Swimming Pool for Horses

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As an integral part of the rehabilitation program, a swimming pool for horses was constructed at the Joban Branch Laboratory, Equine Health Laboratory, in May 1975. It is doughnut-shaped, 14.6 m in diameter and 3 m in depth.

It is believed that swimming training in a pool would enable the horse which suffered from diseases of the locomotor system, especially the lower limbs, to overcome the trouble because of buoyancy. Swimming in the pool has already been applied to the treatment and training of diseased horses, healthy horses, and young horses in many countries. It is also possible to use swimming to correct vices (such as rocking the head while running). As an integral part of the rehabilitation program, a swimming pool for horses was constructed for the first time in Japan at the Joban Branch Laboratory (Hot Spring Sanitarium), Equine Health Laboratory, in May, 1975. References were made to the swimming pool at the Holly Wood Park Racecourse and the report described by Swanstrom and Lindy.1)

The pool is made of ferroconcrete with a doughnut-shaped configuration, as shown in Fig. 1. It is 14.6 m in diameter and

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Fig. 1. Draft of swimming pool
3 m in depth. The central "island" is 6.6 m in diameter. In other words, the course where the horse swims is 4 m in width and about 40 m in circumference (as measured 1 m distant from the outside wall). One chute each for the exit and entrance of a horse is located on a tangent line at each end of the circular pool. The chute is 2 m in width and 10 m in length. The height of the wall is 0.5 m at the outer end and 1.2 m at the inner end of the chute. In order to protect the horse from accidents which may be induced by kicking the wall, the outside wall was withdrawn by 0.5 m at the depth of 0.5 m from the surface of the water. In other words, the outer circumference was stuck into the pool to be 0.5 m thick and 0.5 m long overhang.

In designing this pool, a circular pool was adopted because this type of pool provides an efficient utilization of space available and an advantage of prolonged, as well as unlimited, swimming time, as compared with a straight-line pool. The water capacity of the pool is about 530 m³. A doughnut-shaped pool with an island at the center enables to save about 100 m³ of water. It will also lead to an increase in the circulatory filtering capacity of pool water.

The angle of inclination of the chute is decided as 15°. The determination of the chute inclination angle is important in order to assure that a horse will be able to swim in safety. If the chute inclination angle is too great, and if a horse runs amuck in the chute, there will be a danger for the horse to tumble by slipping on its hind legs. The inclination angle of the entrance to the hot spring bath chute is 15° at the Sanitarium, where there have been no accidents by slipping up to this time. Horses under rehabilitation are accustomed to the inclination angle during the thermal ablutions. Therefore, it is believed that this angle is functional in facilitating a horse to enter and leave the pool. This is one of the reasons why the chute inclination angle has been made 15°.

Furthermore, from the standpoint of construction, considerable attention was paid to the safety of horses and human beings. In other words, the pool side of the chute where a horse walks is covered with urethane. The surface of the place where a horse is washed down (one place) before entering the pool is covered with a sheet of rubber 1 cm thick. The chute walls are covered with an elastic mat. The floor is covered with a urethane board with non-slip protrusions (3 × 4 × 1 cm) at 1 cm spacing, as shown in Fig. 2. To prevent a person leading the horse from slipping, a strip 1 m wide of non-slip tile was used around the pool side, as indicated in Fig. 3.

At the inner circumference, an overflow gutter 15 cm wide was installed so that such floating dusts as dead leaves and

Fig. 2. Urethane surface with protrusion
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straw might be washed away. At the same time this overflow gutter acts as wave-absorber.

A circulatory filtering method has been adopted to purify the water of the pool. In other words, water is pumped out of 3 traps at the bottom of the pool and through 10 overflow traps situated around the pool perimeter. It flows through a sand filter equipment (filtering capacity, 2,200 m³/day) and returns to the pool after chlorination. When the water returns to the pool under pump pressure, it is spurted out of 10 spouts equally spaced around the wall and set at an angle of 45° parallel to the water level at a depth of about 1 m from the water level. Due to this spurting pressure, the surface water of the pool slowly circulates clockwise, leading floating matters on the surface toward the overflow gutters. This spurting pressure, however, does not affect the swimming of the horse. As the overflow water is constantly drained out, the floating matters are trapped by wire-net containers inside the overflow traps which can be removed easily for disposal. Small floating matters such as droppings and hair, are trapped by a trap located in the filtration room. It is, however, much better to remove feces from the swimming horse as soon as they appear with a long wire-netted ladle.

The chlorination is carried out to disinfect and prevent the growth of duckweed.* The chlorination and circulatory filtration make it unnecessary to change the water for 6 months or more.

A horse is led into the pool through the entrance chute on reins by a groom. The groom walks around the pool side at such speed as adjusted to the swimming speed of the horse. Then he leads the horse out of the exit chute after swimming is over. The groom crosses the chutes over drawbridges. The horse is usually allowed to swim clockwise. As the location of the exit and entrance chutes and the inclination degrees are the same, it is also possible to swim counterclockwise.

In order to lead horses with no swimming experience into the pool, the horses must be accustomed gradually. Since horses have a cautious attitude toward a pool, it is dangerous to lead an inexperienced horse suddenly into the pool. So, it is advisable that a horse should first be accustomed to the pool facilities in general over a period of several days. If a horse is forced into the pool, it will dislike the pool and hardly be subjected to swimming training. On the basis of this thinking, special structures, such as doors and restraining bars, must not be present in the chute entrance. In training the horse, a horse which hesitates to enter the pool should first be backed into the chute to a point where its knees are immersed in water. Then it should be turned to face the pool. In this manner, the horse will begin swimming quite easily.

*The level of chlorine is maintained at 2 to 4 mg per kg of water.
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After a kick starts from the chute floor, the leg movement of the horse becomes accurate as it starts to swim. The horse swims very well and no further trouble occurs. However, if the starting kick is insufficient, the movement will be in discord between forelegs and hind legs and the body will sometimes be upright to induce a danger of death by drowning. Therefore, there may be a minimum need for the use of a whip to make the horse kick the chute floor properly. Only the reins are used in leading a horse in the pool. If a horse is inexperienced in swimming, a lead pole with the reins running alongside will maintain a fixed distance from the pool wall.

Since the pool was completed, over fifty horses have been trained in swimming without an accident. At present, a series of studies are still in progress.

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Literature Cited