

THE ZAP NET: AN ELASTIC-PROPELLED VARIATION OF  
THE CANNON NET

L.G. Underhill & G.D. Underhill

The zap net (Fig. 1 on page 23) is an effective method of catching birds that sit on the ground. It was first described as a modification of a clap net (Wilkinson 1978), but it seems to us that it should be placed in the genus cannon nets. There is also a description (in Dutch) by Koopman (1985). It has been used to trap Redshanks *Tringa totanus* (Summers *et al.* in press) and Purple Sandpipers *Calidris maritima* (Rae *et al.* 1986) at the nest, and by the authors to trap doves, starlings, sparrows and gulls at baited sites and to catch roosting Common Terns *Sterna hirundo* on the beach. Mike Fraser has caught Sanderlings *Calidris alba* feeding in washed up kelp. Peter Milstein is experimenting (successfully) with a zap net to catch Egyptian Geese *Alopochen aegyptiacus*. It thus has potential for trapping ground-nesting birds at the nest, birds that roost on flat ground and birds that can be baited to feed on the ground.

Advantages over cannon nets include: (1) lightness, giving portability (a complete set of equipment weighs 2 kg); (2) simplicity of operation; (3) safety (no explosives); (4) speed (the action is fast enough to catch birds as alert as European Starlings *Sturnus vulgaris* and (4) silence. However, the maximum size of the net is limited. Presently, our largest net is 5 m x 3 m, but a 7 m x 4 m net is under construction.

COMPONENTS

1. NET

Lightweight nylon fishing net is a suitable material. The mesh size (defined as the length of a diagonal when it is pulled flat) depends on the species being caught. A company in Cape Town, for example, makes nets with mesh sizes which include 30 mm, 48 mm, 52 mm and 110 mm. As a guide to mesh size, note that Cape Sparrows *Passer melanurus* occasionally escape through the 48 mm mesh. Peter Milstein's Egyptian Goose net has a 110 mm mesh size. If the mesh size is too small, the birds can walk around under the net and escape. The net must be edged all round with thin (5 mm) cord. The cord needs to be some 10 % shorter than the perimeter of the net, and sewn along the edges of the net to allow for an evenly distributed 'bag' to accommodate the birds caught

underneath it. The cord takes all the strain when the net is 'fired'. Four 20-30 mm steel rings should be sewn into the corners of the net. The pair at the two leading corners need to be particularly securely sewn in.

2. TWO POLES

These may be metal or dowels about 1 - 1,2 m in length. Each pole needs a hole for the 'firing pin' about 30 cm from an end. The holes are drilled at 45° to the poles.

3. TWO LENGTHS OF ELASTIC

Surgical tubing (very expensive) or 5 cm wide strips of rubber cut from 'heavy duty' vehicle tubes (old ones obtained from tyre dealers work fine) propel the net. Koopman (1985) recommends the rubber cord used to secure vehicle loads. The length should be equal to the width of the net, and they should be capable of being stretched to twice that length. Another four steel rings are required - one at each end of the rubbers. We attach them by looping back the end of the rubber over the ring, and securing the loop with a hose clamp tightened onto a 2 cm length of dowel.

4. PEGS

Two steel pegs are used to anchor the back edge of the net and two for the rubbers. A few smaller pegs are useful to peg down the back of the net.

5. A ROLL OF TWINE

Up to 50 m of pullstring, doubled for the last 6 m to form a 'Y' (Fig. 1), with a nail or steel 'firing pin' at each end. Heavy duty fishing line is particularly good because it has little elasticity.

6. TWO 'S' HOOKS

Two 15 cm lengths of heavy gauge steel wire, bent into an 'S' shape, are used to attach the rubbers to the leading edge of the net.

SETTING UP

Fig. 1 shows how the net is set up, and Fig. 2 how the firing mechanism works. Ultimately each net has to be

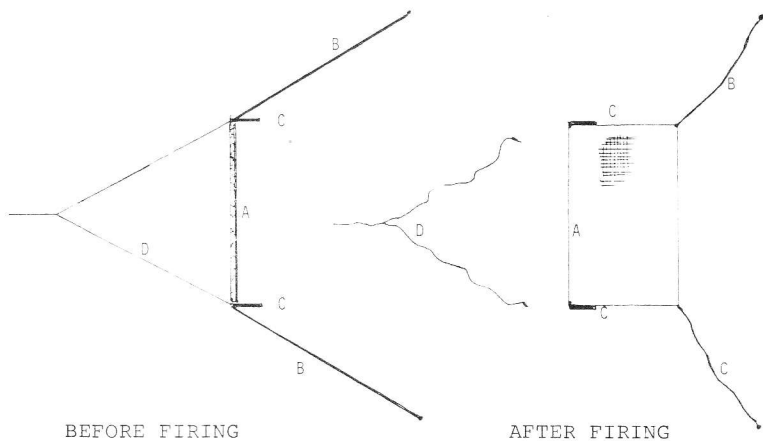


FIGURE 1

OVERALL CONFIGURATION BEFORE AND AFTER FIRING.  
 A = NET, B = RUBBER, C = POLES, D = PULLSTRING

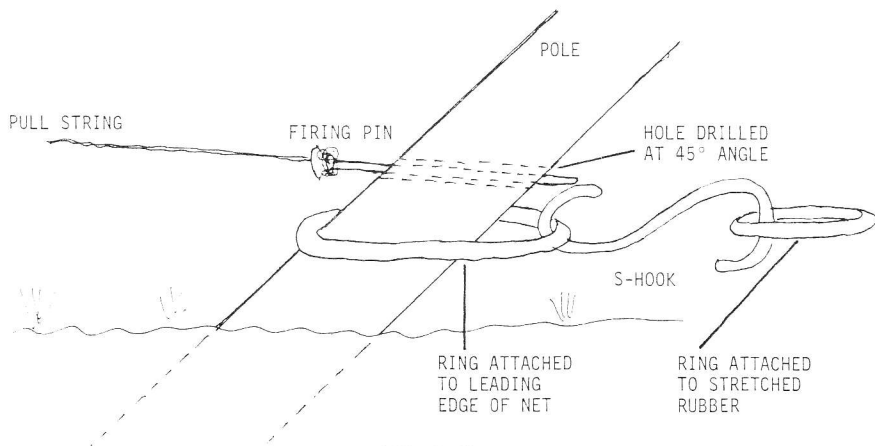


FIGURE 2

DETAIL OF FIRING MECHANISM. THE RINGS ARE ATTACHED TO THE NET AND RUBBER RESPECTIVELY. WHEN THE FIRING PIN IS REMOVED THE RUBBER PULLS THE NET TO THE TOP OF THE POLE AND STRETCHES IT OUT OVER THE TARGET AREA

experimented with to find the best angles for the poles and the rubbers. To operate on a sandy beach (or any other substrate which is not firm enough to hold the poles in), it is necessary to fasten blocks to the ends of the poles and to dig them in.

REFERENCES:

Koopman, K. 1985. Een slagnet zonder lurven. Op Het Vinketouw 47: 11-14.

Summers, R.W., Nicoll, M., Underhill, L.G. & Petersen, A. in press. Methods for estimating the percentages of Icelandic and British Redshanks in mixed populations wintering on British coasts. Bird Study.

Rae, R., Nicholl, M. & Summers, R.W. 1986. The distribution of Hardangervidda Purple Sandpipers outwith the breeding season. Scottish Birds 14: 68-73.

Wilkinson, P. 1978. A clap-net modification. Ringers' Bulletin 5: 35.

L.G. Underhill, Department of Mathematical Statistics,  
University of Cape Town, RONDEBOSCH, 7700.

G.D. Underhill, 12 Roseberry Road, MOWBRAY, 7700

- o O o -