

DESIGN AND USE OF TRIPODS
AS OSPREY NEST PLATFORMS

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Nesting platforms have become a standard technique for Osprey (Pandion haliaetus) management. Use of such platforms has been reviewed and updated by Olendorff, et al. (1980). They note that the earliest published reference to use of Osprey nest platforms was in 1964. A number of studies has shown that these platforms are readily accepted and may produce more young than nests built on natural sites (Rhodes, 1977).

Nest platforms, as currently used, are of a rather standard design. A pressure treated utility pole is set in the ground and a horizontal nest platform is fastened to the top of the pole. Length of pole may be varied to raise the platform so it is at, or above, the level of surrounding vegetation.

Here on Sanibel George Campbell and Mark Westall have organized efforts to install 35 of these standard nest platforms. Osprey have readily accepted these platforms and nesting success has been significantly increased (Phillips, et al., 1983).

Many potential nesting territories in this area of Florida are not suitable for installation of standard pole-type platforms. Some areas are too wet to allow digging to set the pole; some areas are so remote that carrying a heavy pole to the site is not feasible; and some areas have ground too soft to support the pole or digging equipment.

For these special sites the Sanibel-Captiva Conservation Foundation and The International Osprey Foundation have cooperated to design and erect tripod-type nesting platforms. The materials for these structures are light and can be easily carried. The components can even be carried to the site and assembled in place. Ours is not the first use of tripods (Postapulsky, 1977, 1978), but we believe our design is better than any we know of.

The purpose of this paper is to describe the design, construction, and use of these tripods. The legs are 24 feet long (Figure 1). This places the bottom of the nest about 19 feet above ground level.

Materials:

- 9 pressure treated 2 X 4's 12 feet
- 3 pressure treated 2 X 4's 8 feet
- 3 pressure treated 2 X 4's 4 feet (for stakes)
- 3 screw anchors 30 inches X 4 inches (mobile home anchors)
- 3 lag bolts $\frac{1}{2}$ inch X 4 inches
- 6 pieces $\frac{5}{8}$ inch waterproof plywood 2 $\frac{3}{4}$ X 16 inches (for splice plates)
- 2 tubes latex glue (such as liquid nails)
- 1 piece 2 inch galvanized pipe 4 inches long
- 3 pieces $\frac{1}{2}$ inch threaded rod, each $4\frac{1}{2}$ inches long
- 6 hex nuts $\frac{1}{2}$ inch
- 3 washers $\frac{1}{2}$ inch
- 1 piece chain-link fence about 2 feet by 2 feet
- 6 D and 12 D galvanized nails

Assembly:

We assembled the legs and carried them to the installation site. Two men were able to carry each assembled leg without major difficulty even in wet mucky ground. However, it would be quite easy to carry the pieces and assemble the legs at the site.

The 2 X 4's are fastened together with spikes and with latex glue. Joints where the 2 X 4's butt together are staggered and strengthened with splice plates made of a strip of waterproof plywood glued and nailed across the joint.

After assembly at the site the legs are hinged together with a "spider" hinge made of a short piece of 2 inch pipe which is drilled and tapped to receive 3 pieces of $\frac{1}{2}$ inch threaded rod (Figure 2). Each leg is drilled with a $\frac{9}{16}$ inch hole to receive one of the threaded rods. Each leg thus pivots about a rod in a plane at 90 degrees to the axis of the rod.

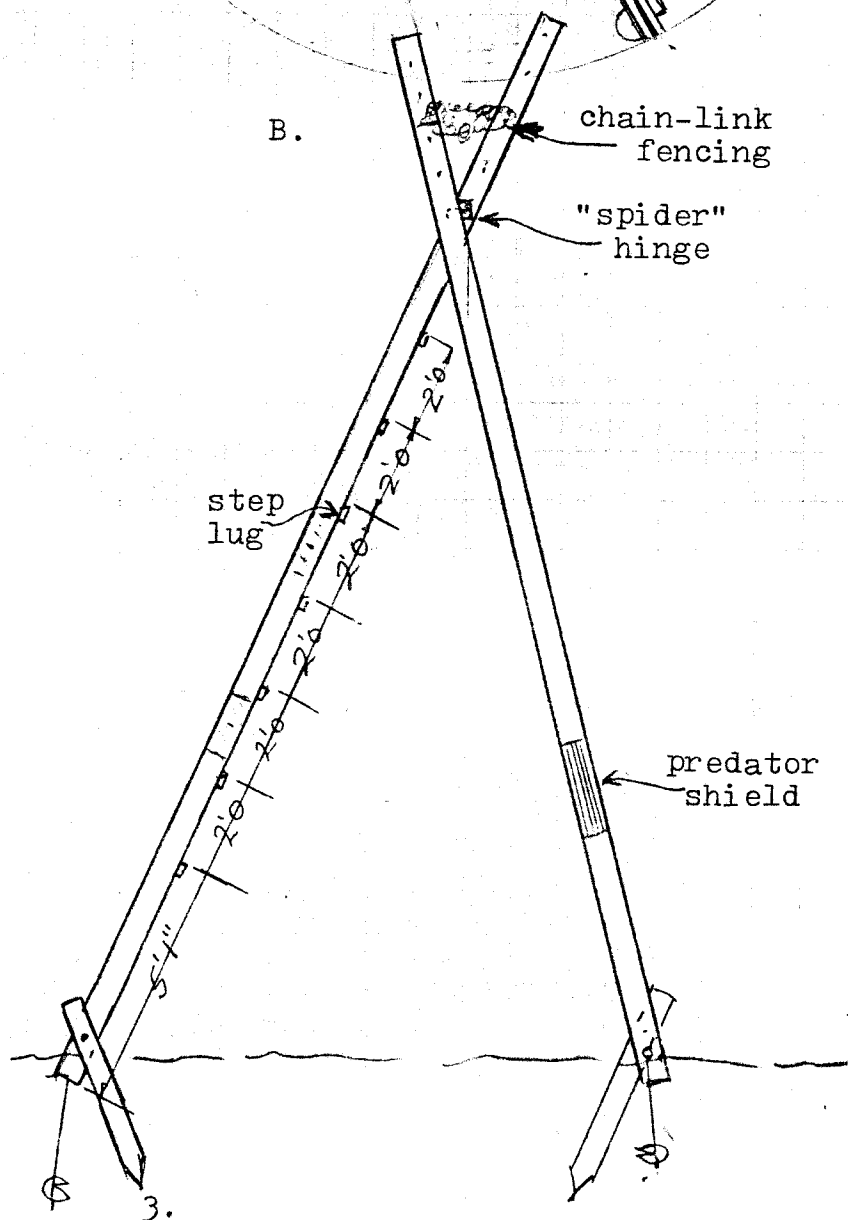
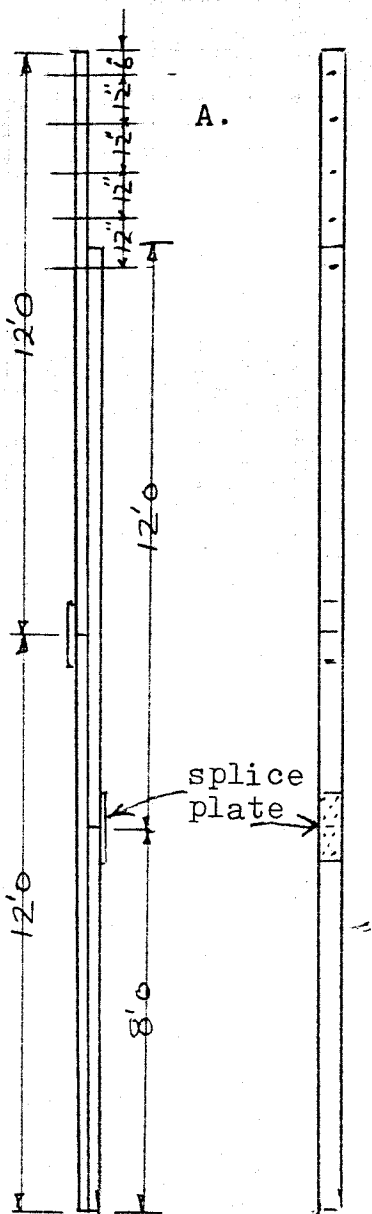
Nesting activities are to be monitored and young are to be banded on our tripods. Therefore, we installed portable and removable steps on one leg of the tripod. This required placing 7 "step lugs" (1 X 2 X 3 inch wood blocks) on the under side of one leg (Figure 1). Design of the steps is shown in Figure 3. The top step is made wide enough to allow placement of both feet

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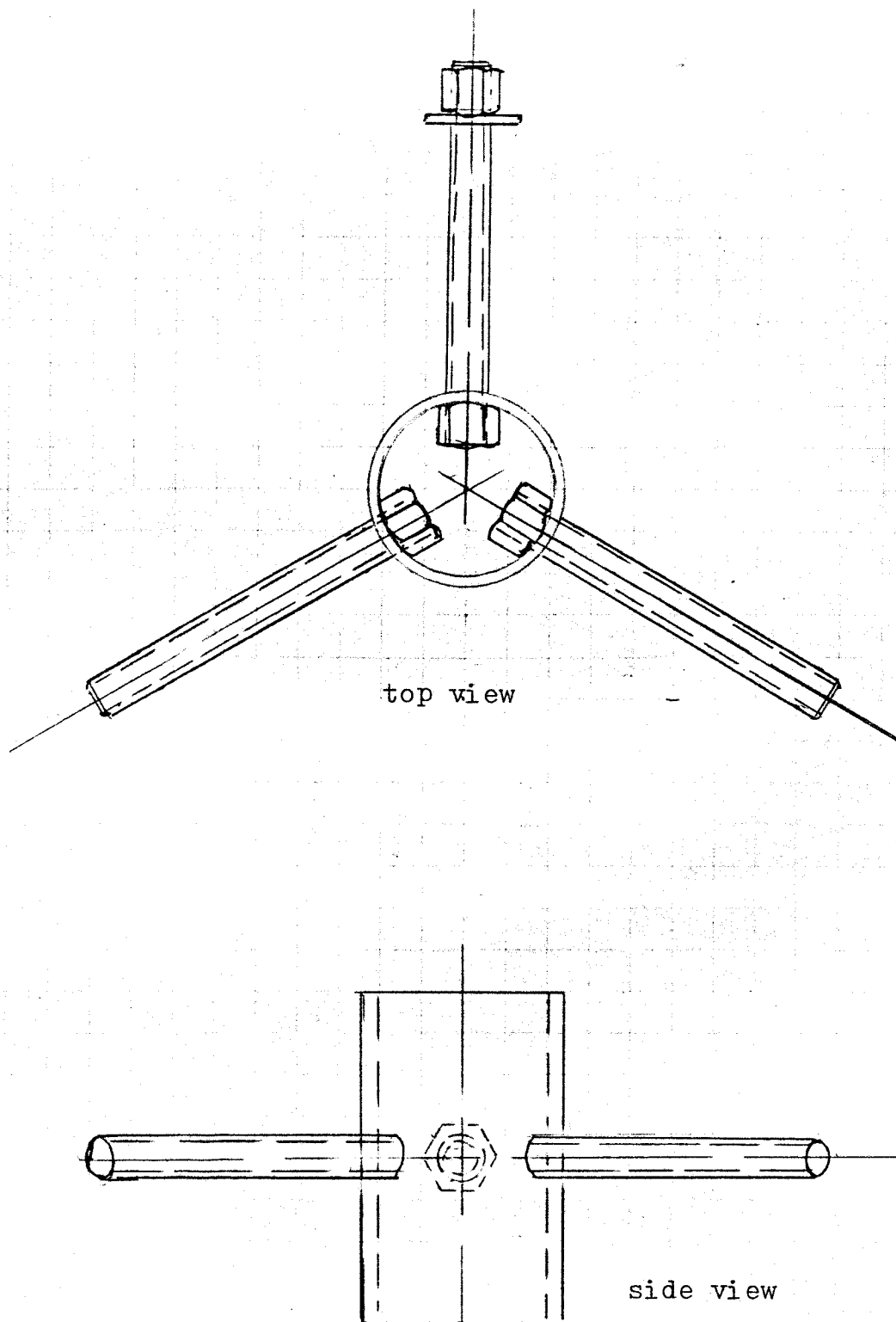


Figure 2. Details of "spider" hinge. Materials are a 4 inch piece of 2 inch galvanized pipe, threaded to receive three $4\frac{1}{2}$ inch pieces of $\frac{1}{2}$ inch threaded rod. Rods are fixed firmly in place by jamming nuts inside the pipe.

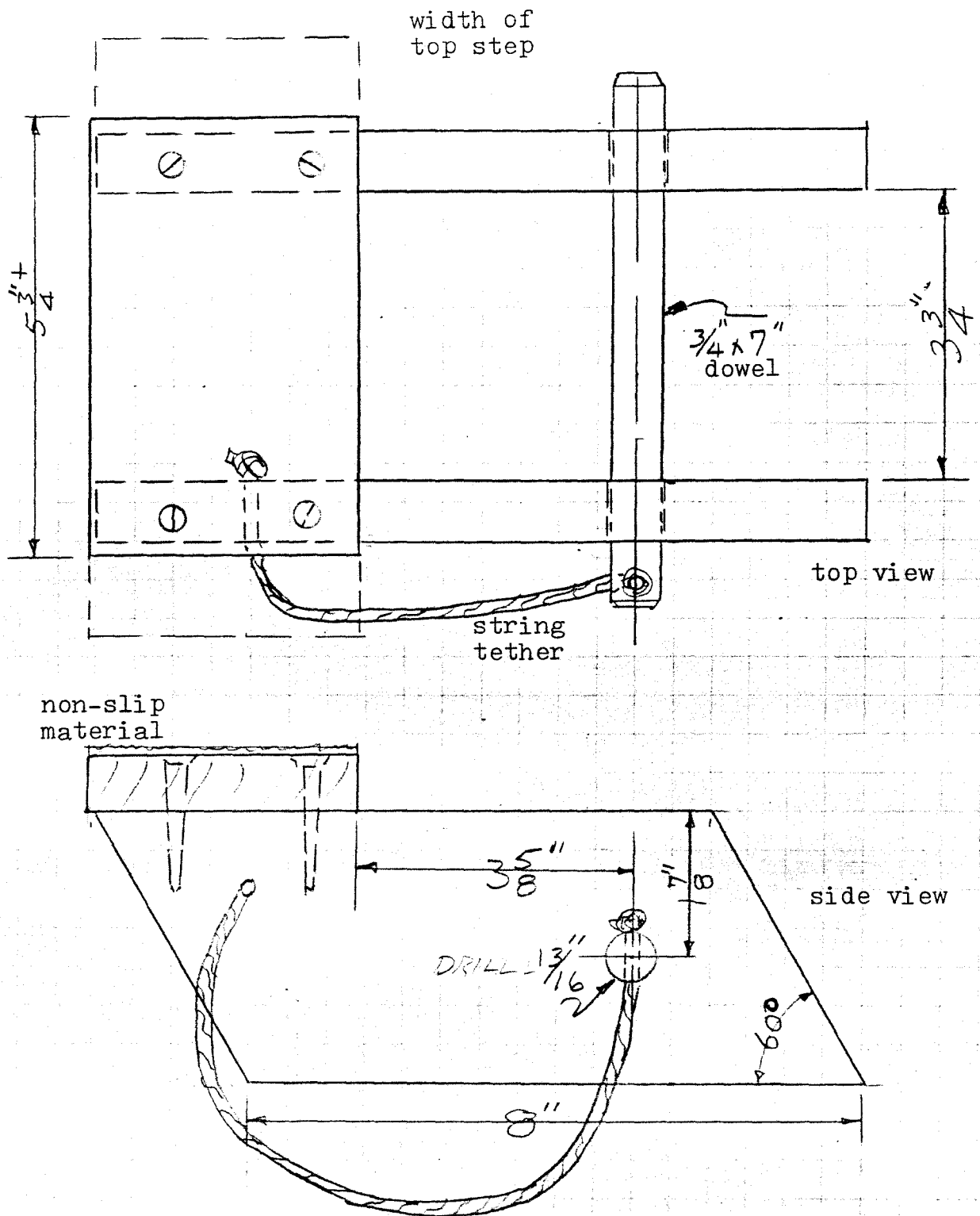


Figure 3. Details of construction of removable steps. Materials are 1 X 4 inch stock; parts are glued and screwed together; string tether keeps dowel with step. Step lugs on one leg of tripod keep step in place (Figure 1). Top step is wider to allow two feet on step while investigator is at the nest for banding, etc. Non-slip material used on top step for security.

while the investigator is at nest level.

Erection:

Erection of the tripod requires some planning and a certain amount of muscle. We used the muscles of 10 men, but believe that the job could be more easily completed if a light block and tackle were used.

Planning is needed for deployment of the three legs before the structure is elevated. Unless the legs are oriented properly while still on the ground the legs will not spread and the tripod can not be raised. The following steps should be followed:

1. Fasten the legs to the "spider" hinge;
2. View the assembly from the butt end, place one threaded rod in the 1 o'clock position, one in the 5 o'clock position, and the third in the 9 o'clock position;
3. Move the butt of the 1 o'clock leg to the right about 5 feet, move the butt of the 5 o'clock leg to the left about 5 feet;
4. Tie the butts of these two legs down so they will not slide;
5. Pick up the butt of the 9 o'clock leg and use it to help raise the top of the tripod.

We used a rope to help raise the top of the tripod. This rope was passed over a 10 foot shear pole so the lift was at about 45 degrees from the horizontal. This rope could have been hoisted with a block and tackle to give greater lifting power. After erection a small piece of chain-link fence was fastened above the "spider" hinge to provide a firm base for nest materials.

Stabilizing:

To fasten the tripod firmly to the ground we drove a pressure treated stake into the ground and spiked the stake to the leg. In addition for each leg we used a screw anchor like those used as tie-downs for mobile homes. These were bolted to the leg with a 4 inch lag bolt.

Protection:

Sheet aluminum was installed around each tripod leg to prevent raccoons from climbing to the nest.

Cost:

The cost of materials for one tripod was less than \$70. We kept no records of amount of time involved in assembly or

erection.

Osprey Response:

In November 1982 three of these tripods were installed on Sanibel. The area chosen was one where the majority of recent nesting attempts had failed. Principal reason for the poor success was that dead mangrove used to support the nests were so weak and decayed that they broke under the weight of the nest before the end of the season. Westall (1983) informs us that in each of the previous 4 years this area of about 60 acres had 3 or 4 occupied nests. However, in that 4-year period only 6 eggs hatched and only 1 young fledged.

Acceptance of the tripods in this area was almost immediate. One pair started nest construction within a few hours of erection of the tripod. They built a very large nest and successfully reared 2 young. The second tripod was accepted after a few days, but that pair built slowly, eventually laid two eggs, but those eggs did not hatch probably because of the late start in the season. The third tripod was used only as a perch for several months. In March a small nest was built, but no eggs are expected so late in the season.

We are confirmed optimists ! The sample is small, but this years production is double that of the previous 4 years. Therefore, we expect at least 6 fledglings next season !

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