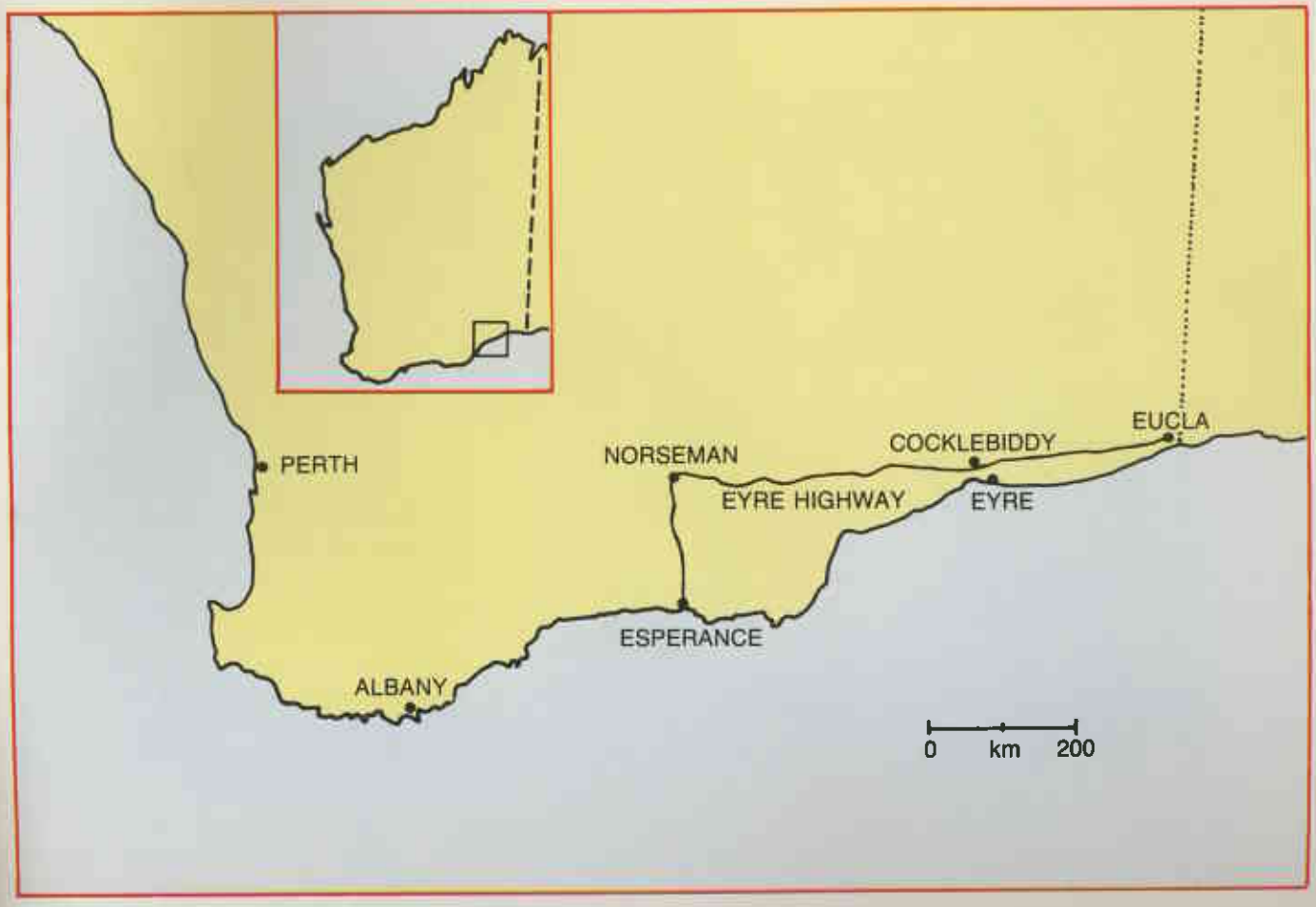
Mobile Cannon Netting for Waders at Eyre Bird Observatory

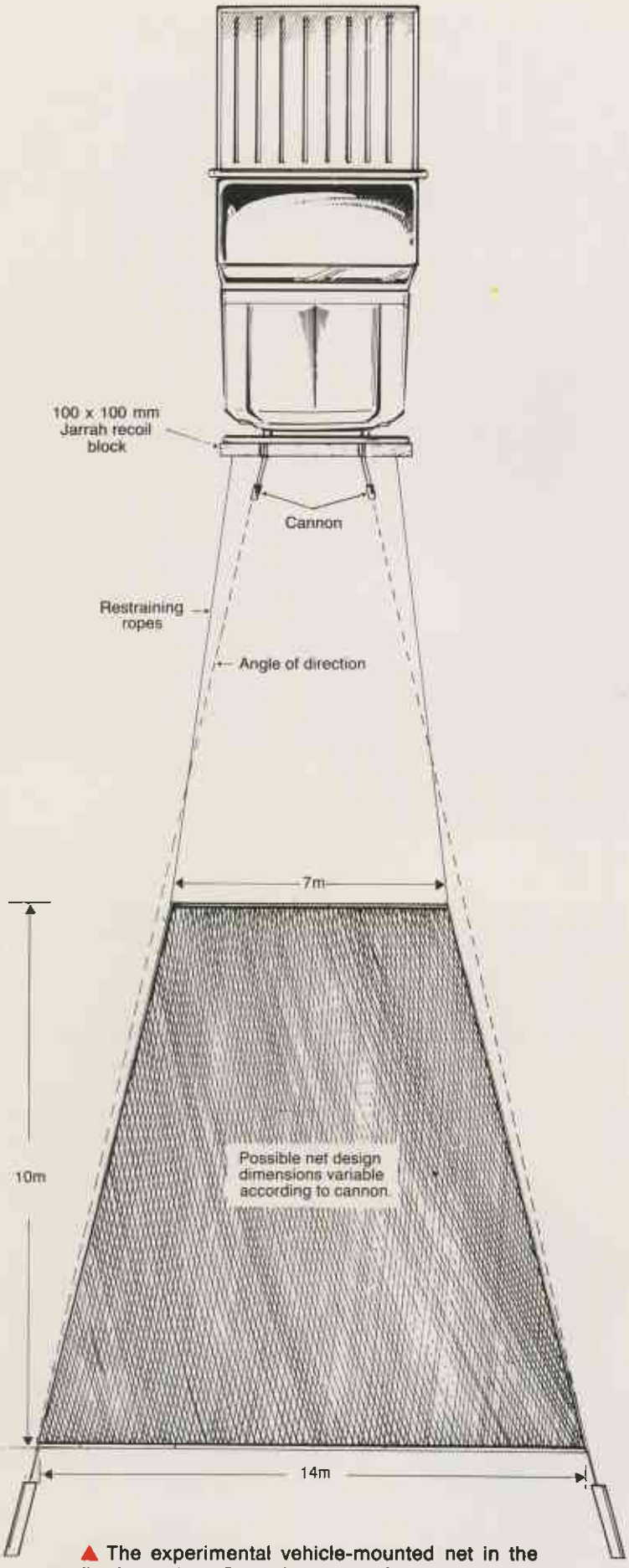
by Grant Pearson

Eyre Bird Observatory lies 32km from Cocklebiddy along the Great Australian Bight and only 1km from the sea. Migratory waders make their way along the coast on their annual migration to or from the nothern hemisphere and are the subject of a study by the Warden at the Bird Observatory, Mr Peter Congreve.

The wader numbers peak in November with a considerable diversity of species making excellent subjects for a wader identification course held each year by the R.A.O.U. (Royal Australasian Ornithologists Union). In fact 19 species were recorded during the November 1982 course illustrating the unusual, if not unique, nature of the ocean front wader habitat at Eyre. Among the birds sighted were

Grey-tailed Tattler were often sighted in small numbers near the Observatory. (Photo G.Pearson.)





▲ The experimental vehicle-mounted net in the fired position. Opposite page, shows the close up detail of cannon apparatus ready for use.

Mongolian Plover, Grey-tailed Tattler, Red Knot, Great Knot, Sandlering, Sharp-tailed Sandpiper and Pectoral Sandpiper. The Oriental Plover has also been recorded at Eyre.

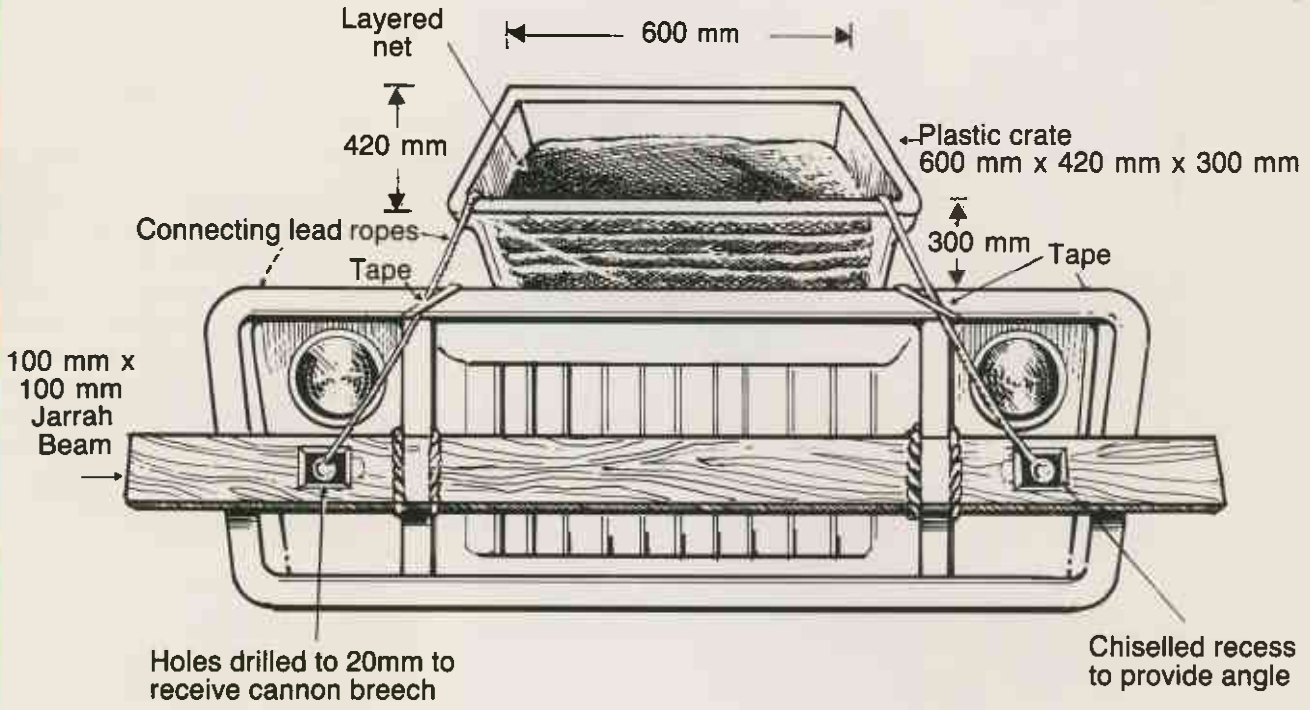
In addition to migratory wader counts carried out by Peter, he is also studying the biology and movements of the Red-capped Plover, a non-migratory species. With this in mind and the need to trap waders during the November 1982 wader identification course I decided to modify the normal cannon net system to take advantage of beach conditions peculiar to those near Twilight Cove about 10km west of the observatory.

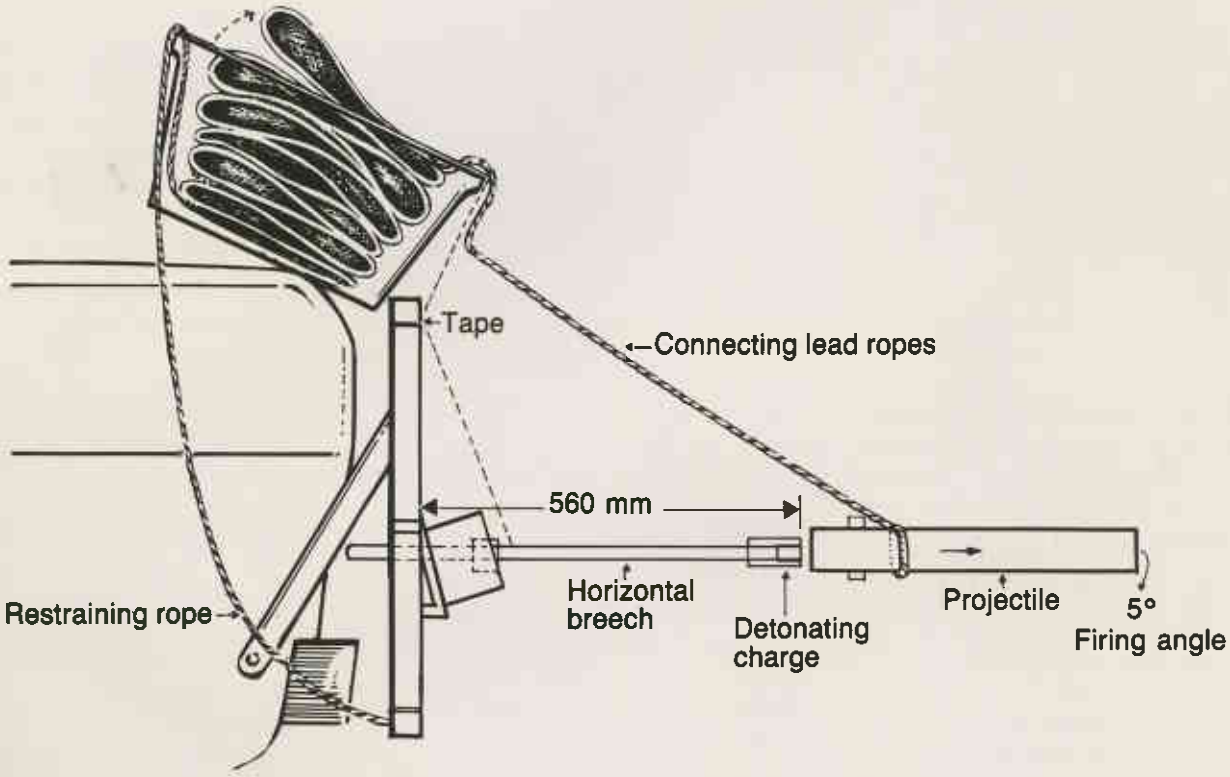
On several occasions while driving the Ford F100 4 x 4 survey vehicle along the beach at the water's edge, waders would wait until the vehicle was within 6-8m of them before taking flight. This is the exact range of the standard cannon net employed on netting birds in Perth and in the North-West.

The aim of this article then is to describe the materials and technique used to trap single and small groups of migratory and non-migratory waders at the Eyre Bird Observatory. It will also provide some basic information on the construction and operation of cannon nets as used in the North-West which has attracted considerable publicity in recent years.

Under normal circumstances a wader net is set at a known roost or place where waders can be expected to gather at periods of high tide. However there are several conditions at Eyre which encouraged the development of a small portable (i.e. vehicle mounted) cannon net. Not the least of these factors is the lack of manpower available to the Warden for setting up and firing a large net. By comparison a vehicle mounted net can be carried during surveys and used instantly if the opportunity arises with only one helper or none if necessary - he need only tailor his catch according to the amount of help available.

Secondly if a suitably effective system could be developed it would


Layered net
600 mm
420 mm
Plastic crate
600 mm x 420 mm x 300 mm
Connecting lead ropes
Tape
300 mm
Tape
100 mm x 100 mm Jarrah Beam
Holes drilled to 20mm to receive cannon breech
Chiselled recess to provide angle


Tape
Connecting lead ropes
560 mm
Restraining rope
Horizontal breech
Detonating charge
Projectile
5°
Firing angle

▲ Oriental Plover. This bird is one of the less common species recorded at Eyre in recent years. (Photo G.Pearson.)

▲ The cannon net loaded and ready to fire in early prototype. (Photo G.Pearson.)

make the time spent setting cannon and nets more acceptable considering the small catches available even using full size stationary nets.

Single adult Red-capped Plover could also be quickly and simply trapped thus complementing the work done on juvenile non-flying birds which to date are the only waders easily catchable along the beach front.

As the migratory waders rarely linger at Eyre for more than a few days at a time it is difficult to predict where to set a net. Naturally should there be sufficient helpers to "twinkle birds" and help remove them (i.e. shepherd them into the target area) a large set net will be successful.

The method used to fire a net from a vehicle was rough and simple but effective. Further work is needed to develop a net more suited to the output of two cannons instead of the usual three. It should also be constructed from a close mesh net such as 20mm 6-ply which will not snag easily and will flow evenly from the plastic holding crate when fired.

The cannons used were of the improved Dill-Thornsberry type each taking 6 gram charge of F-grade black powder and fired electrically. They were mounted through a section of 100mm x 100mm pine which, when it shattered, was replaced with jarrah (125mm x 100mm).

The timber was fixed to the bull bar close to the supports for rigidity. Twenty mm holes were drilled through the timber to provide 5° elevation above the horizontal and at such an angle that the projectile would fully extend the net at the maximum length of the recoil ropes. Although the elevation would vary with the terrain the vehicle would usually be facing along the flat sandy beach parallel to the water's edge and relatively horizontal.

The net was contained in a plastic fish box tilted forward and mounted on the vehicle's bonnet. The restraining ropes were tied to the bull bar as low down as possible. The net was loaded into the box starting from the rear and folded in concertina fashion. The lead ropes were taped to the top of the bull bar and attached to the projectile.

Firing was carried out using a 30 shot firer and the wiring was connected in series. A range finder was made from pieces of insulating tape fixed to the windscreen and placed to line up with the lowered sunvisor and the top of the bull bar.

In summary the results of the tests indicate that the system will work. However, it is evident that the following points will affect the success rate of trapping attempts:

a) The net should be fired with the wind to achieve the optimum spread.
b) The vehicle used must be quiet and as unobtrusive as possible. Movements in the cab can be enough to alarm the birds.
c) A completely clean net is essential to allow it to flow evenly from the container when fired.

My thanks go to Warren Low Choy, a course participant, and to Peter Congreve, the Warden, for their help in the design and construction of the assembly.