

## HOW-TO-DO-IT

# PORTABLE NICOPRESS SQUEEZE

by KALMAN E. SAUFNAUER

Several years ago a cable splice was required in a hard to reach location. Removing fairleads to pull the cable out was impossible without damaging the fabric finish. Consequently, it was desired to perform the splicing from within the aircraft. The portable squeezer shown was developed because regular Nicopress tools require a large unobstructed area for operation.

Aircraft owners with limited requirement for Nicopress work may not wish to lay out the cash required for two or three sizes of regular tools, even at surplus prices; many A & P mechanics have only the 1/8-inch size, if any. (The writer was one of these cheapskates who borrowed from a larger shop.)

It is suggested that a 3/4 x 1-inch bar of steel be used although 3/4 square would be enough since the Nicopress sleeve is copper with Cadmium plating. Cold rolled is probably satisfactory; however, the

one shown was of 4130 C.M. The mating faces must be smooth and straight. A pair of bars should be clamped tightly and drilled for the 3/8-inch bolts which are then installed and tightened. These provide alignment dowels for further drilling and are later used for squeezing. When all four bolts are securely tightened, you may carefully drill pilot holes between the mating faces of the bars. Use of a center punch and rather heavy hammer may be required to prevent drill chipping or wandering when starting the pilot hole. A machinist's center drill will facilitate hole starting. Use a smooth running drill press for all operations because the squeeze holes must not be "egged" oversize by a sloppy bearing or imperfect drill bit. Drill these holes 1/16" undersize then slowly and carefully drill to size with a sharp drill. Check hole size with drill shank. If a reamer is not available, wrap emery cloth around a rod

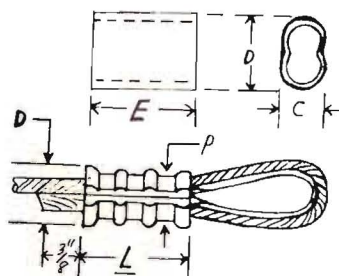
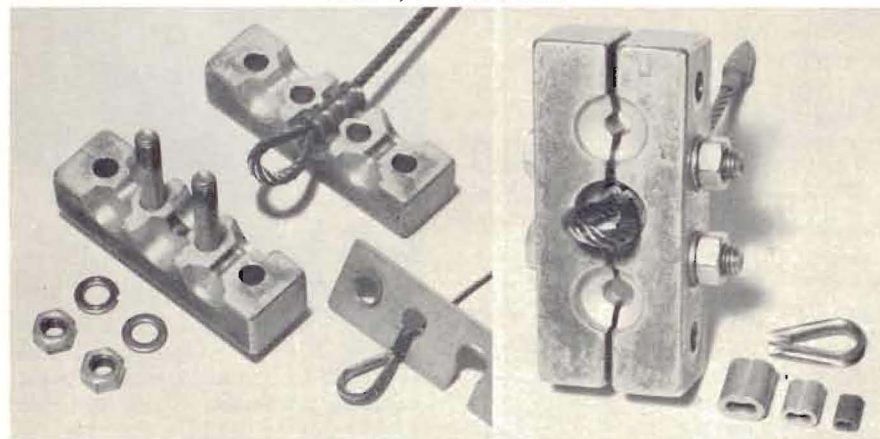
or rat tail file and polish to size. (The rod may be slit at one end to hold the emery cloth which is inserted in the slot then wrapped around it. A drill motor is used to rotate the rod. This makes a very small diameter sanding drum.) The drawing gives drill sizes and all dimensions. For those whose chuck cannot use a 5/8" drill it is suggested you use a 1/2" drill, then file a slot in one side of each bar to clear the 1/8" cable eye, using a 1/4" rat tail file. Use emery cloth to lightly round all edges in holes.

Only two bolts are needed to squeeze a cable sleeve. Bolts should be hardened, as even AN bolts can only be used a few times on 1/8" cable before the threads gall. Use of a thread lubricant is advisable. Hardened bolts may be found in auto connecting rods. Bolts must not be threaded within 1/8" of the mating faces of the steel bars because the shank is needed as an alignment dowel. Short rods or dowels may be used for alignment when using a vice to squeeze. One-eight-inch cable should have three squeezes, 3/32" should be squeezed in two places while once will suffice on 1/16" cable. When making multiple squeezes, start at cable end and work toward the eye. The sleeve grows lengthwise so will tighten the eye around the thimble which, of course,

Fig. 1. View showing finished squeeze and gauge. The 1/8" cable in the squeeze has been rotated 90 degrees to better show correct appearance of finished sleeve. Correct use of gauge is shown on 1/16" cable.

Fig. 2. View of cable and sleeve being correctly squeezed. Notice relationship of sleeve to tool. The three sizes of sleeves are shown with a 1/8" thimble. The 1/16" and 3/32" cable sizes use a 3/32" thimble.

Photos by Photo Arts Studio



CABLE SIZE	BEFORE COMPRESSION			AFTER COMP.	
	C	D	E ± 1/16	L APPROX.	P
1/16	.170" ± .006"	.251" ± .008"	3/8	7/16	.190" ± .015"
3/32	.226" ± .008"	.372" ± .008"	7/16	1/2	.255" ± .025"
1/8	.329" ± .008"	.487" ± .009"	9/16	3/4	.343" ± .033"
5/32	.360" ± .008"	.589" ± .010"	5/8	7/8	.380" ± .030"

