealed by dipping in rubber cement or wrapped in tape to prevent unraveling. Wrap in tape before cutting.

Editor's Note:

- 1.) Shock cord must be of a length to provide suitable tension against the rear cable to properly restrain the ski from pitching in flight. (A pre-stretch of approximately 2" is generally satisfactory).
- 2.) Make sure cable is attached firmly to the ski using attach fitting AR-1501.
- 3.) Use hose clamps or electrical tape to retain and cover exposed brake pucks.



Ski fittings properly attached to the Cub landing gear.

Shock Cord Hook/Fasteners, new fresh shock cord and cable can be acquired from several different aircraft suppliers. We noted that both Aircraft Spruce and Wag Aero sell these items. For Cubs, it is recommended that 1/8" cable and 1/2" shock cord be used.

When installing the fasteners or spring hooks to the cord, first note that each hook also has a separate locking ring. These cone spring hooks and locking rings are used as terminal