

13 Accommodation Facilities and Procedures

J. VINCENT

Introduction

The aim of this chapter is to outline some of the methods whereby captive wild animals may be adequately accommodated between the time that they are captured and the time that they are transported to their final destination. It must be emphasised here and now that the number of variations on the general theme are many, so that this chapter will deal primarily with the principles involved. A few basic designs will, however, be described.

It must furthermore be stated that the various procedures here outlined do not in any way pretend to be suitable for permanent housing of the animals concerned. They serve merely as temporary enclosures which provide the basic facilities. They will be described under the various categories of animals.

The assistance of Mr. W. D. Densham, of the Natal Parks Board, in the preparation of this contribution is gratefully acknowledged. So too is the permission of the Board itself to publish it, for it is their facilities upon which is based the bulk of the material contained herein.

Accommodation

1. Antelope

For the temporary accommodation of antelope, several types of holding pen are suitable, depending upon the duration for which the animals are to be kept prior to transportation.

In a previous chapter, the capture of wild ungulates in bushveld country has been des-

cribed. One of the techniques mentioned involves the use of plastic "bomas", which are suitable for most species, including zebras (*Equus burchelli*). It has been found that these bomas, constructed as they are of two and a half metre wide plastic, stretched vertically between two cables, are quite adequate for holding these species. Being opaque, the plastic appears to the animals as a solid barrier, albeit very flimsy. The time for which animals may thus be kept is limited more by available food and water than anything else, although usually the plastic will be required elsewhere, and it is more economical to remove them as soon as possible. Nevertheless, it is possible to keep animals in these plastic bomas for considerable periods, provided they cannot see through it anywhere, for instance through a gap.

Field "bomas" such as this require no reinforcing in the way of wire or netting, although this method has been used by recipients of animals in conjunction with a fence, merely to accustom them to the new surroundings for a day or two after arrival.

Of the permanent type of structure, two types will be described to illustrate some of the principles involved in the accommodation of animals.

The first of these has been found suitable for the holding of some of the larger species of antelope, such as wildebeest (*Connochaetes taurinus*), waterbuck (*Kobus ellipsiprymnus*) and kudu (*Tragelaphus strepsiceros*), as well as zebra.

The structure is entirely of wood, with rough concrete or sandy floors and asbestos roof. The diagram shown in Fig. 24 depicts the loading and offloading area, and one of a row of pens in which the animals are kept, watered and fed. The back portion of the row of pens is roofed, and the front portion may be left open.

The pens are designed primarily to avoid handling of the animals at any stage, yet are also so laid out as to accustom the animals to all the preliminaries of loading for transport.

Animals are offloaded at point A, and pass through the area B, where they can also be presorted before being placed in their respective pens. The design is such that they

can only go one way, and once in the back passage (C) are unable to turn round. The doors at point A, when open, extend across the concrete apron along the front, and guide the animals into area B or "vestibule".

In order to clean the pens and replenish food, which is done daily after the initial settling down period, the doors into the back passage (C) are opened in turn and the occupants driven slowly towards the loading area where they stand until the work is complete. The doors to the pens are hinged in such a way that the animals, when leaving, can only go one way, and, when entering, are prevented from passing and are forced to enter the predetermined pen. This daily routine accustoms the animals to moving into the loading/off-

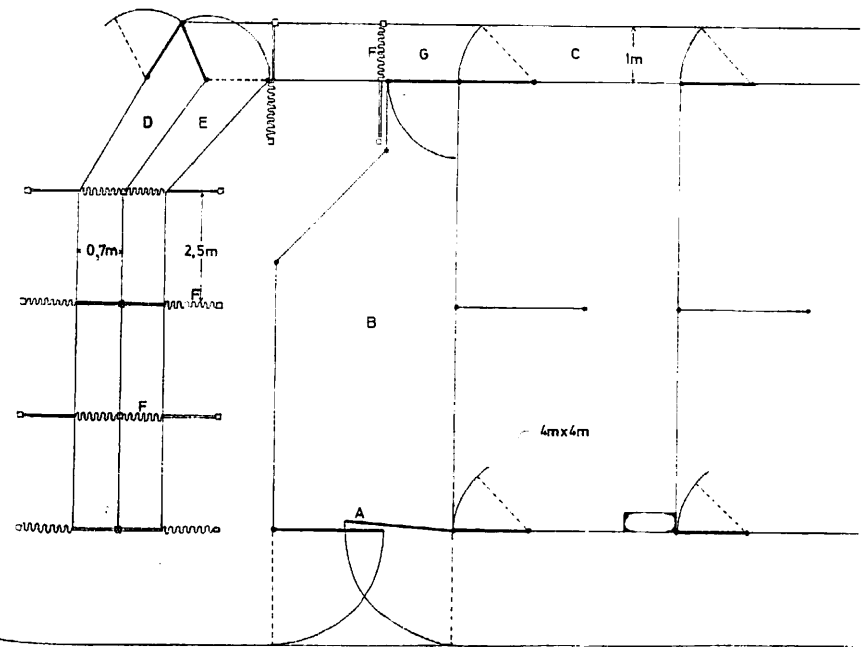


Fig. 24 Plan of loading/offloading area, together with one of a row of pens, used for the holding of larger species of antelopes

loading area so that, when ready for transportation, they can be loaded with the minimum of fuss.

Water is available from the concrete trough at the front of each pen, and the tap feeding each one is controlled from the outside. Ball valves can of course be used. A second trough for antelope pellets can also be fitted alongside. The water troughs should be at floor level and fitted with a drain hole for ease of cleaning. Those for pellets may be at any height up to about a metre. Lucerne or grass is fed either from racks, or directly from the floor.

When loading, the animals are directed into the races (D and E). These have sliding gates (F) (Fig. 24 and 25) at approximately 2.5 m intervals, which can be closed in succession as the animal moves down the race, thus preventing it from returning. A further advantage of this feature is that several animals can be in the same race at any one time, whilst loading is carried out individually.

The race can also be used as a crush, thus enabling any necessary treatment to be carried out on individuals, without the need for any means of mechanical or chemical restraint.

An additional feature used for loading is a "mobile" open ended crate, which can be placed at the exit of either race, and serving simply as an extension thereto. This crate is of course long enough to extend the full width of the concrete apron against which the lorry stands.

A weighing platform is an added facility that may be situated at point G.

For the smaller species, such as impala (*Aepyceros melampus*) and nyala (*Tragelaphus angasi*), a different design has been used. The materials used are the same as before, although the pens are completely roofed over, as impala tend to jump. For this reason too, the possibility of replacing some of the asbestos sheets with fibreglass to provide more light is probably impractical.

A plan of two of the small antelope pens is

shown in Fig. 26. As many such "units" of two pens as is necessary may be added.

It will be noted that the design is not as elaborate as in the case of the large antelope pens. Access is available both from the front and the back, and for cleaning purposes the interleading door between the two sections is closed whilst the animals are in the other section. Access for the animals between two adjacent pens can be effected by opening the front doors (A) leading into the "passage" (B).

The angled doors (C) serve to enable the animals to be driven into the passage for loading, although obviously in this case, this cannot be achieved one at a time, short of careful sorting to allow only one animal into the passage. Here again a "mobile" crate of the same width as the passage serves as an extension to the passage, across the concrete apron, for offloading or loading purposes (Fig. 27).

The door at the back is used simply to gain access to that portion of the pens and is only about one metre in height. It should be mentioned that there is no particular reason why any antelope may not be kept in either of the two types of pen design. Furthermore, the designs shown are not necessarily those most strongly recommended. They illustrate how careful and well thought out design can reduce labour, handling and disturbance, yet simplify all processes involved in holding wild animals. Other materials such as wire netting backed with reeds may be used, although maintenance on such structures, if permanent, would involve a good deal of work.

Whereas in both types of pen described above, the roof height need not exceed two or three metres, for giraffe, a slight modification in the form of a raised roof is necessary. Furthermore, the feeding and drinking troughs need to be placed quite high above ground level in order to avoid the possibility of the animals slipping on the floor.

In all types of pens, ventilation can be



Top: Gemsbuck and red hartebeest.
Left: Spotted hyena.



Top left: Tsessebe paralysed as a result of overstraining.
 Top right: Dopram produces marked respiratory stimulation.
 Bottom: Artificial cooling as preventative measure against heatstroke.

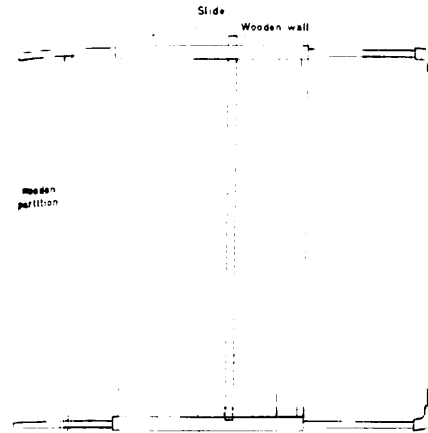


Fig. 25 Elevation of a sliding gate used to control the movement of animals at the time of loading

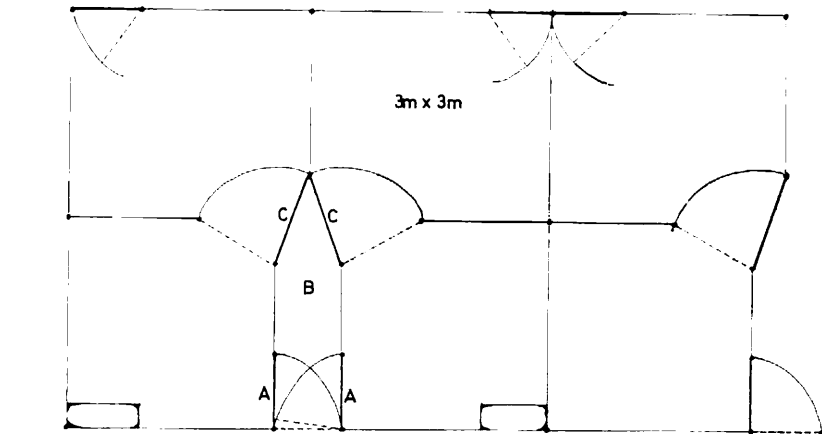


Fig. 26 Plan of a pair of pens which form a single unit in a row, used for holding some of the smaller species of antelope

provided either by spacing the timbers comprising the walls so as to leave narrow gaps (Fig. 27), or by leaving a space of conservative width between the walls and the roof.

A modification sometimes used is the construction of one half of each boma of wire netting lined with hessian. The latter can be removed gradually as and when the animals become accustomed to the presence of humans and to disturbance.

2. Rhinoceros

To all intents and purposes both the black rhinoceros (*Diceros bicornis*) and the square-lipped rhinoceros (*Ceratotherium simum*) are treated in the same fashion. For these species, the holding pens are specially designed, and their structure has evolved over a period of years, embodying some improvements.

Very briefly, the early rhino "bomas" consisted simply of logs cut from indigenous

trees (primarily the Tambootie - *Spirostachys africana* - because of its resistance to rot and termites), standing upright, and bedded into concrete in the form of a round pen. These bomas were strengthened by binding the logs together with wire and cable. The gate consisted of poles placed horizontally, one on top of another, the ends between two uprights (Fig. 29).

The only real changes that have taken place are that the "bush" poles have been replaced by untreated gum poles, and the bomas themselves have been equipped with an asbestos roof. Untreated poles are used because of the danger associated with creosote in aggravating any sores the animals may have, and its possible toxic effect in a confined space. The bomas were originally built circular to obviate the animals forcing their horns into corners and damaging themselves.

The width of each gate in the front of the

boma is the same as that of a transport crate, which can be placed in front of it. Normally only one animal is placed in each boma, although in the case of small white rhino, two may be put together, as they seem to settle down better in company. Black rhino should be housed individually.

A recent refinement, designed to cope with increased numbers of white rhino captured in Zululand, is the construction of "communal bomas". These are large paddocks attached to the back of a row of individual bomas, into which up to 10 or 12 animals may be held at any one time. After an initial period of two or three weeks these animals settle down sufficiently to be moved into individual bomas.

In the communal bomas, feeding is simply carried out by placing tuff, and later lucerne, on the ground, under high-roofed shelters. Water is provided in troughs, and the floors are not concreted. Furthermore these pad-

docks are not roofed. The gates between these communal paddocks and the individual bomas are constructed in the same way as those opening into crates in front.

Feeding in the individual bomas is achieved by placing the food in the front of each crate. Three or four days before being moved, the crate door is closed behind the animal, and it is fed and watered in the crate in which it will travel.

A diagrammatic layout of a row of bomas is shown in Fig. 28.

It has recently been proved possible to contain white rhino in a plastic boma, not reinforced, for a period of up to 36 hours. It may be possible to do so for longer. This technique, used in conjunction with driving by means of helicopter, also opens up possibilities for capture of rhino on a large scale, as immobilization can then be done when convenient for transportation.

The construction of the crates is normally carried out professionally. There are three basic sizes to suit animals of different sizes. The framework is of angle iron, to which is bolted stout timber. Doors are situated at either end, and consist of two independent sections which can be removed separately. The lower section is designed to be opened only for feeding and watering when travelling in cold conditions, as in overseas export. The upper section can be removed completely to allow adequate through ventilation if needed. With the doors removed, security is achieved by the presence of a number of vertical bars, so spaced as to prevent an animal from pushing between them. The bars are bolted to the framework, and can be removed for releasing the animals.

3. Larger carnivores

The prime consideration in the temporary holding of wild caught lion (*Panthera leo*), leopard (*Panthera pardus*) and cheetah (*Acinonyx jubatus*) is the construction of stout

enclosures, with the barest minimum of gaps, and preferably so designed as to obviate any possible source of disturbance. This applies more particularly to the first two species mentioned earlier. The cheetah is less inclined to ferocity, being a more timid species, and a simple, stoutly-built enclosure, with no roof (but adequate shade) is usually sufficient for it.

Both the lion and the leopard have a tendency to leap for freedom and, being very agile, may jump out of such enclosures. For this reason it is necessary that their pens should be roofed, apart from being adequately reinforced.

Because of their prodigious strength, the accommodation of hyena (*Crocuta crocuta*) poses similar problems.

4. Primates

It requires very little imagination to know that the size requirements for the temporary holding of primates are dependent mainly on the number to be kept. Furthermore, any enclosure must be completely enclosed by some such material as a stout wire mesh. The door catch should be "tamper-proof", of course.

Husbandry Procedures

A few words on the basic husbandry and care of the various groups of animals is now necessary. Nutrition is dealt with in a separate chapter.

1. Antelope and zebra

In the larger pens as described earlier, it is possible to hold up to 12 wildebeest or five zebra.

In the case of wildebeest, calves may be separated from their dams if old enough, and placed together. Alternatively, if it can be assured that calves and dams belong, then they may be placed together. Adult males can be kept together, but should be separated from the females and calves.



Fig. 27 Loading antelope from temporary holding pens onto a lorry for transportation. J. Vincent

Zebra males, when placed together, tend to fight, and in this case must be separated. It is usually most satisfactory to place one male with three or four females. Sometimes even the females fight amongst themselves, in which case the combatants must be separated.

Pens holding wildebeest should contain bedding, but because of the dry nature of the dung, it is not necessary to replace this bedding more often than once a week. Wet bedding should, however, be replaced or turned daily. Zebra do not require bedding, but the pens must be cleaned daily.

Impala males up to the age of about two years, may be placed together or with females. Older males must be kept separately. Up to 20 animals may be kept in each of the smaller pens described for a short period. For longer periods, no more than ten may be kept together. Bedding must be provided, and turned or replaced daily.

Up to five waterbuck may be kept in either of the types of pen described. Only one adult male may be kept in each pen, although he

will tolerate females, without injuring them. Young animals, up to about two years of age, may be kept together. Bedding should be provided, and it is preferred to keep this species in completely roofed enclosures, as they are prone to jump.

Kudu and nyala are similar in their requirements, and kudu particularly must be kept in roofed pens. Up to five or six may be kept together. Adult males, when they have initially settled down, are tolerant of one another and of females.

Because nyala are particularly prone to capture myopathy, exhibiting various stress symptoms, it is now preferred to release this species into a fairly large (1-1 hectare) open enclosure, containing natural fodder. This enclosure must be predator-proof, and the presence of plastic to avoid disturbance from outside is desirable. The mortality rate from stress associated with capture has declined significantly with this development, and loading is achieved by so designing the enclosure as to enable the animals to be driven quietly up a ramp into the waiting transport.

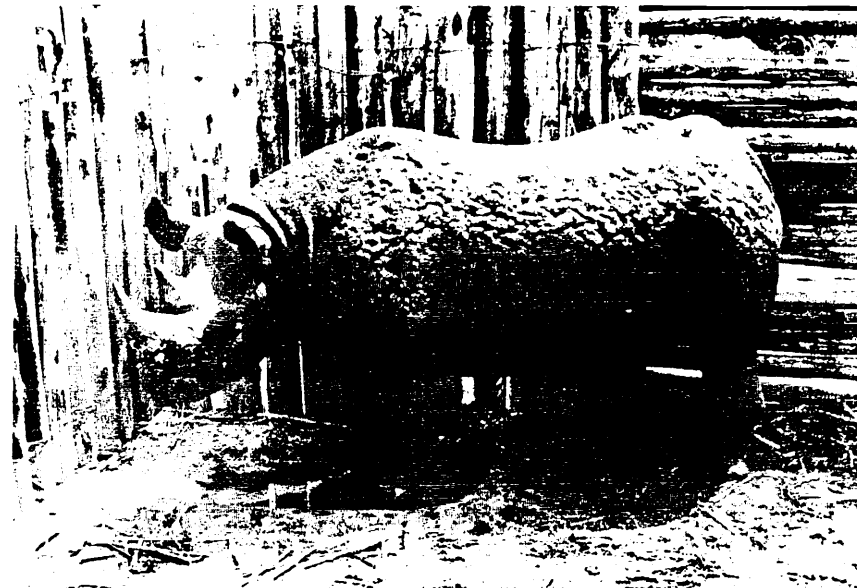


Fig. 29 Black rhino in a temporary boma. E. Young

2. Rhinoceros

As mentioned previously, up to ten or twelve young adult white rhino may be contained in a $\frac{1}{4}$ hectare paddock before being isolated for final taming in the individual bomas. Juvenile rhino are also very tolerant, and indeed even young adults are tolerant of juveniles.

No attempt has been made to confine more than one black rhino in a small space. This species becomes tame a good deal quicker than the other, and it is possible that individuals will tolerate one another.

Cleaning of the bomas can only be achieved when the animals have become accustomed to being shut in the crates.

An account of the "boma training" of white rhino is provided by Player (1967).

3. Larger carnivores

Due account of the social habits of the various species provides a clue to the husbandry

thereof. Lions, for instance, if from the same pride, may be kept together in the same enclosure. Leopards, being solitary by nature, should be kept separate, while cheetah will tolerate one another if kept in a sufficiently large enclosure.

Meat that has not been consumed should be removed from any enclosure before it becomes decomposed, and for this reason due care must be taken in the construction to ensure that this is possible.

4. Primates

Animals from the same troops of these species may be contained together, but mixing of troops will result in fighting. Cleanliness of the enclosures is necessary if coprophagia is to be avoided.

REFERENCE

PLAYER I. 1967 Translocation of white rhinoceros in South Africa. *Oryx* 9 (2) : 137-150

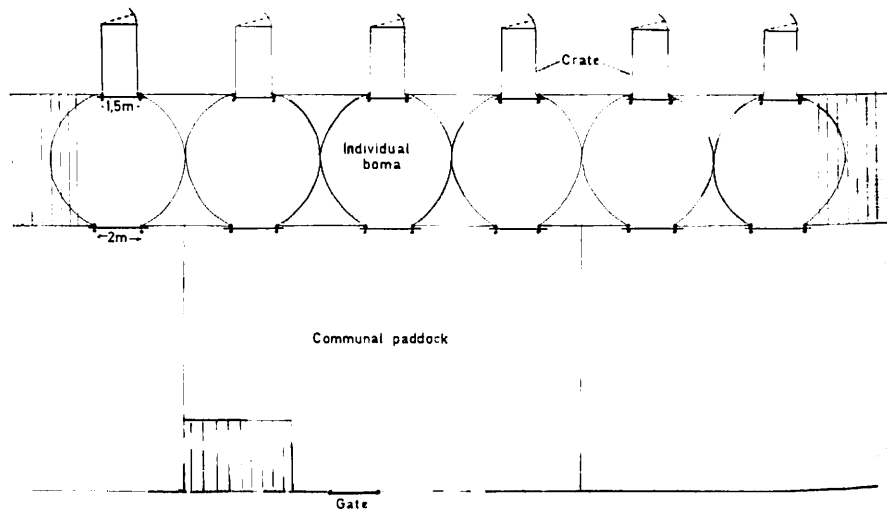


Fig. 28 Diagram of the layout of a row of rhino bomas, together with communal paddocks

Editor E. Young
Project Secretary H. Ebedes

THE CAPTURE AND CARE OF WILD ANIMALS

*The work of eighteen Veterinary,
Medical and Wildlife Experts*

[1-15], 1-224



Human & Rousseau Cape Town and Pretoria

1973