Long Distance Road Transportation of Hippopotamus

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Hippopotamus (*Hippopotamus amphibius*) is a river-living mammalian species from tropical Africa. The Hippos and whales have a common ancestor. Hippos spend most of their time standing or swimming underwater, where they feed on aquatic plants; it is herbivorous in nature. The animal is known to spend about 16 hours a day in water. The Greeks named them "river horse." It has short-legs and broad body with a tough greyish-brown coloured skin. The animal mostly defecates in water. It is the third largest land animal after elephant and white rhinoceros. The male is about 160 cm tall at the shoulder and weighs about 5 tons where as the female is slightly smaller. The body is nearly hairless. The mouth is wide, and the incisors and lower canines are large ivory tusks which grow throughout life. The eyes and nostrils are near the top of the head, thus the animal can see and breathe when submerged in water. It breaths every 4-5 minutes. Hippopotami usually live in herds; groups of animals feed on the shore. They also bask on the shoreline and secrete a red oily substance, which is a skin moisturiser and sunblock which also protects the animals against germs. When alarmed, hippo rushes to the water. Each breeding female can give birth to one calf every two years. It is hunted for meat, tusks. Africans use the hide for shields and whips. Once widespread in Africa, hippopotamus is now rare and currently restricted to eastern central and southern sub-Saharan Africa.

Hippopotamus in the Zoo environment

Hippos were exhibited in zoos and were popular among the visitors for many years. The first Hippo was displayed in London Zoo way back in the year 1850. The first Hippo in India was in Kanpur Zoological park in the year 1977 and was named "Dhiraj". Since then they have adapted to the climatic conditions of the zoo. The animals have been provided with an enclosure of the size 1130 sq.mts., in which the water pool occupies half the area with a concave bottom. The open space has feeding platforms and mangers. The entire pool is divided into two halves with one breeding pair kept on one side and two males a female and a calf on the other side to check territorial fights. The numbers have increased to six. The animal is a voracious feeder and consumes more than 80 kg of fodder every day. It is costly to maintain a big herd in captive conditions. The habit of the animal is to defecate in the pool of water, hence

Hippopottamus acquainted with transport cage

cleaning of the moat and change of water is needed at regular intervals. As the numbers increase the rate of cleaning cycle also should be increased to maintain hygienic conditions. To keep a balance on the above factors and to have a diversity of animals in the zoo, animal exchanges were proposed.

Animal exchange was planned between Kanpur Zoological park, U.P. and Sakkarbaug Zoo, Junagadh, Gujarat. According to the exchange programme a pair of hippopotamus, a pair of hog deer and some birds were to be transferred to Junagadh in exchange of a pair of tigers along with some birds. The proposal was approved by the Central Zoo authority Vide its letter no CZA F no.23-1/2009-CZA (M), dated 23-11-2009. By mutual agreement between both the zoos, the male hippo was to be transported by Kanpur zoo to Junagadh by Kanpur zoo authorities and the female hippo would be transported later by Junagadh authorities.

As a matter of routine, only younger and smaller individuals are preferred for exchange for ease of transportation. In this case, however, the existing pair was selected for exchange, thus the larger male of about 20 years was to be transported. Thus the male hippopotamus, named Neeraj aged 20 years was transported under approved exchange programme from Kanpur zoological Park, Kanpur to Sakkarbaug zoological Park, Junagadh.

Preparations for Transport

The method of transportation and the modalities were discussed at length and many rounds of discussion were held between Director, Veterinarian, Forest Range Officers, Keeper and other field staff who participated in earlier exchange programmes. After the discussions the following activities were planned.

1. Construction of cage of suitable size.
2. Acquaintance of the animal to the cage
3. Selection of route for transportation
4. Handpicked personnel for transporting
5. Selection of season for transportation
6. Loading of the animal in the truck
7. Food reserve, medical kit and other equipments
8. Frequency of water bath
9. Precautions adopted during transportation

Construction of cage of suitable size

The male hippo was fairly a large animal and required a cage of suitable size and strength. The total transporting distance from Kanpur to Junagadh was about 1400 kms. Thus the cage should also be in a position to cope with the bumps and jerks on the road along with a heavy animal inside. Thus the cage of 3.60mts (length) X 1.50 mts (width) X 1.80 mts (height) angle iron with 60mm X 60mm X 6 mm dimensions was chosen for construction of the cage. At one end a slide up door was fixed with iron bars of 25 mm thickness. The top of the cage was also constructed with iron

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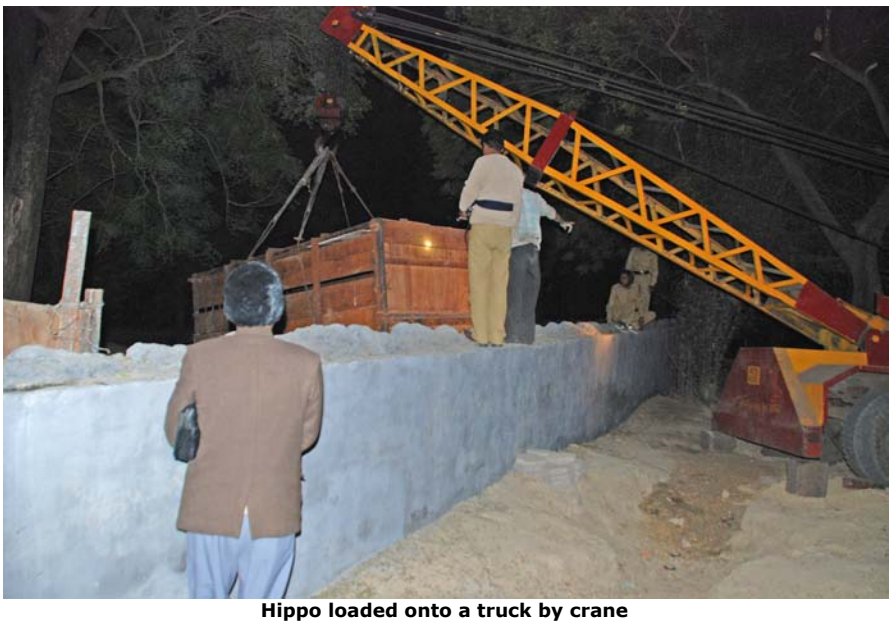

Hippo loaded onto a truck by crane

bars of 16 mm and were fixed at a spacing of 8.0 cms to allow proper ventilation to the animals and to allow drenching of the animal to keep it cool and moist. The front end, sides bottom and the head portion of the roof were covered with wooden planks of the size.0.3 mt width X 0.025 mts thickness and appropriate length. The wooden planks placed at the bottom and front end were joined closely but the side planks were spaced to allow free flow of air. Additional reinforcement was placed on the front end and back end to sustain impact of the animal when it is loaded and tries to escape the cage. Thus a cage of suitable size and strength was constructed.

Acquaintance of the animal to the cage

To make the animal acquainted with the cage, the cage was placed in the enclosure two months before the expected date of transportation. The entry door (sliding up door) was pulled up and was tied with a thick plastic rope and the other end of the rope was fixed to the ground with suitable designed nails. The sliding arrangement is shown in the photograph presented with the article. So that on the day of transportation the animal could be locked instantly. Feed was served inside the cage. Initially the animal showed reluctance, but later the animal was used to the cage and was moving in and out of the cage freely.

Selection of route for transportation

It is a great challenge to transport a fully grown amphibious animal longer distance. Thus comfortable route with minimum jerks and bumps and with facility for water and feed all along the way is of utmost importance. Two probable routes chosen for transport are as follows-

Route I- Kanpur »Jhansi » Shivpuri » Guna » Ujjain » Ahmedabad » Junagadh.

Route II- Kanpur » Etawah » Firozabad » Agra » Bharatpur » Mahuwa » Balaji Crossing » Dausa » Jaipur » Ajmer » Nathdwara » Udaipur » Gandhinagar » Rajkot » Junagarh

The total distance covered by route I was 1393kms and that of route II was 1500kms. Though the second route was longer by 107kms, route I has many state highways, few national highways and some least- populated areas. Thus the expected jerks and bumps on these roads are more and at the same time in the case of emergency immediate assistance was a remote possibility due to least populated areas along the road. Most of the way on route II was national highway and also Golden quadrilateral the national highway no 2. Thus route II was chosen for transport because of less jerks and bumps on national highways and the facility for watering and feed availability along the way.

Handpicked personnel for transporting

The arrangements for transportation of the hippo were satisfactory. But the real challenge is to transport the animal safely to its final destination. The guidelines issued by the Central Zoo Authority for transportation of the animals clearly state that a veterinarian should accompany the animal under transport. Thus the first person in the team was a veterinarian. Later a team of staff for assisting the doctor during transportation was carefully selected. Any small mistake would prove detrimental. It could result in the loss of life of a precious animal and at the same time bring a bad name to our organisation. Hence a careful selection of personnel for transportation of the animal is essential. The people should be well-acquainted with the habits of the animal under consideration and also be capable to confront difficult situations successfully. The group should be cohesive, share responsibilities, accepting of the duties assigned and willing to take up the challenges involved. Keeping in view the experience and past history of transporting animals, Mr. J. P. Awasthi, forester was chosen. Keeper Ramesh Chandra as tiger keeper, had long experience of handling animals. Hence he was chosen as third member of the team. Mr. Vinod Kumar, sweeper is an active member of the zoo. Many times he was assigned the duty of handrearing orphan animals. He has a technical bent of mind to overcome the difficult situations. He is also responsible for maintenance of hygiene of the animal. Thus he was chosen as the fourth member of the team. Thus we build the team.

Selection of season for transportation

After the initial approval of CZA was given, it was decided not to transport the animal during summer as the animal was amphibious in nature. It restricts itself to water for about 16 hours a day. Thus transporting such an animal during summer was not advisable and it was decided to postpone it till early winter. During end of September and first half of October it was still hot, however, and not conducive for transporting an animal like hippopotamus. Thus an extension was sought for transporting the animals. The proposal was accepted by CZA and period was extended.

The time of transportation was decided around third week of December. Because the nights will be cooler and the animal is to be transported longer distance during nights and during day the animal will be transported during early hours and late evenings. During the day it should be rested in shady places.

Loading of the animal in the truck

Finally the day of transportation arrived, 23 December, 2009. In order to get the hippo into its travel cage it was not given food at the usual time but in the afternoon around 4:30pm when it was very hungry. The animal readily entered the cage for its feed and at the right moment the shutter was dropped and the animal was trapped. As and when the shutter was closed the animal became a little upset

and pushed its heavy body against the walls and shutters. As the cage was designed for all these eventualities no damage occurred to the cage, but the animal received some bruises for which it was given first aid. All the persons involved in the operation were asked to leave the place for a while so that the hippo could recover from trauma. The hippo got used to the situation and calmed down after some time. Then the crane could complete loading the animal on the truck. The transition from enclosure to truck was done in a slow and steady pace, so the animal was least disturbed. Once loaded into the truck the hippo became restless once again, but calmed after a while. The truck left at 11.30 pm.

Food reserve, Medical kit and other equipment

Animal feed. It was essential to carry green fodder and other feed: chopped and whole jowar strands, green fodder, vegetables and fruits were carried as reserve. The animal feed with the following composition was also kept as reserve:

Wheat	30%
Maize	20%
Treacle/molasses	10%
Small fragments of corn or small ruby with gram, lentil, horsebean, kidney bean, legume, fragmented legume, grain dust, oil cake, gram husk, pea husk	40%

Medical kit: During transportation the animal may be subjected to a different environment unusual to its daily routine. This will result in stress, and loss of appetite. The fluctuations in the temperature regime might result in dehydration, temperature rise, stomach disorders etc., the animal may have to be tranquilized for further treatment. The following important medicines were carried.

Antibiotics	Ceftrioxone + Tazobactum injection (For Parenteral use)
	Sulfadiazine+ Trimethoprim Bolus (For oral use)
Corticosteroids	Prednisilone/Triamcinolone Acetonide & Dexamethasone (Injectable)
Behaviour modifier & Anti-emetics	Triflupromazine
Antipyretics / analgesic & anti-inflammatory agents	Paracetamol/Nemisulide & Meloxicam
Antiseptics	Lorexene Cream/Negasunt Dusting Powder / Topicure Spray /Himax Lotion & Betadine lotion.
Miscellaneous	Disposable syringes (50ml/20ml/ 10ml /5ml & 3ml. Cotton and Bandage, Methylated Sprit and Dettol.
Tranquillizing kit	Disinject Dart Gun, Blow Pipe, Xylazine/ Ketamin & Yohimbine Injections.

Other equipment: The animal has to be kept as distant as possible. For drenching the animal two cans, rope and watering trough rubber tube were kept for pouring water on the animal at regular intervals.

Frequency of water baths

Hippopotamus being an amphibious animal, a prime consideration was laid towards the maintenance of humidity to avoid drying of the external body surface. Throughout the journey continuous baths were given. The major considerations for giving baths were temperature and availability of water.

Therefore following schedule was adopted:-

S.No	Date	Place	Time of bath	Distance covered (Km.)
1	23-12-09	Kanpur Zoo, U.P.	09.00 PM	0 Km
2	24-12-09	Sikandara, U.P.	02.45 AM	90 Km.
3	24-12-09	Etawah, U.P.	06.00 AM	85 Km.
4	24-12-09	Agra, U.P.	10.40 AM	140 Km
5	24-12-09	Bharatpur, Rajasthan	12.35 PM	60 km.
6	24-12-09	Mahuwa, Rajasthan	03.00 PM	60 km
7	24-12-09	Jaipur, Rajasthan	06.40 PM	100 km.
8	24-12-09	Ajmer, Rajasthan	11.30 PM	142 km.
9	25-12-09	Ajmer, Rajasthan	07.30 AM	Night halt
10	25-12-09	Highway No NH79 , Rajasthan	11.00 AM	80 km.
11	25-12-09	Highway No NH79 , Rajasthan	01.30 PM	80 km.
12	25-12-09	Highway No NH79 , Rajasthan	04.15 PM	90 km
13	25-12-09	Highway No NH79, Rajasthan	06.45 PM	70 km.
14	25-12-09	Highway No 8, Rajasthan	09.00PM	70 km.
15	25-12-09	Highway No 8, Rajasthan	11.00 PM.	95 km.
16	26-12-09	Gandhinagar, Gujarat	03.00 AM	135 km.
17	26-12-09	Gandhinagar, Gujarat	07.20 AM	Night halt
18	26-12-09	High wayNo NH8B , Gujarat	09.45 AM	87 km.
19	26-12-09	High wayNo NH 8B, Gujarat	01.00 PM	99 km
20	26-12-09	Rajkot, Gujarat	02.15 PM	Lunch break
21	26 -12-09	Rajkot, Gujarat	04.00 PM	140 km.
22	26-12-09	Sakkarbaug Zoo, Gujarat	07.00 PM	127 km

Precautions adopted during transportation

1) Driver had to be careful about movements of the hippo so that the vehicle would be stable.
2) While applying brakes, the speed of the vehicle was reduced well in advance.
3) Speed of the vehicle was maintained at an optimum speed.
4) Animal was given sufficient break to rest
5) Strict monitoring of the animal behaviour and condition was done on every stop.
6) Not much emphasis was given to feed the animal during journey but chopped and raw Chari was given daily. Cleaning of the cage was done with D-125 solution. Occasionally potato, cauliflower, carrot, guava and banana were given. The banana was relished by the hippo along with the animal feed.

A total distance of 1740 km. was altogether covered to reach the destination, because of some diversions on the road. Thus the total road distance was more than the expected distance.

Finally the animal was landed safely into the hippopotamus enclosure of Sakkarbaug Zoo, Junagadh at 9pm on 26 Dec 09. The marathonic mission was accomplished successfully. The hippo was transported 1740 km from Kanpur Zoo to Sakkarbaug Zoo.