



THE BULL IN THE CHINA SHOP

An Assessment of the Human Safety Risks Associated With Wild Performing Animals in Circuses



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Photo 1 - Garden Bros. Circus – Credit: Zoocheck Canada

PREFACE

*“I’ve been shot, stabbed three times, taken forty-four stitches just in my head, been hit with bottles, sticks, you name it, crashed three police cars, a motorcycle, and an airplane. None of this ever scared me. Trying to stop an eight thousand-pound elephant that was trying to do a headstand on me – **that** scared me!”* - Blayne Doyle to the Crime Subcommittee of the House Judiciary Committee, Washington D.C., June 13, 2000

Palm Bay, Florida, February 1, 1992

Veteran police officer Blayne Doyle is working security and traffic control at The Great American Circus in Palm Bay, Florida, February 1, 1992. During the show’s intermission, an 8,000-pound Asian elephant named Janet is giving Kathy Lawler, her two kids and three other children a typical “elephant ride” around the ring inside a high metal fence.¹

The elephant pauses, and then walks into the security fence. Stepping back, Janet raises her trunk and lunges at the fence, slamming her bulk against it repeatedly. Using her head and trunk, she topples and casts aside sections of the fence, as the children on her back cry and scream. The trainer shouts commands at the massive animal, but to no avail.

Janet proceeds to strike the trainer with her trunk, sending him flying several metres through the air. Then she heads for the grandstands.

Janet attacks the bleachers, sending rows of spectators stumbling in all directions, screaming and falling over each other in an attempt to escape. She then turns from the crowd and begins pulling at cables and wires overhead with her trunk, unleashing a shower of sparks. A heavy metal beam falls on Janet's back - just missing the passengers – and crashes to the ground, further upsetting the animal and causing it to bolt out of the ring and towards the exit.

About 500 panicked spectators flee the grandstands and Janet, now outside, runs straight through the middle of them. Circus workers come running from all directions. One of them is on another elephant that slowly approaches Janet from behind, with the hope of bringing the second elephant alongside and transferring the passengers to safety.

Janet is currently attacking her trainer's car, smashing the doors in and shoving it sideways. With the second elephant now in position, Lawler swings her 3-year-old boy C.J. over to the worker unharmed, and tries to transfer 6-year-old Jessica when the other elephant suddenly moves away.

Officer Doyle rushes to the scene just as Janet begins banging her head on a trailer that houses a captive bear. Doyle instructs Lawler to lower the children, one by one, to him on the ground. But just then, Janet swings her massive trunk and strikes the officer, doubling him over and knocking him to the ground.

Doyle slowly gets to his feet to try again, but the angry elephant curls her trunk around the officer's waist, lifting him up and throwing him to the ground. Doyle tries to take in air, but he's caught in a deadly vice, as Janet pushes him face first into the ground. *So this is the way it ends*, he thinks. Then he hears a voice say, "No, no!" and realizes that someone has struck the animal. The pressure eases and he's able to escape.

Janet then slams into a panel truck, bursting open the sides, before returning to her trainer's car and hammering it with her forehead. Another child is lowered to someone on the ground while the other elephant comes alongside Janet once again. Lawler and the circus worker scramble to remove the remaining children before Lawler herself jumps from Janet's back and lands safely on the other elephant.

Blood gushing from a deep cut in her trunk, Janet resumes smashing the panel truck, then wraps her trunk around a heavy generator and flings it through the air. She then attacks a parked tractor-trailer, ripping the vertical exhaust system off and throwing it to the ground.

The elephant trainer, who is also the general manager of the circus, approaches Doyle. He's yelling at the officer to get a tranquilizer gun. It was then that Doyle realizes the circus has no Elephant Emergency Plan.² The Palm Bay police don't have anything

strong enough to take down an elephant either, so Doyle radios for a high-powered rifle while Janet heads back to the main tent.

The police officer has no other choice. There are still people inside the tent. He pulls out his 9-mm handgun and fires a shot into Janet's ear, but it has no effect. Doyle continues to fire, 14 shots at point blank range, into the elephant's ear.

Janet screams in pain and lifts her trunk, but continues towards the tent. Spectators also scream and run as the elephant storms back into the tent and ploughs through the bleachers. Doyle is joined by other police officers, and they try to figure out what to do. If they fire at the elephant now, they might hit someone.

They decide to move everyone out of the tent, and when all the spectators have been safely ushered out, the officers open fire on Janet. The elephant runs out of the tent and down one side of it, through the frenzied crowd. She finally falls over on her side, blood pouring from her trunk. An officer with a high-powered rifle then fires two fatal shots into Janet's head.

It is not known what caused the animal to go berserk, but Doyle says that when it happens, people are going to get hurt. "I have discovered, much to my alarm that once an elephant goes out of control, nothing can be done."

He believes that any response to neutralize an animal also puts the public at risk. "The only thing that can be done," he says, "and even this is a danger to the public is to get a battery of police officers in with heavy weapons and gun the elephant down."³

In the end, a dozen people, including Doyle, were injured during the rampage, and the elephant was destroyed. "Janet was killed in a hail of police gun fire, 56 rounds in all, in front of 2600 men, women and children from a small town in Florida," Doyle said, "not much different from a thousand other small towns."⁴

He shares his experience so others don't have to go through what he did. "I know this story sounds like it could never happen in your town, but ask yourself, could it?"¹

PURPOSE OF THIS STUDY.

Are circuses that feature wild performing animals a risk to human safety? This report is designed to answer that question; to examine whether injuries and attacks by wild performing animals are rare and unpredictable, or the inevitable result of keeping, exhibiting and interacting with potentially dangerous animals.

¹ In 1989, Janet (then known as Kelly) broke from a petting zoo at the Southwest Florida Fair, charged through the midway and then plunged into a lake with three riders on her back (Scigliano, E., *Love, War AND Circuses*, Houghton Mifflin, New York (2002). p. 268).

Circus promoters have insisted that their animals are tame and under control, and that concerns raised about human safety at animal circuses are unfounded. The facts however, indicate otherwise.

WHAT IS A POTENTIALLY DANGEROUS ANIMAL?

Any animal that could pose a clear and present danger to human life in any situation due to direct contact should be considered a dangerous animal. Those animals include, but are not limited to: African and Asian elephants, hippopotami, rhinoceri, leopards, African lions, Bengal, Siberian and Sumatran tigers, American black bears, polar bears, orangutans, chimpanzees, crocodiles and alligators, large snakes and all venomous reptiles.⁵

The United States *Animal Welfare Act* lists lions, tigers, bears, elephants and non-human primates, among others, as “dangerous wild animals”,⁶ while the *Standards For Exhibiting Circus Animals In Nova Scotia* (2000) state that elephants and big cats “are potentially dangerous to members of the public.”⁷ The Nova Scotia Standards also recommend “the general public must never have access to the elephants.” These standards unfortunately are not always adhered to, as we shall see.

While it is common to view potentially dangerous animals in a zoological park, the risk to human safety is reduced because in most cases, the visiting public does not have access to, or direct contact with those animals. Most zoo animals are kept in cages and other enclosures, which are designed to keep the animals in and the visiting public out. This is done to protect both the public and the animals from harm. More progressive zoos have progressed from free contact situations, as found in circuses where human trainers are in close proximity to potentially dangerous animals to the safer, protected contact situations (discussed later) in zoos.

Still, there are instances of injuries and attacks, even in the best zoos.⁸ In Europe for example, between 1976 and 1991, there were 15 such instances, four of which resulted in the death of the handler.⁹ During the same period in the United States, 15 handler deaths occurred in zoos, with elephants killing a handler on average of once a year.¹⁰

At circuses that feature elephants, 18 deaths have occurred in the U.S. alone from 1970 to 1995 and an estimated 100 deaths worldwide since 1980.¹¹ More numerous however, are the non-lethal incidents that involve major and minor injuries.²

The U.S. Bureau of Labour Statistics ranks elephant keeping as the most dangerous profession in North America - more so than coal mining, law enforcement and firefighting.¹² Even the United States Department of Agriculture (the branch of the

² At the time of this writing, an elephant performing for the Shrine Circus in Fort Wayne, Indiana trampled a circus trainer to death. Police said the victim died from blunt-force trauma to the chest a few hours after being found by a worker (Elephant Tramples Circus Worker to Death. *Associated Press*, February 1, 2005).

government that oversees and licenses animal circuses) in 1995 identified eight circus elephants that had injured, attacked or put the public at risk (with two people being killed) in a list of potentially dangerous elephants.¹³

According to primate expert Anne Russon, wild animals, even wild animals born in captivity, can pose a serious danger to people.¹⁴ Therefore, it is reasonable to conclude, that wild performing animals in circuses are potentially dangerous.

TYPES OF ANIMALS USED IN CIRCUSES

The most common wild animals performing in circuses today are elephants, lions and tigers. Also used, though less frequently, are bears, monkeys, leopards, camels, alligators, kangaroos, dolphins, zebras and snakes, among other species. For the purpose of this study, the distribution, habitat, physiology, behaviour, social dynamics and spatial organizations of elephants, lions, tigers, black bears and certain primates will be examined.

Elephants. *Elephantidae*, from the order Proboscidae are divided into two species: the African elephant, *Loxodonta africana* and the Asian elephant, *Elephas maximus*, of which the Indian elephant is a subspecies. Distribution for the African elephant is Africa south of the Sahara desert. The Asian elephant can be found in the Indian subcontinent, Indochina, Malaysia, Indonesia and South China. Habitat for the African species is savannah grassland and forest; the Asian variety is mainly forest.

The largest of all living mammals, elephants are renowned for their incredible strength, formidable tusks, longevity - individuals can live up to 60 years in the wild - and their ability to learn and remember. Their adaptability as working animals has been exploited for millennia in the areas of agriculture and warfare. The demand for elephant tusks - the main source for commercial ivory - and habitat loss is largely responsible for the drastic decline in elephant populations over the last century.

The African elephant is the larger of the two species with males weighing up to 6,000 kg (13,200lb) and females up to 3,000kg (6,600lb). Asian elephants in contrast, can weigh up to 5,000kg (11,000lb). Both species possess tusks - elongated upper incisor teeth - but the Asian elephant's are much smaller than its African cousin's, and the females' are not visible beyond the lips. The tusks are mainly used in feeding, stripping bark off trees or digging for roots, but may also be used as an instrument of display or as a weapon.

Unlike other herbivores, the elephant cannot reach the ground with its mouth because its neck is too short, so it developed its long trunk - a union of the nose and upper lip - enabling the animal to feed from the ground. This highly sensitive and complex organ, manipulated by over 10,000 muscle units, is also used for feeding on trees and shrubs, breaking off branches and picking leaves, shoots and fruit. Further uses include drinking, squirting water and throwing dust on itself, forming and amplifying vocalizations, caressing and threatening, as well as a weapon of defense and attack. A mature bull's trunk can weigh as much as 150kg (330lb).

An elephant's skin is very thick, 2-4cm (0.8-1.6in) and sparsely endowed with hair. Despite the thickness, it is highly sensitive and requires frequent bathing, massaging and dusting to keep it free of parasites and diseases.

Although elephants walk at about 4-6km/h (2.5-3.7mph), they have been observed to maintain double this speed for several hours. A charging or fleeing elephant however, can reach speeds of 40km/h (25mph), easily outrunning any human.

Elephants use sound frequencies well below the normal audible range - infrasonic waves - to communicate with each other and to find rain by perceiving thunder several miles away. Their large ears, which they also use as fans to cool their bodies, allow them to receive as many of these frequencies as possible.

Elephants require a large home range in order to find food, water and shade throughout the year. Differences in home ranges thus depend on these factors as well as the quality and quantity of food available. Home ranges vary in size from 15-50sq km (5-20sq mi) for cows and their young, and from 500-1500sq km (200-600sq mi) for bulls. If there is plenty of food and water however, their ranges need not be so large. In one study, the home ranges of African elephants in a woodland and bush habitat were found to average 750sq km (290sq mi) in an area of abundant food and water.

Since a large portion of both species' diet consists of low quality vegetation, they must spend a considerable amount of their time (60-80% of waking hours) feeding in order to fulfill their nutritional requirements (between 150 and 350kg of wet forage). Their diet consists of grasses, leaves, stems, bark, roots, twigs, herbs, flowers and fruit, the relative portions shifting with the seasons.

Elephants are extremely gregarious - particularly the African savannah species which has been reported to congregate in the hundreds under certain circumstances - and display complex social behaviour. Elephant societies are matriarchal, with the family unit being led by the oldest (and usually largest) female. A typical family unit may consist of two or three sisters and their offspring, or one old cow and one or two adult daughters and their offspring. Males are loosely attached to the herd.

When a baby elephant is born, every adult in the group raises it. When danger is detected, the herd's first response is to stand in a line of defense. Then all the calves and sub-adults are rounded up into the center and a circle is formed around them while the matriarch faces the direction of the threat. If a member of the herd is killed or wounded, the rest will come to its aid, even in the face of considerable danger. Elephants also display compassion and an awareness of death.

The key to their society is communication, whether by visual signs such as ear, trunk or tail movements, by the release of odour-producing substances or by various sounds. When feeding in dense bush, members of a group monitor each other's positions by low growls. The characteristic loud trumpeting of elephants is mainly used when they are

excited, surprised, about to attack or when an individual is widely separated from the group.

Elephants often touch each using their trunks, and it is especially important between mothers and their young. The mother continually touches and guides her infant with her trunk. Also, elephants often greet each other by touching the other animal's mouth with the tip of the trunk.

Both female and male elephants enter a period of musth (which in Hindi means 'intoxication'). Musth is a powerfully pungent, oily substance that drains from the temporal gland of the elephant, which is located in the forehead between the eye and ear.

Musth is believed by some to be connected to heightened sexual activity, and may occur many times throughout an animal's life.¹⁵ In males it is often accompanied by sudden behavioural changes that are both compulsive and aggressive.¹⁶

Lions. *Panthera leo*, from the family Felidae, is one of five species belonging to the genus *Panthera*. It is distributed south of the Sahara desert to South Africa (excluding the Congo rain forest belt) and in Northwest India in the Gir Forest Sanctuary. Their habitat is varied, consisting of the rich grasslands of East Africa to the sands of the Kalahari Desert. Lions were once far more widely distributed than they are today, with cave paintings and archeological finds testifying to their widespread presence in Europe some 15,000 years ago.

The 'King of the Beasts' can reach a head-body length of 3.3m (10.8ft); a tail length of 1m (3.3ft); a shoulder height of 1.2m (4ft) and can weigh between 150-240kg (330-530lb). Females are slightly smaller, about 20-35 per cent smaller though some males have been known to be twice the size of females. The male's greater size gives them a distinct advantage at feeding sites, where they can crowd in or steal carcasses for themselves. Pride males may survive almost exclusively on kills made by females.

The mane - found only on males - has several functions, which include giving the appearance of great size without the drawbacks of increased weight, and as protection from the teeth and claws of an opponent should an attack occur.

Like other members of the cat family, the lion has a lithe, compact, muscular and deep-chested body. The skull is highly adapted to killing and eating prey and the jaws are short and powerful. Because their prey can reach speeds of up to 80km/h (50mph), lions, who can reach 58km/h (36mph), must rely on stealth to approach to within 30m (100ft) of their intended victim.

Typically, only one in four charges results in a kill, but once knocked down, prey has little chance of escape. Large animals are usually suffocated either by a bite to the throat or by clamping the muzzle shut. All members of the group usually eat the prey.

Lions share their ranges - an area of between 20 and 400sq km (8-155sq mi) - with a variety of other carnivores such as leopards, cheetahs, hyenas and wild dogs, each of which may feed on the same prey species as lions. But while the other species hunt animals weighing less than 100kg (220lb), only the lion routinely kills prey larger than 250kg (550lb). Lions are also more likely to kill healthy adult prey than are the other carnivores.

Nevertheless, the lion is an opportunistic feeder and will eat rodents, hares, small birds and reptiles to supplement its diet. Hunting primarily takes place at night, since cover on the open plains is sparse. But where the vegetation is thick, hunting may also occur during the day. Adult males however, rarely take part in daytime hunts, most likely because their manes make them too conspicuous.

The lion is the most social of all the felids, with a pride usually consisting of 4-12 related adult females, their offspring and 1-6 adult males. The male's chief role in the pride is to defend the territory and the females from other males.

Instances of humans falling victim to lions in the wild are common. They are often - but not always - perpetrated by injured or old animals unable to kill their normal food, yet are more likely to take down humans, who are neither swift nor strong.¹⁷

Tigers. *Panthera tigris*, also from the family Felidae, is sparsely distributed in India, Manchuria, China and Indonesia. Its habitat includes tropical rain forests, snow-covered coniferous and deciduous forests, mangrove swamps and drier forest types. A male's home range is about 60-100sq km (23-40sq mi) while a female's is considerably smaller, about 20sq km (8sq mi).

Tigers are the largest living felids with Siberian tigers being the largest and most massively built subspecies. One such specimen was recorded weighing 384kg (845lb).

Like other big cats, the tiger's physique reflects adaptations for the capture and killing of large prey. Their hindlimbs are longer than their forelimbs that are better suited for jumping; their forelimbs and shoulders are heavily muscled and their forepaws are equipped with long, sharp, retractile claws, enabling them to grasp and hold their prey once contact is made. The skull is foreshortened, thus increasing the shearing leverage of the powerful jaws. Long, somewhat flattened canines swiftly deliver the killing bite.

The tiger is essentially a solitary stalk-and-ambush hunter that exploits medium-to-large-sized prey inhabiting moderately dense cover. It must approach to within 20m (66ft) of its mark if the final rush is to succeed. Once this is completed, the tiger gathers itself up and suddenly rushes the prey.

When contact is made, the momentum of the charge may knock the prey off its feet, or failing that, a slap of the forepaw may serve to throw it off balance. A bite to the throat or neck may be delivered upon contact or while the tiger brings the victim to the ground. When prey weighs more than half as much as the tiger, the throat bite is commonly used

and death is most likely caused by suffocation. The grip may be retained for several minutes after death.

The demands of the habitat in which the tiger lives have not favoured the development of a complex society and instead assume a dispersed social system. This arrangement is well suited to the task of finding and securing food in an essentially closed environment where scattered prey is solitary or in small groups. Thus, the basic social unit of a tiger is mother and young.

Although there is less evidence for lions, several incidents have been reported of male tigers killing cubs. These instances are usually related to the acquisition of one male's home range by another. By killing the offspring of the previous male, the incoming male ensures that the females in his new home range will come into heat and bear his offspring.

Tigers only rarely become man-eaters; indeed they normally avoid contact with man. Like lions, some man-eaters may be old or disabled but there are also many cases of healthy, young tigers acquiring the habit. This behaviour may begin with an accident - a sudden close encounter that ends with a person being killed. Sometimes a single incident is all that is required for a tiger to learn to kill a man. Whether or not a tiger takes the next step and becomes a deliberate man-eater depends on the individual and the opportunity.¹⁸

Bears. *Ursus americanus*, or American black bear, is one of three species from the family Ursidae. Although the Asian, or Asiatic black bear - somewhat smaller than its American counterpart - is also featured in circuses, we will focus here on the American genus.

The American black bear, also known as the North American black bear, is widely distributed throughout the continent, from northern Mexico and northern California to Alaska and across to the Great Lakes, Newfoundland and the Appalachians, with isolated populations in Florida and across the north Gulf Coast. Its habitat is mainly forested areas from sea level to altitudes of up to 1976m (6500ft).

Black bears can be found in many colour phases, from black, chocolate brown and cinnamon brown to pale blue (known as glacier bears) and white (Kermode, or spirit bears); and will often have a brown muzzle and may have a lighter patch on its chest.

Size varies depending on locality and nutrition, however the largest recorded males in the eastern United States weighed 264 and 272kg (582 and 600lb) respectively. In the west, females weigh between 45-90kg (100-200lb) with an average weight of 65kg (145lb) while males are approximately 10-50 per cent heavier. Head-to-tail length is 1.3-1.8m (4.3-5.9ft) with a shoulder height of 80-95cm (31-37in).

Black bears have large, heavily built bodies, thick, short, powerful limbs and short tails. They walk on the soles of their feet (plantigrade stance) which are broad, flat and armed

with five long, curved, non-retractile claws, used while foraging and climbing. Their hearing and sight are much less developed than their acute sense of smell.

Outside the breeding season, most bears prefer a solitary life. At salmon streams and garbage dumps, they are able to communicate and maintain their distance from other bears by threats alone. Threat displays may range from several loud inhalations and exhalations, accompanied by particular body posturing and the lowering of the head, to head bobbing with their gaze fixed on the ground and accompanied by lip smacking. Bears also growl when threatening. While attacks among bears do occur, they are rare, though increase with a decreasing availability of food.

Black bears are mostly herbivorous. They feed on almost any succulent, nutritious vegetation (tubers, bulbs, berries, nuts and young shoots) but will also eat grubs, carrion, fish, young hoofed mammals or domestic livestock. Their food requirement is some 5-8kg (11-18lb) a day.

Lone females and mother-plus-young groups often establish mutually exclusive home ranges of 2.5-94sq km (1-36sq mi) while the male's home range overlaps and is 5-6 times larger, depending on food distribution and quality.

Aside from the occasional dash to catch prey, the pace of life for the American black bear is slow; their growth rate is slow, their lifespan is long (up to 30 years) and reproductive potential low (as few as 6-8 cubs in a lifetime). Potential rates of increase of black bear numbers are only 12-24 per cent per year. So to find enough food and locate the few females available for mating, adult black bears must search vast areas up to 600sq km (360sq mi).

Adult males may kill young males still accompanying their mothers if the female is receptive (in estrus). Aggression results as both male and female try to maximize reproductive success.

Although black bears enter a period of lethargy during the winter months, they are not true hibernators since their body temperature and pulse rate do not drop. This so-called hibernation may be interrupted by mild weather or by disturbances from conspecifics or humans. Bears do not eat during this time and since their main food is unavailable, they rely on the stores of fat built up during a period of enormous appetite in the fall.

In the first few weeks after emergence from the den in March/April, their activity level is low. It increases in the following months and reaches 50 per cent in the summer, when the animals are hyperphagous and rely mainly on tubers, berries and fruits. During this time, a black bear can cover distances of 8-9km (4.8-5.4m) a day. In the fall, when bears need to accumulate fat, they feed on mast crops such as acorns, beech nuts, pine nuts and the activity period may be even longer.

When a large carcass is found, the activity level is relatively brief. After feeding, the bear hides its meal by covering it with soil, branches or leaves and stays near it until the meal is consumed.

While resting, bears use day beds on the ground. These may be natural depressions, such as between the roots of a tree, or constructed by the bear, which scratches away vegetation and soil, so a shallow depression, even a pit, results. These beds may be lined with grass, pine needles, twigs or mosses from the surrounding area.

Trees are used for rubbing the head and shoulders, while the bark is sometimes stripped off for some, as yet unknown reason. Black bears may also den in natural tree holes high above the ground. The bears enlarge the holes by scratching and gnawing at the wood. Holes under trees, logs or rocks and caves, whether natural or excavated by the bears themselves, serve as winter dens, as may old anthills into which a cavity has been dug.¹⁹

Primates. Of the eleven families of primates, two are periodically featured in circus acts and deserve some explanation. These are the capuchin-like monkeys (genus *Cebus*) from the family Cebidae and the macaques (genus *Macaca*) from the family Cercopithecidae. Cebids are also known as New World monkeys while Cercopithecines are referred to as Old World monkeys. Two species from each genus are examined below.

Cebidae - General Information. Capuchin-like monkeys (Cebids) are distributed from Mexico south through South America to Paraguay, North Argentina and South Brazil. Their habitat is mostly tropical and subtropical evergreen forests from sea level to over 2,500m (8,200ft), riverine forests, swamps, mangroves and seashores. These cebids live almost exclusively in trees, but some species will descend to the ground to play (White-fronted capuchin), look for food (Squirrel monkey) or travel between patches of woodland.

This family includes howler monkeys, spider monkeys and four species of capuchin monkeys including the brown and white-faced capuchins. It also includes the world's only nocturnal monkey (Night monkey) and the only primates with prehensile tails. The tails are used to grab onto branches for safety and the animals can even hang from them to feed near the tips of branches. The tail can support the entire weight of an adult monkey for short periods. Capuchins also have hands with opposable thumbs which give them great dexterity when foraging for food.

Capuchins have significantly smaller home ranges than other species, 1-2sq km (0.4-0.8sq mi) compared with over 4sq km (1.5sq mi) for squirrel monkeys. However, home ranges are also dependant on how food resources are distributed.

They primarily eat fruits and insects, but also small vertebrates and birds. Some of their foods are nuts, berries, seeds, flowers, buds, shoots, bark, gums, arachnids, eggs, and even oysters and crabs. Capuchins have also been reported to use tools such as stones in order to open oysters and nuts and have the most varied diet of any New World monkey.

Capuchins live in troops ranging from six to twenty members. The troop consists of mostly related females and offspring and unrelated adult males. Social ties and bonds are maintained through grooming sessions. Like many monkeys, capuchin females usually remain with their natal group while the young males emigrate at sexual maturity. Therefore, adult females within one group are often closely related.

The capuchin monkey is considered one of the cleverest animals on the planet. In terms of brain size to body weight ratio, the capuchin is second only to man, and their lifespan is from 15-25 years in the wild.

Species-specific Information. *Cebus apella*, or brown capuchin, from the genus *Cebus*, are found throughout South America east of the Andes except Uruguay and Chile and prefer moister forests than other capuchins. Their head-to-body length is 33-48cm (12.9-18.7in) for females; 32-56.5cm (12.5-22in) for males. Tail length is 38-47cm (14.8-18.3in) for females and 38-56cm (14.8-21.8in) for males. A female will weigh between 2.5 and 3kg (5.5 and 6.6lb) while the male is slighter heavier at 3.5-3.9kg (7.7-8.6lb). Brown capuchins travel in groups of 10-12 individuals, which generally consist of 2 or 3 adult males, 3 or 4 adult females, 2 or 3 juveniles and sub adults, and 1 or 2 infants.

Browns have extremely powerful jaws and can utilize some food types that are unavailable to the other species. When fruit becomes scarce, the brown capuchins tend to specialize on tough palm nuts that the other Cebids can't open.

Cebus capucinus, or white-faced capuchins, also from the genus *Cebus*, are distributed from Belize in Central America south to North and West Colombia. They live in dry to wet forests up to 2,100m (6,888ft) and in mangroves. Slightly smaller than brown capuchins, their head-to-body length is 32-40.5cm (12.5-15.9in) for females and 33-46cm (12.9-17.9in) for males with tail length at 42-45.5cm (16.4-17.7in) and 40-50cm (15.6-19.5in) respectively. They are easily identifiable by a distinct black tuft of hair on their head similar to the cowl or capuche worn by Franciscan monks, hence their name.

Cercopithecidae - General Information. Cercopithecines, which include baboons, guenons and macaques, are distributed throughout Asia except high latitudes, including northern Japan and Tibet, and in Africa south of the Sahara desert (with the exception of the Barbary macaque of north Africa).

Tough, active, gregarious, noisy, imitative, curious - the cercopithecines are the typical “monkeys”, best known because their distribution and behaviour brings them into contact with humans. Many are opportunists, able to take advantage of the wastefulness or sentimentality of human neighbours to make a living. They can also be skilled thieves, plundering unharvested crops or food stores.

Cercopithecines are primarily fruit-eaters but their diet may include seeds, flowers, buds, leaves, bark, gum, roots, bulbs, insects, snails, crabs, fish, lizards, birds and mammals. Most food is caught or gathered together with the hands. Selection and food preparation is learned from observation, initially of the mother. The transmission of information may

be the most important foraging-related function of group living: the troop is primarily an educational establishment. Their longevity is between 20 and 31 years, depending on the species.

They possess powerful jaws with the muscles arranged to give an effective “nutcracker” action between the back teeth. In tree-living species, the hind legs are long and well muscled, used for leaping between branches and bounding along them. On the ground, arboreal monkeys are “down at the front”, with their arms being shorter than their legs.

Not all cercopithecines (meaning “tailed ape”) have tails, but those species that do, use them, among other things, to communicate. The tails of terrestrial monkeys, for example, are sometimes used to signal the mood of the owner, particularly confidence or fear. Patas curl their tails up when they are sexually receptive.

Whenever people and monkeys come in contact, the monkeys’ diet expands to include offerings, garbage and stolen crops. Their behaviour is clear evidence that learning plays an important role in how they acquire food. They time their arrival at feeding stations to coincide with the arrival of food, and raid crops when people are predictably absent, in heavy rainstorms or during the siesta.

Some cercopithecines will enter a field where women are working, and even chase them away, but avoid men, who are usually armed. Others will crowd quite close to people that are washing or fishing at a river, but stay clear of people setting out to hunt; all of which suggest a sophisticated appreciation of human behaviour.

Species-specific Information. *Macaca mulatta*, or rhesus macaque, can be found in temperate cedar oak forests, tropical woodlands, swamps and the outskirts of towns and villages from Afghanistan and India to Thailand and Southern China.

In India they can be found near Hindu temples, accepting food from humans. In northern Pakistan, rhesus monkeys live in the mountains up to 4,000m (13,000ft) in temperate forests that are dominated by pines and firs. They are both terrestrial and arboreal. Head-to-body length is 47-64cm (18-25in) with a tail length of 19-30cm (7.4-11.7in). Weight is about 5.4kg (11.8lb) for females; 7.7kg (16lb) for males.

Rhesus communities are typically made up of 10 to 50 individuals of both genders. Males are dominant, but change groups every few years. Himalayan rhesus monkeys, on the other hand, live in groups of 20 to 70, with each group’s home range including 3-6sq km (1.2-2.3sq mi) of rugged terrain. The rhesus groups in the tropics have a similar social life, in that about half of the group is adults.

The animals are content to sleep in trees but spend much of the day on the ground, eating the leaves and roots of herbaceous plants. Their diet consists of fruit, seeds, leaves, gums, buds, grass, clover, roots, bark, resin and small invertebrates.

Macaca fascicularis, also known as the crab-eating or long tailed macaque, is found in Thailand, Indochina, Burma, Malaysia, Sumatra, Java, Borneo, Philippines and many small islands. They live near swamps, on the banks of water courses and coastal forests and because the monkeys are tolerant of humans, may be found near villages. Head-to-body length is 38-65cm (14.8-25.4in); tail length is 40-66cm (15.6-25.7in) and weight is about 6.2kg (13.6lb) for males; 4.5kg (9.9lb) for females and feature a prominent frill of gray hair around the face.

Groups consist of 10 to 48 individuals, about half of them adults. In these groups, there are generally 2.5 females for each male. Their average lifespan is approximately 37 years.

Although they are excellent swimmers and climbers they spend more time on the ground than other species of macaques.

Crab-eating macaques also have the habit of inserting their hands in small burrows or holes to find crabs or other animals. In the mangrove swamp they have learned to feed on crabs, crustaceans, shellfish and other small animals exposed by the low tide. Sixty-four percent of their diet consists of fruit, whereas seeds, buds, leaves, other plant parts, and animals such as insects, frogs, and crabs make up the rest.²⁰

AREN'T WILD PERFORMING ANIMALS TAME?

Owners of some performing animals and proponents of the circus have argued that since wild performing animals have been trained to obey commands and execute specific movements or behaviours, those animals are tame.³

When 20-year-old Joe Lawson was put in hospital following an attack by a female elephant named Jan, circus officials dismissed the incident as a normal hazard of the business. "It can happen with horses," circus employee Elizabeth Bauer said, adding "those elephants are safe."²¹

The elephant had apparently bit the groom on the head and knocked him to the ground though the circus insisted the groom merely tripped on one of the elephant's chains. An EMS spokesperson said the young man had sustained a cut to his scalp, bruising on his back and a separated shoulder - injuries "inconsistent" with tripping.²²

Yet these and other statements that circus animals are docile and harmless are not consistent with the data on wild animals in captivity. And a trained animal does not mean a less dangerous one.⁴ George Carden, owner of the George Carden Circus International even acknowledged that circus animals "are well trained but they will never be tame."²³

³ "There are no 'wild' animals in circuses [in this country] anymore" - Filmmakers Yahrus & Rosenthal (A Circus Season: Travels with Tarzan), in a letter to the editor of the Los Angeles Times, July 2001.

⁴ According to the testimony of former Ringling employee Tom Rider for the Committee on the Judiciary, June 13, 2000, the Ringling Brothers and Barnum & Bailey Animal Care Manual states: "Remember that exotic animals can be trained, but not tamed, and they can be dangerous to people and each other."

Roy Horn, one-half of the illusionist team of Siegfried & Roy, found this out when he was hospitalized on October 3, 2003 by one of his white tigers. Spectators watched in horror as Montecore attacked Horn during his nightly show at The Mirage in Las Vegas.

According to *USA Today*, Horn tapped the animal on the nose with his microphone after the tiger refused to lie down. The tiger grabbed at Horn's arm, causing the entertainer to stumble. Montecore then lunged at Horn, who tried to beat the animal away with the microphone. Audience members said the tiger dragged the illusionist offstage by the neck. Horn however was lucky; the attack barely missed severing his carotid artery.²⁴

Kathy Carlstead of the Department of Zoological Research points out that while there are marked differences between certain behaviours of captive wild animals and free-living ones - free-living tigers do not jump through flaming hoops; captive lions do not hunt down and kill their food - basic behavioural traits and goals remain the same.

“An animal’s daily life is affected by physical and biological factors such as social and spatial restrictions, the presence of other species, including humans, and the availability of appropriate stimuli for the development and expression of natural appetitive, defensive, and protective behaviours,” says Carlstead.²⁵

Whether the animal lives in the jungles of Sumatra or in a circus ‘beast-wagon’ matters not. And whereas the relatively few domesticated species, like beasts of burden and house pets are “predisposed to domestication by their social organization and reproductive behaviour,” animals found in zoological parks and traveling shows “can be expected to be differently predisposed to domestication, and they probably differ greatly with respect to the adaptive behavioural changes that have already occurred, or may yet occur, as a result of generations in captivity.”²⁶

Even Charles Darwin in his chapter on “reversion” from *The Variations of Animals and Plants Under Domestication* found that pigs “have run wild in the West Indies, South America, and the Falkland Islands, and have everywhere acquired the dark colour, the thick bristles, and the great tusks of the wild boar, and the young have reacquired longitudinal stripes.”²⁷ Earlier in the text he had explained, “... the tusks and bristle reappear with feral boars, which are no longer protected from the weather.”²⁸

Jeffrey Moussaieff Masson writes that domesticated chickens, within days of being freed from their cages, have reportedly taken to roosting in trees, indicating that even after thousands of years of domestication, animals still retain some of their natural, or wild, behaviours.²⁹

Domestication, it should be noted, is defined as “that process by which a population of animals becomes adapted by man and to the captive environment by genetic changes occurring over generations.”³⁰

The fact that some animals have been tamed only means that the tendency to flee in the presence of man has been eliminated.³¹ However, this takes place during the animal's own lifetime and can occur through habituation and positive conditioning towards humans, and is not the result of genetic changes occurring over generations.³²

The number of elephants born in zoos has been extremely low, and of those born in zoos, very few have produced young themselves. Hence, the majority of zoo elephants have not bred for any significant time in captivity - the first Asian birth in a European zoo from captive-bred parents occurred on June 16, 1984 at Rotterdam Zoo in the Netherlands - and there has been no real scope for genetic changes through artificial selection between generations at a population level.³³

Therefore, zoo and circus elephants must be considered wild, rather than domesticated animals to which Dr. Joel Parrott, Director of the Oakland Zoo agrees. "The elephant in the circus is the same elephant that is in the wild. It is not a domestic animal."³⁴

In regards to other so-called domesticated wild animals, J.P. Scott (1954) found that, "no behavioural traits have been observed in domestic dogs that are not observed in their wild counterparts, except for tail carriage." Carlstead thus concludes, "it is highly unlikely that any changes in normal species-typical behaviour would have evolved in zoo or circus animals, since they have not undergone the extensive artificial selection of the domestic dog."³⁵

Similar conclusions have been made in regards to other domesticated animals as well. Marian Stamp Dawkins found that "Junglefowl, which are the wild ancestors of our domesticated chickens, spend long hours scratching away at the covering of leaves that hides one of their favourite foods – the minute seeds of bamboo."³⁶

She says an ancestral memory of this way of life seems to have carried down the generations into the cages of our modern intensive farms so that even highly domesticated breeds have the same drive to scratch away to get their food – if they have the opportunity."

Modern Veterinary Practice (1973) however, has the final say: "... reflexes and instincts in most exotics are simply too deep seated to be washed away by the well meaning pet owners' desultory attempts at domestication."³⁷

WHAT MAKES A WILD PERFORMING ANIMAL POTENTIALLY DANGEROUS?

There are several factors that pose risks to human safety. An animal's size, strength, physique and natural weapons of defense and offence certainly make interactions with humans potentially dangerous. Animal behaviour and physiology, as discussed above, and behaviour in a captive environment, play an important role as well.

Some experts point to inadequate and inappropriate training of animal keepers and trainers, which may provide opportunities for animal escapes and motivations for attacks. Also, the proximity to and interactions with humans, and the various methods of housing and training will affect an animal's behaviour and its aggressiveness towards people.

Fear and Aggression. The Royal Society for the Prevention of Cruelty to Animals (RSPCA), citing Dr. Heini Hediger, states, “Virtually all animals have distinctive flight motivations which may be measured by a quantitative value - the flight distance. If a potential enemy comes within the flight distance of an animal, it will attempt to flee. If confined and unable to retreat, the animal will cower, show ‘fear’ and issue a low intensity threat. If the intruder continues to approach, a critical distance is reached, at which the insecure, apparently cowering animal will attack. Thus, the lion trainer’s ‘skill’ is largely based on the ability to assess this critical distance.”³⁸

In regards to handlers being killed by their elephants, Mike Keele, assistant curator of the Washington Park Zoo concurs. “There’s always a reason, even if you can’t see it at the time. You’ve got to be able to read an animal, which is both an art and a science. It may see something as a threat that a trainer can’t see, and it may feel it needs to defend itself.”³⁹

“For those who know how to read animal behaviour,” the RSPCA continues, “this fear is apparent in almost every animal act. Ear and tail movements, facial expressions, body postures and vocalization provide a fairly accurate indication of the animal's experience. In the ring, the big cats frequently display these signals very clearly. They will often respond to the trainer's commands by slinking across the ring, belly close to the ground, ears flattened, sometimes snarling loudly.” These signs are recognized as a clear indication of fear, and aggression, “is often the first response to fear.”⁴⁰

Ethologist Dr. Marthe Kiley-Worthington says: “Disturbed, neurotic animals in pain and distress will tend to be more aggressive both to their social partners and to other species. On the other hand, as is the case with some dogs, horses and lions, individuals are known to be particularly aggressive and that aggression often increases with pain, fear, frustration and conflict.”

Interestingly, Dr. Kiley-Worthington points out that: “Isolating, confining and restricting animals is also used as a technique to increase aggression by comparative psychologists!” She adds that aggression is one of the behaviours that can be linked to psychological responses to stress. “Thus, if we have animals which are more aggressive than their wild or feral cousins, whether the aggression is directed towards other members of their own species or to other species, this is likely to be because they are distressed.”⁴¹

Some believe that animals “as a general rule are by their nature seriously aggressive and unreliable”, to which Dr. Kiley-Worthington says, “studies of animals considered very ferocious in the wild, such as wild dogs, wolves, lions, tigers, elephants and other species, indicate that the reverse is often the case. If the management of any animal husbandry system find this to be the case - whether they are dealing with mice, men,

bulls, elephants, lions or any other animals - they must reassess their management: they have got it wrong. *The animals have been made aggressive by the environment* (italics added).”

She concludes by quoting Daphne Sheldrick from *Beyond the Bars*, “if [the animal] is difficult, aggressive and vicious, then there is a good reason for it, for elephants under normal circumstances are not naturally so...,”⁴² which seems to support the general view of elephants, *under normal circumstances, e.g., in the wild*, as peaceful gentle animals.

Predatory Aggression. In the case of lions and tigers, predatory aggression is also a concern. For example, the killing bite - a biting attack using violent shaking or suffocation to kill prey - is hardwired in all predators.

Hardwired behaviour sequences are called fixed action patterns because the sequence of behaviours is always the same. These fixed action patterns, says animal behaviourist Dr. Temple Grandin, are turned on by ‘releasers’. In predators, rapid movement is a releaser that turns on predatory chasing and biting.

For example, if a handler suddenly falls, bends down or drops a tool, the sudden movement - the releaser - triggers an attack.⁴³

Environmental Control and Change. How much control an animal has over its environment is another factor to consider. Whereas a free-living animal is able to control the amount of incoming stimulation, in captivity it cannot.

For example, in the wild an animal can approach, attack, chase, explore, escape, avoid or hide from stimuli it encounters until the stimulation is brought to an acceptable level. It can control its microclimate by moving either into the sun or shade. It can also satisfy appetitive motivation by actively seeking food, shelter or a mate. But in captivity, these stimulatory events are controlled by the keepers on schedules of their choosing and not by the animals.⁴⁴

Although novelty and uncertainty may be aversive at times, not all novel or uncertain stimulation is negative. Many animals perform exploratory, appetitive, and play behaviours that allow them to encounter new or unexpected objects or situations, and they investigate novel stimuli presented in familiar surroundings.⁴⁵

In laboratory experiments giving rats a choice between novel and familiar environments, the rats, under normal circumstances, choose the novel, and will learn operant tasks to produce a variety of stimulus changes.⁴⁶

Opportunistic animals, like the rats above, can be described as neophilic, and specialist animals, neophobic. The lion (a specialist) has a low level of curiosity, whereas rats or dogs (opportunists) are more curious. Thus, some animals may respond negatively if exposed to an environment that fails to meet its needs for stimulation or may become aggressive when changes occur at all.⁴⁷

“Like humans,” explains former elephant keeper R.J. Ryan, “[elephants] are creatures of habit who can become unruly when changes occur in their daily routines.”⁴⁸ In an environment low in stimulus diversity however, opportunistic animals will find it difficult to exert control over the stimulation to which they are exposed.⁴⁹

Animals chronically deprived of stimulus diversity may respond poorly when highly stimulating, novel situations arise.⁵⁰ This may explain sudden outbursts of aggression from animals such as lions, tigers and elephants that prefer little or no changes in routine but are nevertheless inundated with 'disturbing' stimuli at circuses (i.e., bright lights, loud music, fireworks and excited children), and in primates which prefer novelty and variety yet will never receive it within the confines of a small cage.

Stereotypies. Described as any movement pattern that is performed repeatedly, is relatively invariant in form, and has no apparent function or goal,⁵¹ stereotypies seem to originate in behaviours that represent attempts by the animal to control its environment, such as escape attempts, *aggressive acts against caging*, and patrolling a territory.⁵²

Stereotypies, long considered an indication of poor welfare,⁵³ are common in circus animals but are rarely observed in wild, free-ranging animals. This is because stereotypies often develop in situations known from independent behavioural and physiological evidence to be aversive and stressful, such as low stimulus input, physical restraint, or inescapable fear or frustration.⁵⁴

Some stereotypic behaviours in zoo and farm animals occur when the animal consistently is unable to reach a particular goal by performing an appetitive behaviour. In a study of the frequency of stereotypic behaviour of 19 Asian and 6 African female elephants held in paddocks of five circuses, 65.5% of the elephants showed weaving stereotypies.⁵⁵

Stress in Captivity. While stress⁵ is experienced by both wild and captive animals, if persistently recurring environmental events that an animal perceives as aversive and is unable to control or predict, or protracted aversive events such as separation, loss of attachment, or close confinement, it may result in chronic elevations of adrenal hormones and stress-induced aggression.⁵⁶

Temple Grandin relates a story of a Border collie, living in a dysfunctional household that included a hyperactive teenager who could never sit still, demonstrated violent aggression by eating her puppies after having to endure a long car trip and adjusting to life in a new home. Dr. Grandin notes that even a relatively minor irritant such as a flea infestation can trigger stress-induced aggression in animals.⁵⁷

⁵ Stress: “*physical, mental, or emotional strain or tension, or a specific response by the body to a stimulus, as fear or pain, that disturbs or interferes with the normal physiological equilibrium.*” (Webster’s College Dictionary. Random House, New York, 1996, p. 1322)

Increased stress levels of animals moved around and used in traveling performances can affect the animals' behaviour and contributes to aggression. According to Anne Russon, "These animals will tend to be more aggressive and irritable and behaviourally abnormal than animals living in a less stressful setting."⁵⁸

One of the most obvious chronic stressors for a confined wild animal is the inability to respond to fearful situations with active avoidance or escape responses.⁵⁹ Studies on various social species have shown that isolation can be a strong stressor as well, causing a range of physiological and behavioural symptoms that suggest the experience is unpleasant,⁶⁰ and attempts to escape, which can develop into stereotypic behaviours.⁶¹

The unexpected removal of a social companion is also a potentially strong stressor in several highly social species.⁶² Indeed, the temporary removal (for 30 minutes) of a female elephant from a zoo group elicited reinstatement behaviour including locomotion and vocalization in all remaining elephants, most notably in the preferred social partner.⁶³

Aggression directed towards elephants or inanimate objects, and stereotypic behaviour was also observed after separation, which may indicate frustration (displacement behaviour) and arousal.⁶⁴

One might also expect aggression directed towards those responsible for the removal of a companion as well. In addition, and what is perhaps even more stressful for the animal, is that in captivity it must endure the shock of meeting new animals, conspecifics and otherwise, including people.⁶⁵

Studies on enclosure size have also shown that small enclosures can be associated with indicators of poor welfare, such as the performance of stereotypic behaviours and high stress levels.⁶⁶

Bears, for example, become bored and show abnormal behaviour in over-restricted enclosures, even when provided with environmental enrichment,⁶⁷ while elephants that have limited space or are shackled are said to behave more aggressively towards humans and conspecifics than elephants able to move around freely.⁶⁸

Confinement. Animals kept in captivity or semi-active captivity - an abnormal environment - often show behaviour that, under the circumstances makes no sense - it 'misfires'.⁶⁹ Therefore, animals in captivity are forced to adopt abnormal behaviour patterns.

For example, aggression in animal species [in the wild] rarely leads to killing [conspecifics] or even to harm, partly because each species has a delicately balanced attack and escape behaviour. But in the zoo it is well known that aggression can be exaggerated and often lead to severe injury and death.⁷⁰ Crowded conditions, particularly amongst mammals, are also often associated with adrenal hypertrophy and psychotic behaviour.⁷¹

Dr. Hugh Chisholm, DVM, also raised concerns about keeping elephants in circuses. “When elephants are transported into an urban centre for an event or attraction, they are routinely confined to small enclosures and frequently chained by their legs to restrain them. Although this is done for safety reasons, it is well understood that excessively long periods of confinement stresses these animals. This may increase their tendency to become violent.”⁷²

Roocroft and Zoll, in their book *Managing Elephants*, agree. “The difficulties in confining elephants in zoos can be summarized in three explanatory categories: a) inadequate space to allow necessary physical exercise; b) insufficient opportunities to use a superior intelligence; c) social deprivation, as the elephant is an intensely social animal but is rarely kept in zoos as a part of a functioning social group.

These are serious inadequacies which lead to aberrant behaviour in many elephants, increased aggressiveness or, alternatively, a dull lethargy that results from a lack of physical and psychological stimulations.”⁷³

Ron Kagan, Director of the Detroit Zoological Institute, warned of the dangers of keeping elephants in circuses stating that elephants that live on the road are deprived of appropriate physical and social environments.

*“Constant travel, daily and prolonged chaining and rigorous physical training are all stressful and harmful to elephants,” he said, which may lead to public safety risks. “Numerous injuries and deaths (both to people and elephants) have occurred when they are forced to perform.”*⁷⁴

The Escape Drive. The most important drive of free-ranging animals is the escape drive. Escape behaviour is decisive for survival of the individual and of the species and is highly adaptive. Animals captured and transferred to a zoo may show the most violent escape reactions, not caring whether they even injure themselves.⁷⁵

As described earlier, the key biological principle involved in understanding and dealing with escaped animals is called the flight distance. This is the minimum distance between an animal and a potential enemy that will be tolerated by the animal before it takes evasive action. There are several factors that operate to increase the flight distance or tendency to flee (discussed later under Animal Escapes).

Social factors may also enhance abnormal escape reactions. If a new animal is introduced to a group of conspecifics it is often chased around or attacked. The “owners” of the cage or enclosure rarely accept an unfamiliar individual without reacting aggressively toward it at the beginning.⁷⁶

The capture and restrained life of captivity may also repress the impulse of self-defense. The thwarted drive then suddenly finds an outlet in an attack upon the first “adversary” at hand. This could explain sudden and seemingly unprecipitated attacks by performing

animals such as lions, tigers and elephants towards their trainers if the animals view them as ‘rivals’, ‘threats’ or ‘competitors for territory’.

Other Factors. Some abnormal behaviours (meaning behaviours uncommon or absent in free-living animals) commonly observed in captive mammals may be the result of overcrowding in the cage or enclosure⁷⁷ or of emotional arousal that has no appropriate behavioural outlet and becomes redirected to other objects or individuals. Sudden explosions of aggressiveness may sometimes occur among animals that have lived together in apparent harmony. Man may also be involved in such sudden attacks; captive adult elephants have repeatedly caused the death of a keeper.⁷⁸

Elephant behaviours may become abnormal due to environmental and social deprivations.⁷⁹ For instance, if the environment is restricted and impoverished because of lack of complexity or objects to play with, or an inability to escape or a lack of opportunity to fulfill basic desires, then one can expect abnormalities of behaviour and abnormalities of brain development in those born in that environment. Even hand-reared animals become antisocial or asocial and may show offensive or defensive aggression.⁸⁰

Roocroft and Zoll point out while some animals may be temperamentally unreliable,⁸¹ all elephants possess both a “retaliatory cunning and a sense of outrage that go far beyond the capabilities of other trainable species.”

They explain that most animals are incapable of postponing retaliations against a ‘supposed prejudice’, but elephants can do this. An elephant’s intelligence “enables it to harbour grudges and await propitious moments for retribution,” and, “elephants appear to have a sense of ‘outrage’ uncommon in other species, intense wounded feelings that may prompt them to display indignation in various ways,”⁸² (discussed in more detail under Training Methods).

Hart (1994) also notes that mahouts (traditional drivers and trainers from Southeast Asia and India) recognize “poor welfare, poor or insufficient food, excessive work, or having to respond to too many different people” as causes of aggressive outbursts in their elephants.⁸³

POTENTIAL DANGERS OF CLOSE CONTACT WITH CIRCUS ANIMALS

In July of 1990, an elephant attacked a keeper with 7 years experience at the Oakland Zoo, pinning her hand against the wall with its tusk. The result was the loss of two fingers from the keeper's hand.⁸⁴ Tarzan Zerbini, owner of the Tarzan Zerbini Circus, once suffered a broken arm and required over 500 stitches after being attacked in the ring by his 800-pound lion.⁸⁵

Danger Potential. Some of the attacks made by wild elephants on people include “elephants knocking down their victims with the trunk or picking them up and flinging them in the air for considerable distances or bashing them against trees.”

Other enraged elephants have trampled people or knelt on them, at times crushing them into an unrecognizable pulp. People have also been gored and impaled by the tusks and in rare cases, “elephants have dismembered their human adversaries and proceeded to attempt to bury them.”⁸⁶

In captive situations, more injuries occur to handlers from blows with the trunk.⁸⁷ The trunk may be used as an offensive or defensive weapon, snatching an arm, leg, neck or an entire person, or can be used to throw objects such as feces, rocks, pieces of wood and other projectiles at people. An ‘elephant slap’ can result in fractured facial bones or ribs, or in knocking a person off their feet.⁸⁸

Aside from injuries from the elephant's trunk, injuries occur from handlers being slammed into walls and stall partitions, being head butted, which can propel the victim forward or backward, and elephant kicks. Elephants are adept at kicking with their hind legs, which are usually directed backwards. The speed with which a kick is administered is astoundingly fast.

Although appearing to be slow, elephants can actually move quite quickly when they choose to. Their bulk belies the speed with which they can whirl and charge, stomp with the feet or slap with the trunk.⁸⁹

Tusks, as mentioned above, are an obvious hazard, and have been used to gore unwary victims or crush them against a wall. Another concern is that elephants are continually moving from one foot to another, and a handler or groom not paying attention can easily be stepped on, purposely or by accident.⁹⁰

Most of these attacks, some say, are the result of brief displays of temper or annoyance and not attempts to decisively attack or destroy the handler. Like most other animals, they are not implacably ‘mean’ and bad behaviour is usually the result of clumsy training or even abuse. Though fits of temper are common with many large domesticated animals, “the consequences with an animal of the elephant's size and power are far more dire.”⁹¹

Animals in musth should also be considered highly dangerous. “Captive domesticated bulls [in musth] are no exceptions,” insist Roocroft and Zoll, and are “simply untrustworthy in the great majority of cases.”⁹²

All carnivores have specially adapted tools to hunt and kill prey. In the case of lions and tigers, these tools are razor-sharp teeth, powerful bone-crushing jaws and long, sharp, retractile claws. The speed and agility of these animals should not be underestimated, since most animals can lash out with the claws much faster than a person can jump away.⁹³

In addition, these animals have a mobile head that can reach forward or to the side quickly to bite. A lion or tiger is quite capable of killing a person who becomes careless when approaching or handling them.⁹⁴

Although bears do not possess the sharpened claws and teeth of lions and tigers, their strength more than makes up for it. Mature bears are capable of bending bars and tearing off screens with their heavily clawed paws and they have been known to kill animals with a single swat.⁹⁵

On the other hand, primates defend themselves mainly by biting. They have strong jaws and large teeth with well-developed incisors. A secondary defense is scratching; primates have strong fingers and hard fingernails, and scratches can be quite painful. Medium-sized primates like macaques may also severely pinch and contuse any tissue they can reach.⁹⁶

Handlers should also be mindful of the clothing they wear, as primates' combined strength and finger manipulation could cause serious injury. Primates have also been known to throw objects at people with incredible force and accuracy. Infectious diseases are also a concern with captive primates. Protective clothing, masks and rubber gloves when handling primates are strongly recommended.⁹⁷

Zoonoses. There is always a risk of disease transmission when humans come into contact with animals. Diseases spread from animals to humans are called zoonoses.

Tuberculosis is found in both species of elephant and a prevalence of 3.3% has been estimated for the North American population.⁹⁸ *Mycobacterium tuberculosis* is the human form of the disease and is thus considered zoonotic in elephants,⁹⁹ as it can be transmitted to and from humans.¹⁰⁰

It is believed that animals infected with *Mycobacterium tuberculosis* are either exposed while in their native country or while in close contact with infected handlers in circuses and zoos.¹⁰¹ Close daily contact is considered to be the major risk factor for humans and elephants alike, and therefore the method of handling is likely to affect transmission.¹⁰²

Salmonellosis is the most notable among the disease risks presented by reptiles; diagnosis may be difficult and therefore all reptiles should be treated as salmonella carriers. Avoiding all direct contact with reptiles or surfaces with which they have come in contact with can reduce risks of transmission or by allowing only supervised contact followed by hand washing.¹⁰³

For the general public, the risk of contracting disease from most zoo animals is minimal to non-existent due to their distance and isolation from the animals (although in contact areas, the general public is at an increased risk). Avoiding direct animal contact can markedly reduce risks of zoonotic disease.¹⁰⁴

An alternative to avoiding direct contact is adequate hand washing, which is perhaps the single most effective personal hygiene procedure for reducing risk of infection (other than non-contact). Given that fact, all areas in which the public has direct contact with animals should have access to hand washing facilities that are in the immediate vicinity

of the contact (or an equivalent; e.g., bacteriocidal hand-wipes). Animals that are ill should never be exposed to the public.¹⁰⁵

Human contact with exotic animals, which occurs at many zoos, tends to be more carefully monitored and supervised than at the circus. It could be argued then, that the risk of disease transmission may be greater at circuses than at zoos. Also, all animal circuses use free contact training. Elephant rides and photo sessions are also part of the circus repertoire which could put circus workers and the public at risk.

For example, on May 16, 2002, the USDA instructed the Tarzan Zerbini Circus to “discontinue traveling with Luke” (a male Asian elephant) who tested culture positive for *Mycobacterium tuberculosis* on October 23, 2000.¹⁰⁶

Non-compliance with The Guidelines for the Control of Tuberculosis in Elephants included monthly cultures that were not taken, adequate blood levels that were not met, and records certifying that the elephant appeared clinically normal were not available. The USDA, in the interest of public health, strongly recommended that the elephant handlers who had worked with Luke should be retested for tuberculosis.⁶

In another case, John Cuneo, owner of Hawthorn Corporation, was ordered to pay \$60,000 for not complying with the U.S. Animal Welfare Act when two of his elephants contracted tuberculosis. Hawthorn Corporation leases performing animals to various circuses, many that visit Canada. The USDA found that John Cuneo failed to “establish and maintain a program of adequate veterinary care.”¹⁰⁷

“What we're concerned about is tuberculosis transmission to humans,” said Charles Shields of the Occupational Safety and Health Administration. John Cuneo’s license was also suspended for 45 days.¹⁰⁸

Dr. Joel Maslow, Chief of Infectious Diseases at the Philadelphia Veterans Affairs Medical Center, believes the risk to the general public of contracting tuberculosis from elephants is exceedingly small, and that “Elephants are not considered to pose a risk to the general public with regard to TB, particularly when they are monitored and treated per the Guidelines,”¹⁰⁹ and there in lies the problem. When the guidelines are followed, the risks are reduced. But often the guidelines are not followed, as with the above-mentioned Hawthorn Corporation, which failed to provide workers with protective clothing and failed to label a barn that housed an infected elephant.¹¹⁰

The USDA reported another example of failing to comply with health and safety standards on August 18, 1999, which found that two Hawthorn elephant handlers had not been tested on a yearly basis for tuberculosis. Inspector Jan Baltrush found that Hawthorn

⁶ Elizabeth Goldentyer, DVM (Regional Director, Animal Care - Eastern Region) sent an additional letter on June 25, 2002, as did Robert Gibbens, DVM on July 1, 2002. Dr. Gibbens informed the Tarzan Zerbini Circus that six other elephants (three traveling in Canada) had been in prolonged contact with the tuberculosis-infected elephant (Luke) within the last 12 months. Note: these three elephants would likely have been in direct physical contact with grooms, trainers and the public.

Corp. was in violation of Section 2.125 of the *Animal Welfare Act*, which requires yearly TB tests on all elephant handlers and the results of those tests be available for inspection.¹¹¹



Photo 2 - Tarzan Zerbini Circus – Credit: Daniel Wilson

Elephants are not the only concern. Inspector Bert Vissers expressed his apprehension to kangaroos being used for photo sessions at one particular circus. “It is a concern that circus management will use whatever animal is available for picture taking purposes. It is by and large felt that this activity puts the general public at undue risk from either zoonosis or injury, especially when we will not know which species is used. It may be appropriate to make the public's well being a priority and prohibit this activity altogether.”¹¹²

It should also be noted that circus patrons - particularly those participating in the elephant rides or the photo sessions with elephants, kangaroos or other animals - are not warned about the risks of disease transmission nor are they instructed to wash their hands after contact with the animals - in particular the snakes that are often used for photo sessions - by members of the circus staff. This clearly puts everyone in contact with these animals, as Inspector Vissers puts it, at undue risk.

Contact with the Public. As earlier noted, it is common for zoos to exhibit animal species that are potentially dangerous. These animals could inflict serious injury or cause death should they come into direct contact with people.¹¹³ However, in circuses with performing animals, safety considerations are not always a priority.

“Stand-off barriers of a minimum distance of two (2) metres from the temporary housing, must be used when non-domestic species are in the company of the general public.”¹¹⁴

Yet on July 21, 2000, the Tarzan Zerbini Circus, while touring in Halifax, Nova Scotia, invited people “to have their picture taken with one of the elephants WITH NO BARRIER WHATSOEVER,” wrote Inspector Vissers. He added, “... adults and children stood underneath the elephant's head, in front of the elephant's front legs. Some people had physical contact with the elephant as they petted her. Had the elephant become startled, this situation could have been a disaster.”¹¹⁵

Vissers expressed his concerns to the Shrine Circus promoter as well.

“The public was encouraged to have their picture taken with one of the elephants during the show's intermission. This resulted in many children standing under the animal's head, either touching or being very close to the animal's trunk and front legs. This puts the public at undue risk and is in violation of section 16.1.D. sub-section D.1.”

This section reads, in part, that the general public *must never have access to the elephants.*¹¹⁶

At a performance of the Garden Bros. Circus on March 6, 2005 in Toronto, the safety barrier erected for the elephant rides consisted of 1/2 inch thick rope tied together and fed through eyelets at the top of several metal posts. Spectators standing near the rope attempted to touch the animals, which were approximately 5 to 6 feet away from the public at any given time.

At least one person was observed making tactile contact with the elephant, which put not only the passengers on it at risk, but everyone in the area had the animal become startled and decided to bolt. The handler, busy watching over the two elephants, did not notice.¹¹⁷

During the intermission, the rope came apart and lay on the floor, allowing members of the public to walk right up and approach the elephants if they chose. Again, the handler did not notice. Also, no warning signs were posted informing the public of the dangers of getting too close to the elephants and that they should not be touched, for health, safety or other reasons (see A Day at the Circus).

Officer Sofranko of the USDA noted a similar situation at the Sterling & Reid Circus in 2001.

“During the rides, there is one handler on the ground with the elephants. Four elephants, including the ride elephant are in the same enclosure. The other three elephants are not restrained during the rides. While another employee of the circus loads passengers onto the elephant, the handler on the ground is often not in close proximity to the ride elephant. During one

period, he was seen using a power washer to wash another elephant while children were being loaded onto the ride elephant. At this time, he had his back to the loader and the ride elephant. He could neither see nor hear what was happening during the load process. At other times, he walked away from the immediate vicinity of the ride area to get hay for the elephants. Another time he prepared another elephant for rides by putting a ride saddle on her. For part of the public ride period, there were two ride elephants working with only one handler. The handler did not have direct control or supervision of the animals during these rides.”¹¹⁸

This was a violation of Section 2.131 (c)(3) of the U.S. Animal Welfare Act, which states, “*during public exhibition, dangerous animals such as lions, tigers, wolves, bears, or elephants must be under the direct control and supervision of a knowledgeable animal handler.*”¹¹⁹

The officer also wrote that: “Four elephants were in an enclosure consisting of an orange mesh barrier with a single strand of unenergized wire on the inside. Members of the public including young children were able to approach this barrier and were within reach of the elephants,” a violation of the Animal Welfare Act, Section 2.131 (b)(1): *During public exhibition, any animal must be handled so there is minimal risk of harm to the animal and to the public, with sufficient distance and/or barriers between the animal and the general viewing public so as to assure the safety of animals and the public.*¹²⁰

Another USDA investigator wrote about a Hawthorn Circus inspection. “When I arrived, no one was near the elephants. The flimsy orange plastic mesh was the only barrier between the elephants and the public. I observed two couples with a small child each, at different times, come close to the mesh fence while one of the elephants was close. The animal offered its trunk to one little girl, who stroked and petted the animal - no attendant present.”¹²¹

Finally, at a Garden Bros. Circus performance at Maple Leaf Gardens in February 1992, Professor Russon observed chimpanzees that were brought into the arena and led past approximately twenty people, including many in wheelchairs who had been seated inside the boards at floor level with the circus. “The chimpanzees were led right past them with no protection for these people,” she wrote. Also, “the elephants were walked directly by them, in my estimation, within 20 to 25 feet.”¹²²

This is the problem with having potentially dangerous animals in close proximity to people. Safety regulations and ‘common sense’ are only effective when applied. Tom Rider, a former employee with Ringling Bros., found that elephants considered dangerous by circus staff were repeatedly used in the shows. Nevertheless, an aggressive elephant named Pete (a.k.a. Petunia) “was used for rides before the show and during intermission carrying as many as ten children at a time on her back. She was surrounded by people waiting to ride. The only barrier between her and the public was a plastic net fence.”¹²³

ANIMAL HUSBANDRY AND HOUSING IN ZOOS

Most, if not all wild animal husbandry deeply involves either directly or indirectly, an understanding of animal psychology and behaviour. Many authors identify stress and inactivity in captive mammals as major causes of aberrant or stereotypic behaviour, reproductive failure and assorted health problems. Some of these are problems of faulty enclosure design and inadequate operations that can be resolved by an enlightened understanding of the ethological needs of the species.¹²⁴

It is also important that wild performing animals are properly and sufficiently contained and controlled to avoid human injury. Therefore, enclosures should be equipped in accordance with the needs of the animals (for example, with pools, substrates and vegetation and other enrichment materials) and designed to aid and encourage normal behaviour patterns and minimize any abnormal behaviour.¹²⁵

The Canadian Association of Zoos and Aquariums' Standards for Animal Care and Housing states that, "security must be provided to safeguard the animal collection and the general public."¹²⁶ The public, it continues, "should be prevented from directly contacting potentially dangerous animals by use of double fencing or other barriers."

This would seem to apply to elephants and other potentially dangerous animals in circuses. Circuses in Canada however are not affiliated with, or bound by the guidelines of CAZA, nor are they outfitted to provide for the animals' needs, as we shall soon see. But before we look at the circus standards for animal housing and restraints, let's look at some zoo standards first.

Zoo Standards for Elephants. According to the American Zoo and Aquarium Association (AZA), females and young males, under normal circumstances, should not be housed individually because they need contact with other elephants in order to develop proper social behaviours.¹²⁷ Adult males of both species must be housed in specialized facilities capable of safely dealing with their aggressive behaviours.

Indoor space should provide adequate room for animals to move about and lay down without restriction. A minimum of 37.2 sq m (400sq ft) is required for a single animal. Because of their greater size or space requirements, bulls or cows with calves should have at least 55.8sq m (600sq ft). Retaining barriers such as walls, moats, and railings should also be constructed with these facts in mind. Generally 3.1-3.7m (10-12ft) should be allowed horizontally between barriers and unprotected areas.⁷

An outside yard should possess at least 167.4sq m (1800sq ft) for a single animal. This area should be increased by 50 per cent for each additional animal. Yard surfaces should be made of natural substrates that provide good drainage and have a cleanable dry area for feeding. Facilities should provide a water feature that allows the elephants to cool and bathe themselves, and that is large enough for the animal to lay on its side. It may vary in

⁷ The AZA stresses that these standards are *minimal* and that every effort should be made to exceed them.

size from a shallow wallow to one large enough for the animal to submerge itself totally.¹²⁸

Door and gate design is extremely important. Both should be engineered to withstand extreme force. Steel-framed doors filled with at least 15cm (6in) of concrete have been successfully used with elephants. Because of the door's weight, mechanical opening devices such as hydraulic or electrically powered drives are usually required. Doors made of concrete are solid and provide less surface for corrosion from urine and water; metal doors are often lighter in weight and have also been used successfully.¹²⁹ The type of fencing used should take into account the animal's strength.¹³⁰

Since elephants protect their sensitive skin by dusting it with available substrates, so when the animals are kept indoors, material such as sand or dry soil should be available whenever possible. Rocks, tree stumps, or large sturdy objects should be provided for rubbing and scratching. A shade structure should also be available. Barriers such as moats can be made from a wide variety of materials so long as they are able to withstand the animals' strength. Elephants are surprisingly agile and have been known to climb over barriers 2.1m (7ft) high and over horizontal rails placed in a ladder-like fashion.¹³¹

The European Association of Zoos and Aquariums (EAZA) in comparison, recommends that outdoor enclosures be at least 133sq m (1478sq ft) per elephant, excluding safety barriers. Indoor stalls should be at least 36sq m (400sq ft) per female and 45sq m (500sq ft) per bull.¹³²

The outdoor elephant enclosure at the Toronto Zoo is approximately 5880.6sq m (65,340sq ft) for 7 female Asian elephants. That's 840 sq m (9334sq ft) for each elephant. It also features a clay-bottomed water hole, a water spray and shade structures. The indoor area measures 36sq m (400sq ft) per animal.¹³³

It's worth noting that wild elephants roam over very large areas, as mentioned earlier, about 60-100 times the size of the minimum recommended outdoor enclosure size.¹³⁴ The Elephant Sanctuary in Hohenwald, Tennessee, a natural habitat refuge developed to meet the special needs of elephants, encompasses over 10,585,080sq m (2700 acres) of diverse habitat such as lakes, forests and wallowing pits for its eight Asian and three African elephants.¹³⁵

Roocroft and Zoll believe that larger enclosures are better too, but 585sq m (6500 sq ft) per animal is a practical minimum, they say. To give one a perspective, an acre is 3920.4 sq m (43,560 sq ft) and on this basis a yard containing four elephants or 2340 sq m (26,000 sq ft) is a bit more than half an acre. This is a minimum spatial allowance; larger areas are again preferable. The yard surface can be a variety of materials and some need to be artificial in some instances. The best substrate is a mixture of sand and clay and it is desirable that portions of the ground be loose enough to allow elephants to dig and roll in the soft textures.¹³⁶

They suggest that zoos should create very much enlarged and more naturalistic forms of confinement and also maintain elephants in sufficient numbers to permit the formation of social groups. This alternative has been, so far at least, beyond the resources of any zoological park in the West, principally because the spatial requirements are formidable, beyond the scope of a conventional exhibit, and because very few zoos want or are able to maintain, say, eight elephants at a time.¹³⁷

The AZA insists that elephants be kept outside on natural substrates as much as possible and that institutions should consider designing exhibits that allow elephants outdoor access twenty-four hours a day - weather, health and safety permitting.¹³⁸ In temperate regions however, many zoo species, because of the colder climate - about 5 months of the year - are kept indoors on 70-80 per cent of days.¹³⁹

Zoo Standards for Lions and Tigers. According to the AZA, lions and tigers are easily maintained in traditional barred or heavily wired cages as well as in large outdoor exhibits employing moats to separate animals and public. A cage for a single animal should measure at least 6.1m (20ft) wide by 4.6m (15ft) deep (27.9sq m/300sq ft); cages should be 50 per cent larger per additional animal.¹⁴⁰

Outdoor cages should have vertical jumpwalls at least 4.88m (16ft) high, or be provided with tops at least 3.1m (10ft) high. All enclosures must have smaller shift facilities to permit safe cleaning, cage repair, or other separations. Shift cages should measure at least 2.44sq m (8sq ft). Although both lions and tigers are terrestrial in nature, they benefit from raised shelves or ledges for sleeping and resting. The inclusion of large logs may be used for claw sharpening.¹⁴¹

The Tiger Information Center's *Tiger Handbook* states that a tiger exhibit must be big enough to give the animal plenty of room to move about. "An exhibit with one tiger ought to be, at the very least, 30 x 50m (100 x 150ft)", and all exhibits should have night rooms where the animal spends each night, which must be about 3 x 4 m (10 x 12ft). "Every tiger in an exhibit must have its own night room"¹⁴²

At Marwell Zoological Park in the U.K. for example, outside runs for tigers are 150m, 143m and 131m (492ft, 469ft and 429ft) respectively and contain pools used for swimming, cooling and play activities. Fences are 4.5m (15ft) high with overhangs of one metre.¹⁴³

In Ontario at Orono's Jungle Cat World, the enclosure for one Siberian tiger measured 18 x 15m (60 x 50 ft), while two African lions shared an exhibit measuring 18 x 12m (60 x 40ft). Jungle Cat World is a CAZA accredited facility.¹⁴⁴

Zoo Standards for Bears. Since bears are large mammals, they require generous space allowances and because they're highly intelligent, they become bored and show abnormal behaviours. Bears should be provided with a mini-habitat that includes natural ground vegetation, bushes, trees, banks and water.¹⁴⁵

A number of larger zoo/safari parks have included other species such as deer, primates and peacocks to provide additional interest. Undoubtedly, the best enclosures for captive bears take the form of large, natural enclosures that provide topographical variation such as banks for excavating and trees for climbing. All enclosures should possess a dry resting and social area, pool and den.¹⁴⁶

Bears may be maintained in outdoor enclosures employing moats, thick laminated safety glass or bars with the safety glass at least 5cm (2in) thick. A dry resting area for one or two adult brown bears should measure at least 37.2 sq m (400sq ft); at least 3.7 sq m (40sq ft) should be added for each additional bear. For other species, 9.2 sq m (300sq ft) of dry resting and social space should be provided for one or two animals, and increased by 50 per cent for each additional animal.¹⁴⁷

Indoor enclosures for individuals other than brown bears should measure at least 1.5m (5ft) in width, depth and height. Shelves or pallets for sleeping should be provided for all species except polar and brown bears. These facilities should be ventilated by natural or artificial means to provide a flow of fresh air. Bears must never be transported in hot weather, because they are very susceptible to hyperthermia.¹⁴⁸

When transportation of an animal does occur, a crate should be placed, well secured, in front of the cage and installed at least a week or two prior to moving the animal so it has ample time to become familiar with it. Positive reinforcement, such as offering food in the crate, will accelerate habituation.¹⁴⁹

Because adult bears become easily bored, stimulation of a variety of natural behaviours can be maintained if enrichments (including traffic cones, boomer balls, etc.) are frequently changed and by modifying feeding routines such as changing the feeding times and by hiding small food items within the enclosures to encourage natural foraging behaviours. Because bears enjoy digging, patches of bare soil or grain husks may be added for novelty as well as an additional area for hiding foods.¹⁵⁰

Feeding enrichments also reduce walking and pacing in favour of manipulation, foraging and exploration, as stereotypic behaviour is commonly linked to feeding behaviour.¹⁵¹

These feeding enrichments – and all the above-mentioned enrichments, stimulations, enlarged and naturalistic enclosures - may also help to reduce the animals' tendency to seek other means of stimulation, which could include attacks on the keepers.

Zoo Standards for Primates. Species within this order differ greatly in size, morphology, diet and social structure. Primates, with very few exceptions, are social animals and should not be housed alone, except for medical reasons.¹⁵²

Minimum size and composition of social groupings in captivity should reflect those found in nature. Exhibits should provide the amount of space necessary to promote natural and normal behaviour within the social group. Quality exhibit space of sufficient size can reduce boredom, aggression, and stereotypic behaviour.¹⁵³

While stressing that these standards are minimal, not optimal, the AZA recommends that cercopithecids like the macaques, would require an exhibit approximately 3 x 3 x 2.5m (10 x 10 x 8ft). These monkeys tend to be active, strong, and persistently manipulative. They will attempt to disassemble or chew apart any exhibit they are in, so great care must be given to the structural integrity as well as to the materials used.¹⁵⁴

Cages should be furnished with horizontal pathways, shelves, and comfortable perches above floor level. The use of hay on the floor will encourage natural foraging behaviour and provide occupational therapy when seeds, grains, raisins, etc. are scattered through it. Non-toxic natural tree branches provide a replaceable material that keeps animals occupied.¹⁵⁵

As Capuchins can live in troops of up to 70 individuals in the wild, the AZA suggests that exhibits for pairs of these primates and offspring should measure at least 2.5 x 2 x 2m (8 x 6.5 x 6.5ft). Trios of one male and two females (if appropriate) and their offspring totaling up to 5 animals should be maintained in a space of 4 x 2.5 x 2.5m (13 x 8 x 8ft). As the number of offspring and adults increase, the cage size should increase accordingly.¹⁵⁶

Perches should be available at all times to permit the animals to move laterally about the exhibit, and from the floor to the ceiling of their cage or island. Ledges located at various heights should also be present for resting and sleeping. Visual barriers are desirable as a means to temporarily escape conspecifics or the public.¹⁵⁷

Restraints. Chains have been used to restrain zoo elephants for many years and began in Europe in the latter half of the 19th century.¹⁵⁸ Chaining is used in two circumstances: during close contact with humans, for instance during routine foot care, washing and minor medical procedures carried out by a veterinarian and when elephants are confined overnight in indoor enclosures. Chaining in the former situation is short-term and only lasts as long as the procedure, whereas elephants may be chained for a considerable period overnight.¹⁵⁹

Elephants are usually chained by two opposing feet and regularly alternated to prevent rubbing. There are several reasons for overnight chaining, the primary ones being to prevent aggression between elephants while they are confined indoors, and to prevent accidents. Another reason appears to be historical, as chaining was originally introduced to enable more elephants to be kept in a small space.¹⁶⁰ This is the reason many elephants are still chained overnight today.¹⁶¹

Chaining is considered by the AZA as an acceptable method of temporary restraint,¹⁶² however it does stress that elephants should not be subjected to prolonged chaining (for the majority of a 24-hour period) unless it is necessary for veterinary treatment or transport. Incidentally, chaining does not occur in timber camps in Asia.¹⁶³

As mentioned earlier, elephants in colder countries can spend up to 16 hours or more a day chained,¹⁶⁴ with the animals spending the majority of time in 36-45sq m (400-500sq ft).¹⁶⁵

Various studies have shown an association between chaining and the frequency of stereotypic behaviour. Gruber et al. (2000) and Schmid (1994) found far lower levels of stereotypic behaviour when circus elephants were in paddocks compared to when they were chained.¹⁶⁶

Female and young elephants in captivity are restrained with chains, chemical sedation, or immobilization, mechanical restraint devices, or combinations thereof. Because male elephants experience periods of musth and often become aggressive, as do some females, owners should be prepared to manage them in a protected or confined contact situation and possess mechanical restraining devices prior to animal acquisition.¹⁶⁷

In the case of big cats, handlers may be able to restrict activities by the use of snares or special chains such as snap chains. The trainer handling an animal in this manner must be fully capable of restricting the animal. Bears on the other hand have tremendous strength, and have been known to bend bars and tear off screens with their heavily clawed forepads. Nets or snares may be used to restrain immature bears, but mature bears should only be handled by use of special squeeze cages or by chemical restraint.¹⁶⁸

CIRCUS STANDARDS FOR HOUSING ANIMALS

According to William Johnson, circus lions, tigers and bears are typically kept in ‘beast wagons’, which serve as their living quarters while on the road. These unfurnished cages may be made of wood or steel, with bars on all four sides.¹⁶⁹

These cages, the RSPCA states, “are designed only for transportation,” and must, by definition and design, “always be inadequate,” since they offer no outlet for the animals’ instincts to explore, play, or hide away from the public when stressed,¹⁷⁰ and since many of the animals spend the majority of their time on the road in them (see below).

Circus standards for space requirements and husbandry are quite different than standards for zoos. In Canada, only the province of Nova Scotia has formal standards for circuses that use animals, and standards in the United States fall under the jurisdiction of the USDA's Animal Welfare Act.

For example, the *Nova Scotia's Standards For Exhibiting Circus Animals* states that a single or pair of elephants is required to have 600sq m (6500sq ft) of space, with each additional elephant having 200sq m (2150sq ft). The minimum width of each display must be 10m (32ft). It also states that “elephants must be confined in a compound by electric fencing for the majority of daylight hours when at the performance site”; the minimum floor space for big cats should be 20sq m (215sq ft) for the first animal, and 10sq m (105sq ft) for each additional cat. The minimum height of the cage should be 3m (10ft), and the minimum width should be 3.6m (12ft).¹⁷¹

The Animal and Plant Health Inspection Service, or APHIS, is an arm of the United States Department of Agriculture that oversees the care, treatment and transportation of animals in circuses, among others.

Although specific size requirements for keeping wild performing animals are not listed, a general overview of how animals are to be kept is. In regards to public safety, Section 3.125 (a) states:

“[the] facility must be constructed of such material and of such strength as appropriate for the animals involved. The indoor and outdoor facilities shall be structurally sound and shall be maintained in good repair to protect the animals from injury and to contain the animals.”¹⁷²

Under space requirements, Section 3.128 calls for all enclosures to be:

“constructed and maintained so as to provide sufficient space to allow each animal to make normal postural and social adjustments with adequate freedom of movement. Inadequate space may be indicated by evidence of malnutrition, poor condition, debility, stress, or abnormal behaviour patterns.”¹⁷³

Section 3.135 (a) and (c) state that the handling of animals shall be done:

“as expeditiously and carefully in a way so as not to cause unnecessary discomfort, behavioural stress, or physical harm to the animal. Care should be exercised also to avoid harm to the handler. During public display, the animals must be handled so there is minimal risk of harm to the public with sufficient distance allowed between animal acts and the viewing public to assure safety to both the public and the animals.”¹⁷⁴

It is important to note that the above standards are designed not only to provide for the welfare of the animals, but also to protect the public. Indeed, animal welfare is related to public safety, since a disregard for the former can have serious repercussions on the latter.

DIMENSIONS OF ACTUAL CIRCUS ANIMAL ENCLOSURES

Information about actual enclosure sizes at circuses comes from various sources. For example, in 1986, an Environment Canada Temporary Entry Certificate for Circus Vargas listed lion and tiger cages at 60” long x 46” wide x 46” high, (or less than 20sq ft).¹⁷⁵



Photo 3 - Tarzan Zerbini Circus - Credit: Zoocheck Canada

Investigators at the Tarzan Zerbini Circus in Halifax in July of 2000 found that the transport cages for their big cats measured 54” wide x 90” long x 36” high, and had a fiberglass floor installed for easy cleaning. As for the elephants, the transporter measured 48’ x 7’6” for all three. The display housing, or outside enclosure area, measured 100’ x 80’, with a shade area of approximately 48’ x 30’, secured by two electric wires at heights of 42” and 77” respectively.¹⁷⁶

The sizes and features of the cages, as well as husbandry practices may vary from circus to circus, and year to year, sometimes even within the same circus. For example, the Calgary Humane Society in March of 2004 reported that the Tarzan Zerbini Circus had big cats housed in rolling cages (beast wagons) measuring 5’ wide x 7’ long, with sliding doors for entering/exiting, with a perch and wooden floors. One cat was housed in each cage.¹⁷⁷

The circus also had three elephants in an enclosed area that measured 70’ x 20’ with an electrified fence. The elephants were chained with 6-foot-long padded chains. They were chained in a row and sawdust was sprinkled on the ground. The constable conducting the inspection ascertained the longest time the animals were traveling was 9 hours.¹⁷⁸

The same circus, visiting Truro, Nova Scotia in July of the same year, reportedly transported three elephants in a transporter measuring 42’ x 10’ x 11’, with the outdoor display area divided into two areas “due to animosity amongst two elephants.” Each area measured 90’ x 42’ and 90’ x 75’ respectively, and consisted of an area with grass (60% of the area), asphalt and gravel substrate. While in the outdoor area, reported the investigator, the animals were not shackled.¹⁷⁹

When the George Carden Circus visited Truro a few years earlier, Department of Natural Resource inspectors noted the area of the transport used for the elephants was 10’8” tall, 18’10” long and 7’7” wide. Five bears were also transported, in an area divided into three

cages: two for the 3 brown bears and one for 2 black bears, with each cage measuring approximately 25sq ft. The investigators wrote that the *bears were caged for over 23 hours a day and were only released to perform* (italics added). The elephants were chained most of the day and night and again, only released to perform in the circus ring.¹⁸⁰

According to the Toronto Humane Society, “Killer Willard”, an 8-year-old red kangaroo that was traveling with the Fossett Family in 1988, was transported to and from the performing area of the Canadian National Exhibition in a wooden wheeled box measuring 3’ x 2’ x 6’; the trailer it was housed in measured 6’ x 5’ x 7’.¹⁸¹

As the George Carden Circus toured British Columbia in 1991, four young bears were kept in a cage measuring 6’ x 8’ x 7’, and each of the older bears was housed in a 6’ x 4’ x 7’ cage, equipped with a 6’ x 1.5’ platform approximately 4’ from the floor.¹⁸²

In Toronto at the Garden Bros. Circus in March 1994, 12 elephants were kept in two fenced-off areas using crowd control barriers. All the adult animals were chained in a row, by one front leg and one back leg. The chains around the animals’ legs were 2” thick, but had no padlocks. Officers noted that the animals ate, slept and defecated in same position.¹⁸³

Meanwhile, ten adult Siberian tigers were housed in four 8 x 10ft trailer cages with 2 to 3 tigers per trailer, with one side of the trailer, which was barred, open for public viewing, and twenty rhesus monkeys were also kept, in stationary cages approximately 1 ½’ wide x 2’ tall x 2 ½’ deep.¹⁸⁴

Five of the six sides were solid panels with the front door being a “grid pattern.” Each unit contained a single animal, and space was limited in each cage, without enough room for the monkeys to stand on hind legs only. They could, however, turn, squat or lay down. No removable partitions were noted between the cages (precluding any opportunity for social interaction), and some animals wore choke-chain collars with leashes attached, though they were not tethered to cage. Furthermore, no enrichment or stimulation devices were seen in any of the cages.¹⁸⁵

Four months later, Animal Control Services observed four Indian elephants in Toronto at the same circus. Three were in one section approximately 50’ x 50’ and enclosed by snow fencing on three sides and a tractor trailer on the other; the other section was 75’ x 50’, enclosed by a rope barrier and being used for elephant rides. The three elephants were standing on cement, with sawdust scattered for urine absorption. All the animals were chained in the usual way but they were not shaded from the sun.¹⁸⁶

The second section for the elephant rides had a grass surface, and approximately 60% was shaded by trees. The elephant was equipped with a saddle that accommodated five to six children. Inspectors witnessed the animal handler using an ankus, “presumably for steering purposes,” on the upper part of the animal's left leg, tugging the skin.¹⁸⁷

VIOLATIONS OF CANADIAN AND U.S. STANDARDS

As mentioned earlier, the United States *Animal Welfare Act* states that *primary enclosures used to transport and house tigers must be structurally sound and maintained in good repair to protect tigers from injury and to contain the animals.*

Yet on May 27, 1999, regarding a Ringling Bros. performance in Pennsylvania, USDA Inspector Robert Markmann reported finding tiger enclosures needing repair, and the majority of the front and rear sides of the cages housing the tigers *without locks* (italics added).¹⁸⁸

A few months later in Nova Scotia, Inspector Vissers informed the elephant handler and promoter of the Shrine Circus that it was in violation of size requirements and that those requirements must be met at its next venue. When the DNR arrived in Truro (the next destination), the inspector noted the elephant enclosure was still much smaller than was required under the Standards.¹⁸⁹

“It was obvious that our direct order had not been followed,” Vissers wrote in a letter to Barry Sabean at the DNR. The inspector also indicated that he was “not made aware of this until the following day at which time the circus had already moved on to New Brunswick.”¹⁹⁰

More to the point of human safety, Veterinary Officer Denise Sofranko reported that the Sterling & Reid Circus, in Marne, Michigan in June 2001, kept four elephants “in an enclosure consisting of an orange mesh barrier with a single strand of unelectrified wire on the inside.”¹⁹¹

Officer Sofranko also wrote “Members of the public including young children were able to approach this barrier and were within reach of the elephants.” She notes that this is a violation of Section 2.131 (b)(1) of the Animal Welfare Act, which states: *During public exhibition, any animal must be handled so there is minimal risk of harm to the animal and to the public, with sufficient distance and/or barriers between the animal and the general viewing public so as to assure the safety of animals and the public.*¹⁹²

Inspector John James witnessed a similar scene during a visit to the Hawthorn Circus in Littleville, Alabama in October of the same year. “When I arrived, no one was near the elephants. The flimsy orange plastic mesh was the only barrier between the elephants and the public. I observed two couples with a small child each, at different times, come close to the mesh fence while one of the elephants was close. The animal offered its trunk to one little girl, who stroked and petted the animal - no attendant present.” James writes that this is a violation of Section 2.131 (c)(3) which states: *During public exhibition, dangerous animals such as lions, tigers, wolves, bears, or elephants must be under the direct control and supervision of a knowledgeable animal handler.*¹⁹³

Inspector James continues. “At 2pm on 10/02/01, the elephants were inside an orange plastic mesh “fence”. It was down in two places, on the north and northeast ends. Police

Chief John Gillette informed that earlier in the day at least one animal was outside this enclosure.” He adds that: “Two animals were completely free from any restraint,” a violation of Section 3.125A under Structural Strength: *The facility must be constructed of such material and of such strength as appropriate for the animals involved. They must be maintained so as to protect the animals from injury and to contain the animals.*¹⁹⁴

Once again we see it is not just the vagueness of the standards (e.g., terminology such as minimal risk, sufficient distance and appropriate strength are all subjective), but also the application, or lack thereof, which constitutes a risk to human safety.

TRAINING METHODS

Free contact, protected contact, confined contact and *no contact* are the four methods of managing captive elephants, and are examined in some detail below. Bull hooks (discussed later) are the essential training/handling tool for captive elephants, but whips and other ‘props’ are used to train and handle other circus animals, such as lions, tigers and horses.

Since elephants are featured in almost every animal circus (not so with big cats, bears and primates), and since elephant attacks on humans are more prevalent in circuses than other wild animals, the focus of this section will deal primarily with elephant training methods.

Free Contact. The direct handling of an elephant when the keeper or trainer and the elephant share the same unrestricted space is considered free contact training, also known as ‘hands on’ training. The use of chains or the posture of the elephant does not alter this definition.¹⁹⁵ This is the method of training used with elephant in circuses. It is also recognized as extremely dangerous, and could become a crisis situation if there is an error in training judgment.¹⁹⁶

Roocroft and Zoll remind us that the elephant is the “least forgiving” animal to work with, and that a fleeting lack of vigilance or judgment may bring on dire consequences, because of its size and strength, even if the elephant's disobedience is no more than that of a testy horse.¹⁹⁷ As Dr. Joel Parrott of the Oakland Zoo says, “When an elephant attacks, the difference between a close call or minor injury or death is pure luck. Broken ribs versus a crushed chest is a matter of inches.”¹⁹⁸

Protected Contact. The handling of an elephant when the keeper and the elephant do not share the same restricted space constitutes protected contact. Typically in this system, the keeper has contact with the elephant through a protective barrier of some kind while the elephant is not spatially confined and is free to leave the work area at will.¹⁹⁹

This method of management was introduced under the justification of removing risk to zoo personnel and is characteristic of the management of other large, potentially dangerous animals in zoo collections such as rhinoceri and hippopotami.²⁰⁰

Confined Contact. Very similar to protected contact, confined contact involves the handling of an elephant when the keeper and animal do not share the same space, except the animal is not free to leave the work area. This means the animal may be confined by restraining chutes or Elephant Restraining Devices (ERD's).²⁰¹

No Contact. Also known as 'hands off', no contact is defined as handling an elephant with no tactile contact made unless the animal is chemically sedated.²⁰² In this sense, elephants are treated like any other large, potentially dangerous animal or when the animal is too aggressive to be handled.²⁰³

Free Contact vs Protected Contact. The primary difference between free contact (as used in circuses) and protected contact (as used in a growing number of zoos) is the training methods used.

Free contact employs traditional training methods derived from mahouts. These methods rely on the establishment of dominance over the elephants, involving the use of physical punishment (e.g., with an ankus/elephant hook) as well as restraint and sometimes deprivation, and 100% compliance is required from the elephants.²⁰⁴

Roocroft and Zoll say punishments (in free contact training) are necessary, "If there is a real issue of elementary control involved," they say, "it may be necessary to shackle an elephant and deliver corporal punishment by subjecting the animal to some reasonably vigorous strokes with a rod solid enough to be felt,"²⁰⁵ and dedicate many pages to its application.

Yet free contact training using punishments and negative reinforcers may potentially increase the risk of aggression, especially if the animal is forced to do something it does not want to. It has been shown that punishments and similar, painful stimuli induce aggression in humans and other animals, and are directed towards the person who is delivering the stimuli.²⁰⁶

These methods have been called into question recently, not only by animal welfare groups, but by prominent elephant experts²⁰⁷ and even elephant trainers.²⁰⁸

Keeper safety issues have also been raised given the number of injuries and deaths that have occurred,²⁰⁹ and that physical punishment has been associated with attacks by elephants directed at their handlers in free contact situations.²¹⁰

In protected contact training, no punishment or negative reinforcement is used (with the exception of 'time-outs' where the handler withdraws their attention for a short time or if the elephant is not cooperating or becomes aggressive, the training is ended) and participation from the elephants in training sessions is entirely voluntary.²¹¹

At the Toronto Zoo for example, only protected contact methods are practiced and the keepers have never used bull hooks (ankuses) to train their animals, relying instead on positive reinforcements and rewards.²¹²

Roocroft and Zoll argue that while the safety of human beings is assured by the “relatively crude method of walling off elephants from people,” in protected contact systems, it “fails utterly to meet the psychological needs of elephants.”²¹³

They insist the life of a captive elephant only approaches a normative standard when human participation is involved,²¹⁴ though it is not clear how a method which uses corporal punishment, negative reinforcers and the occasional “whack on the head” could benefit the animals’ psychological needs. Nevertheless, it is agreed that protected contact is safer for humans.

Many zoos are now moving to the much safer form of protected contact. Protected contact has been proven effective in managing and caring for elephants through safety barriers, without going directly in with the elephants and risking the handler’s safety. Circuses however, as Dr. Parrott points out, “by their very nature, do not have this option available because it requires special facilities.”²¹⁵

Protected contact training is also reported to reduce aggression in some elephants.²¹⁶ A study by Desmond & Laule (1991) found that the aggression of an African bull elephant, considered to be very dangerous and thus kept in a no contact situation, virtually disappeared after being trained in a protected contact system. This was attributed to the handlers ignoring any aggressive behaviour and rewarding gentle, non-aggressive behaviour.²¹⁷

Ironically, Dr. Kiley-Worthington's research of 15 circuses in Britain (and one in Switzerland), all of which practiced free contact training, led her to the conclusion that “by its nature, the training and performing of animals in circuses does not cause suffering to the animals and is not therefore necessarily cruel.”²¹⁸

Staff Training. On this subject, everyone agrees. There is a significant lack of knowledge and experience on behalf of the animal trainers and handlers in today’s circuses and zoos. And this lack of experience has a direct correlation to the injuries and attacks by animals on the staff.

“The major contributory factor to an explanation of these grim incidents [of elephant-related injuries],” says Roocroft and Zoll, “is a lack of knowledge of elephant behaviour, the inexperience of elephant handlers and momentary lapses in judgment among usually competent personnel.”²¹⁹

In Sri Lanka for example, it is reported that every seventh elephant kept in an intensive timber logging system is considered to be dangerous,²²⁰ and that mahouts only live 4 to 5 years once they start working with elephants.²²¹ Also, anecdotal evidence suggests that

unsatisfactory training methods and, possibly related to this, high staff turnover may be the causes for these incidents.²²²

For instance, the attack of a handler at the Kansas City Zoo in 1982 was attributed to inadequate staff training, which resulted from a high turnover in staff.²²³ And in Southeast Asia, one particular elephant was reported by mahouts that went from well tempered to unpredictable and aggressive, and was attributed to a high turnover in handlers.²²⁴

Dr. Kiley-Worthington also found that “Not all training in circuses was knowledgeable and skilled. There were several presenters with insufficient knowledge trying to train animals, and there were some trainers, bound by tradition, who were unwilling to learn and self-analyze.”²²⁵

Former circus employee Glenn Ewell testified that there was little or no training for the Animal Crew during his employment with Ringling Brothers. “The only instructions I recall being given was to stay away from Karen (an Asian elephant) because of her aggressive behaviour.”²²⁶

Dr. Parrott of the Oakland Zoo puts it simply. “A poorly trained elephant retains some independence and can be a very dangerous animal.”²²⁷

Punishment and Abuse in Training. Despite expert testimonies, affidavits and undercover video footage to the contrary, circus advocates still insist that abuse in training circus animals does not exist.

*“Our circus animals exhibit none of the behaviour or appearance that could be expected if they were victims of abusive treatment. If a circus were using abusive methods it would be exposed and not allowed to stay in business.”*²²⁸

This would be nice, but unfortunately it is not the case. For example, in Chicago on April 13, 2001, elephant trainer John Caudill was observed verbally abusing and hitting an elephant at the Medinah Shrine Circus in front of a group of schoolchildren. The students “watched in horror as [the trainer] swung a stick with all his force and struck the elephant in the back of the leg.”²²⁹

A woman who witnessed the incident wrote: “This must have hurt because the elephant let out a scream that could be heard throughout the UIC Pavilion.”²³⁰ Caudill, who worked for Hawthorn Corp., was later charged with cruelty to animals,²³¹ but the circus continues to operate.

Of course, no circus would willingly admit their animals are harmed or suffer in any way, as further illustrated in the same program booklet:

*“Statements by [animal rights activists] that cruel methods are used to train animals are, as a consequence, totally false.”*²³²

If circuses admitted that harsh punishments or abuse were used in the training of the elephants and other performing animals, it might threaten the industry’s very existence, or at least result in more stringent standards, animal cruelty investigations and the laying of criminal charges. It has been well documented though, for human safety or other reasons, that cruelty and punishments are facts of circus life.

Ray Ryan, former elephant keeper at the San Diego Wild Animal Park, found this to be an everyday occurrence. “The reason given most for the beatings,” he says, “was that [the elephants] had been trained like that from the beginning, and it worked, and if you didn’t maintain that level of dominance, they would take complete control over the situation and make your life a living hell.”²³³

Ryan of course was speaking from his time as an elephant keeper at a zoo, but there is no indication that in free contact situations, performing elephants are trained any differently than those in zoos. One might say that because circus elephants are in closer and more frequent contact with the handlers and the public - increasing the risk of injury if they are not absolutely controlled by the handler - the use of punishment as a method of control would be more prevalent than at a zoo.

Dr. Kiley-Worthington admits there was evidence that “individuals now and then became impatient and lost their tempers,” though she is careful not to call it cruelty.²³⁴ In fact, she says “there was no evidence that whips were used, either in or out of the ring, wilfully or excessively,” arguing that there is “likely to be more thoughtless and unnecessary whip usage at markets, on farms and in domestic animal training establishments.”²³⁵

Yet in her book *ANIMALS in CIRCUSES and ZOOS – Chiron’s World?*, Dr, Kiley-Worthington describes whip usage in a typical circus elephant training session:

*“The animals were also scolded by word of mouth when they did the wrong thing, and if this did not have the required response, it was backed up with a repositioning of the whip, or the animal might even be touched with the whip.”*²³⁶

It is difficult to say whether the above-mentioned whip usage was excessive without actually witnessing it, but the AZA states that “striking an elephant with anything more substantial than an ankus,”²³⁷ is “inappropriate,” though whips are not referred to specifically.

The Protection of Animals Act of 1911 (U.K.) however states: *If any person (a) shall cruelly (b) beat, kick (c), ill-treat (d)...torture, infuriate, or terrify any animal, or shall cause or procure, or, being the owner, permit any animal to be so used... that person shall be guilty of cruelty.*²³⁸

But elephant whipping is not considered cruel or even bad training by Dr. Kiley-Worthington. She does however admit that, although it is unnecessary, it is possible cruelty is used in circuses “because there are bad trainers in circuses, like everywhere else.”²³⁹

During the course of her research Dr. Kiley-Worthington found there was “too much unnecessary shouting, particularly from the grooms and the other animal handlers, but from some trainers too,”²⁴⁰ though she does not indicate whether or not it was aggressive shouting. In regards to the big cats, Dr. Kiley-Worthington says that trainers do “lose their temper from time to time,” when training the animals, but downplays it by saying that they, “like everyone else, are human.”²⁴¹

But are ‘cruel’ training methods and punishments towards animals linked to human safety? Schmid (1998) found, anecdotally at least, *that cruel training and taming has probably always been a major reason for accidents in elephant keeping.*²⁴² And the use of physical punishment, in this case with elephants, has been said to build up ‘resentment’ in the animals, who may lash out at their handlers at some propitious moment,²⁴³ as stated by Roocroft and Zoll earlier.

This assessment is echoed by retired veterinarian Bill Jordan. He states “... in my opinion such training (e.g. the use of electric prods for training elephants) could compromise keeper safety by building resentment in the elephants and by giving the keepers a false sense of security.”²⁴⁴

“When Pete [a circus elephant] did not perform her act properly, she was taken to the tent, laid down and five trainers beat her with bull hooks,” said Tom Rider, a former elephant handler. After Rider left the Clyde Beatty-Cole Bros. Circus, he joined the Ringling Bros. Circus for a time.²⁴⁵

While working there, Rider said it was very common to be “stepped on, hit by the tail or injured in other ways just because of the sheer size and power of the elephant.”

Rider also said that an elephant named Karen, who was labeled ‘killer,’ was used in the three ring adventure “where the public is allowed to stand, although she was the most dangerous elephant in the group.” Karen, he said, “had a habit of knocking anyone who came into range, slamming them into the ground, yet they allowed her to have contact with the audience.”²⁴⁶

Rider, who spent three years working with elephants in circuses, testified before the USDA Investigative and Enforcement Services on June 13, 2000. “I can tell you that they live in confinement and they are beaten all the time when they didn't perform properly,” He added, “*That makes them dangerous and they want to get away.*”²⁴⁷

Punishment in training is also known to have several side effects. For example, animals may show a similar emotional reaction in the absence of punishment when they are placed in the same situation.²⁴⁸ Studies have also shown that animals may react to the

location where the aversive experience took place.²⁴⁹ Alternatively, animals can learn to associate aversive treatments with people in general or a specific handler.²⁵⁰

Other animals show specific responses to people based on previous encounters with them too. Cows that had previously been mistreated showed an elevation in heart rate when they were close to the handler that had inflicted the mistreatment.²⁵¹ Anecdotal evidence as well suggests that elephants do remember people who have treated them badly in the past.²⁵²

For example, a worker at the Tarzan Zerbini Circus was hospitalized after an elephant had broken free of her shackles and attacked him in Duluth, Minnesota on April 24, 1999.²⁵³

Police Officer Gayle Holton said the ambulance crew smelled alcohol on the victim at the scene of the accident. An elephant trainer told the investigating officer the elephants were “originally trained by drunks and were badly beaten in the past, and now the elephants don’t like the smell of alcohol on people.”²⁵⁴

Commenting on the incident, Dr. Ralph Farnsworth of the University of Minnesota-Twin Cities said that elephants are perceptive animals and “may have remembered the worker adversely as someone who has given - and may again give - them a shot.”²⁵⁵

Training Methods. Animal trainers use two types of conditioning to train animals. They are known as classical and operant conditioning. Briefly, classical, or Pavlovian conditioning, relies on associative learning, such as using an initially irrelevant cue, or conditioned stimulus, to produce an unconditioned response.⁸

Since we are concerned with punishment in training as it pertains to human safety, we will focus mainly on operant conditioning.

In operant, or instrumental conditioning, an association is formed between a behaviour and a consequence, as opposed to classical conditioning where an association between two stimuli is learned.²⁵⁶ This is done to manipulate an animal’s actions by directly altering the immediate consequences of a specific behaviour.

Methods that cause an increase in the performance of the desired behaviour are called reinforcers. Positive reinforcement increases the occurrence of a specific behaviour by providing a pleasant stimulus immediately after the behaviour to be reinforced. Positive reinforcers are rewards, i.e. things that the animal wants, such as food, praise, comfort or security.²⁵⁷

Conversely, negative reinforcement, or avoidance, uses an unpleasant stimulus to increase the frequency of a behaviour. An example of positive reinforcement may be

⁸ Dr. Pavlov used this approach in his experiments with dogs to induce salivation when they heard a particular tone (Pavlov, I.P., *Conditioned Reflexes*. Oxford University Press, New York (1927).

giving a dolphin a fish for jumping while negative reinforcement includes aversive pressure on the reins of a horse to move it in the desired direction. So to increase the performance of a specific behaviour, rewards (positive reinforcement) or aversive stimuli (negative reinforcement) are used, and to decrease the performance of a specific behaviour aversive stimuli (punishment) are used or rewards are omitted (omission).²⁵⁸

Punishment, as Roocroft and Zoll have stated, is commonly used in elephant training, for example shouting or hitting, which occurs only when the animal does an undesired behaviour.²⁵⁹ Traditional handlers generally accept this as a ‘necessary evil’ to maintain ‘dominance’, and hence control, over elephants in free contact situations. Incomplete dominance is generally believed to put the handler’s life in danger, which is why handlers stress that obedience must be absolute.²⁶⁰

Because failure to obey could result in injury to the handler, it is dealt with quickly and strictly. Every attempt, the trainers say, should be made to impress on the animal that there is no way it may disobey a command.²⁶¹

Various methods, as stated earlier, are used to punish the animal, “for example with a few strokes of a cane or ankus,” though it is recommended, “the use of such physical influence should be minimal.”²⁶² But this begs the question: just how much is minimal?

Training Tools. The ankus, also known as an elephant hook or bull hook, is a traditional tool used to train and handle elephants. It consists of a two- or three-foot long handle made of wood or fiberglass, with a metal head ending in a point and a sharp hook. The hook is used to guide the elephant by hooking it under the folds of the skin and applying pressure to move the animal, or parts of its body, in the desired direction.²⁶³

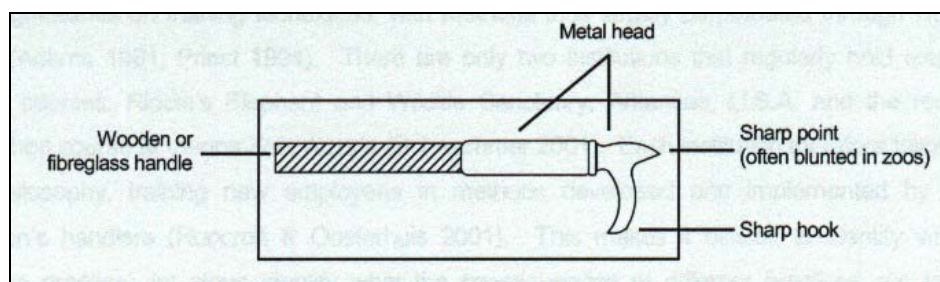


Figure 4 - Ankus - Credit: Clubb & Mason

For instance, to train an elephant to lift its leg, the handler prods the underside of the leg with the point of the ankus²⁶⁴ or gives it a few strokes with a cane.²⁶⁵

“The elephant moves its leg away from the source of the discomfort causing the aversive stimuli to cease, and thus negatively reinforcing the leg lift. At the same time, the handler repeats the appropriate command, so with the repetition, the verbal command acts as a conditioned stimulus thus classical conditioning. Praise and rewards are also provided after the elephant performs the appropriate action, further reinforcing the behaviour (positive reinforcement). Once this behaviour has been trained,

it can then be modified using similar techniques to get the elephant to sit up, sit on a tub, and stand on their hind legs, as commonly seen in circus acts, and some zoos.”²⁶⁶

Dr. Fred Kurt, in William Johnson’s *The Rose-Tinted Menagerie*, tells how some trainers use sharp, pointed sticks to control the animals. “One way to stop elephants or to make them run is to push a sharp stick between the nails [because] they are very sensitive there.”²⁶⁷

Dr. Rolf Keller, also quoted in Johnson’s book, considers this type of abuse virtually inevitable in the circus. “They use these pointed sticks even with sharp, knife-like edges - and I’ve heard that it’s regularly between the toes.”

Hardly an animal-rights advocate, Keller says “if you have to train elephants, you need some kind of pointed stick. They brought the method over from India - where it’s used everywhere.” He adds that it’s “difficult to say whether it’s a bad thing or not because that depends on how the stick is used.”²⁶⁸

The British courts however, had no difficulty in deciding when an elephant handler at the Chipperfield Circus in the U.K. was caught on tape beating an elephant with an iron bar. The handler was charged with causing unnecessary suffering to the elephant under the Protection of Animals 1911 and was imprisoned.²⁶⁹

In fact, many circuses have been caught beating their animals to perform various tricks, or to punish uncooperative ones. According to the American Society for the Prevention of Cruelty to Animals (ASPCA), Mark Oliver Gebel, “one of the biggest showmen of the Ringling Brothers and Barnum & Bailey Circus,” was charged with cruelty to animals, after he allegedly abused an endangered Asian elephant by striking it with an ankus, leaving an open, bleeding wound. Other Ringling Bros. employees were also accused of routinely use force and pain to make elephants perform upon demand.²⁷⁰

Of course, elephant trainers do not refer to this ‘application of pain’ as beatings. Roocroft and Zoll for example, prefer terms such as “physical sensations,”²⁷¹ “unattractive consequences,”²⁷² “overpowering submission,”²⁷³ and “forceful compliance,”²⁷⁴ though the authors do admit, from time to time, it is necessary to punish ‘cunning’ elephants who seek to outsmart their trainers with a “solid smack to the forehead or a reminder with the hook.”²⁷⁵

To re-establish control over ‘problem elephants’, they say “a few solid whacks with the ankus at a suitable moment will be enough ... provided such punishment is augmented by carefully conceived training procedures and consistent firm handling.”²⁷⁶

This seems particularly dangerous given that elephants are capable of this ‘retaliatory cunning’ for discipline the animals may perceive as unmerited.²⁷⁷ The authors also say elephants appear to have a “sense of outrage” uncommon in other species, intense wounded feelings that may prompt them to display indignation in various ways.²⁷⁸

But if the relationship between elephant and trainer is, as Roocroft and Zoll claim, a “covenant” or “alliance,” some romantic *bonding experience* or partnership with one of “the most intelligent of mammals,”²⁷⁹ then this method of training seems particularly cruel and morally reprehensible.

The American Society for the Prevention of Cruelty to Animals citing the USDA found that the ankus is often used behind the ears of the elephant - an area that is particularly sensitive and causes the animal extreme pain – in some circuses. In the case of a baby elephant named Benjamin who refused to come out of a pond in Texas, the trainer poked him with an ankus creating “behavioural stress and trauma which precipitated in the physical harm and ultimate death of the animal.”

This triggered an investigation by the USDA, and former Ringling Bros. employees testified that animals were chained up to 24 hours a day and beaten repeatedly with bullhooks to “train” and control them.²⁸⁰

Incidents of Abuse in Circuses. As Clubb and Mason have stated, aversive stimuli, including pain and discomfort, are used for: a) breaking; b) maintenance of handler 'dominance'; c) training specific behaviours; and d) punishing non-compliance, handler-challenges and non-performance of specific trained behaviours.²⁸¹ A few of these have already been touched on and the others will be discussed shortly.

“Unfortunately, the training can be severe,” says the Oakland Zoo’s Dr. Parrott, “using techniques that include prolonged hitting by the elephant handler with clubs, stabbing with the point of the ankus, pitchforks, electricity, electric prods, prolonged chaining and food deprivation.”²⁸²

Glenn Ewell recounts an incident during his time with the Ringling Bros. Circus. “When Nicole [an elephant] refused to do the movements as instructed, [a trainer] took a bull hook and began beating Nicole in the head, on the trunk and behind the front feet. The beating continued until the handle... shattered.”²⁸³

At another venue, this time in Chicago, Ewell said, “[a trainer] was trying to stretch out Karen so the crew could clean her. She refused to stretch out and [the trainer and three other workers] all took bull hooks and began beating her.”²⁸⁴

Dr. Hugh Chisholm wrote to the Nova Scotia Society for the Prevention of Cruelty to Animals after witnessing animal abuse by a trainer with the George Carden Russian International Circus.

When an elephant didn't comply with an order, the trainer was seen using “his ankus (a pole with a pointed end and a hook on its side) to grab her inside the mouth and firmly jerk her face toward him as he hollered at her to obey.”²⁸⁵

The trainer, said Dr. Chisholm, then ordered the elephant to lie down, “at which point she began to urinate (a common stress response in animals). After the trainer finished hosing her off, he ordered her to get up. Again, she did not comply to his satisfaction, and he subsequently kicked her in the face.”²⁸⁶

Dr. Chisholm observed the trainer “repeatedly driving the pointed end of the ankus into the tissue above the foot of one of the elephant's hind legs. The trainer continued for at least 8-10 times before the elephant performed to his satisfaction. This was done with both hands on the shaft and his full body force thrown into the movement.” Chisholm also noted the ‘discipline’ occurred during the circus performance.

Later that day, Dr. Chisholm witnessed a tiger trainer whipping the tigers in the face when the animals didn't perform properly. “I was within 20 feet of the circus ring and I saw actual contact and an obvious reflex grimace in pain,” from the animals.²⁸⁷

When the Sterling & Reid Circus was touring Michigan in 2001, a USDA officer witnessed a handler “hitting an elephant (Ronnie) on the trunk during the afternoon performance. After the performance an open lesion that appeared to be a hook injury was performance and caused the injury.”²⁸⁸

Another handler was observed raking the back of another elephant several times with his hook during the performance when they were doing a stretch.” The animals, reported Officer Denise Sofranko, were on loan from Hawthorn Corporation.

And in South Dakota, when USDA inspectors visited the George Carden International Circus, they watched as one of the tigers “... lunged at the cage front and pounced against the door panel. At that point the groom picked up a prodding stick and made a threatening motion with it at the animal.”²⁸⁹

Later, during the show's intermission, the trainer was seen back at the tiger's cage. “He again picked up the prod and began forcefully and repeatedly poking the animal through the cage bars.” The inspectors could also see that the trainer was verbally taunting the animal, “as he stood with his face just inches away from the cage front.” One of the officers wrote that this was a violation of Section 2.131 (a)(1) and (2)(1) of the U.S. Animal Welfare Act which states: *Handling of all animals shall be done as expeditiously as possible in a manner that does not cause trauma ... physical harm, or unnecessary discomfort; Physical abuse shall not be used to train, work or otherwise handle animals.*²⁹⁰

All of these examples offer some insight into why some animal attacks may occur in circuses and why human safety is at risk. The following section details this as well.

Breaking. Training an untamed elephant involves a process called ‘breaking’.⁹ This is the ‘traditional’ method of free contact training, brought over from Asia, and described in great detail in Roocroft and Zoll’s *Managing Elephants*.²⁹¹

According to the *Practical Elephant Management's Handbook for Mahouts*, breaking, or *ketti-azhikkal*, is used when a new mahout is assigned to an elephant.

*“Ketti-azhikkal, is literally a battle between the mahouts and the elephant. The elephant in the end, succumbs to the torture by the mahouts. Several elephants have died or been severely mutilated during the process.”*²⁹²

The handbook however, defends the practice, stating that although it is criticized and condemned, “it has however, become inevitable.”²⁹³ Because mahouts either change jobs or the elephants frequently change owners, “there is very little time bonding between the elephant and the mahout.” Therefore, “the mahouts are thus forced to control the elephant by harsh methods.”²⁹⁴

Breaking involves several stages that are designed to make the animal accept the dominant status of the trainer. Breaking usually occurs in elephants under 20 years of age and is reported to take from 10 to 20 days, but can take up to a month with older individuals.²⁹⁵

The elephant is first restrained by tying it to a post, or sometimes to two tamed elephants, so its movement is severely restricted. It is then drained of strength by being denied food and water for two or three days, and of sleep for at least 24 hours.²⁹⁶ The elephant may then be subjected to repeated beatings using the traditional elephant hook.²⁹⁷

In July 1998, 30 African elephant calves were captured from a wild herd in the Tuli Reserve in Botswana by animal dealer Riccardo Ghiazza. The elephants were between the ages of under two and six years. The Tuli footage showed mahouts repeatedly beating the elephants with long sticks to the point where the skin is broken and blood drawn.²⁹⁸

Video footage showed the young elephants chained by two legs to a bare concrete floor in a large barn, unable to lie down properly; then repeatedly beaten with long sticks, elephant hooks, rubber whips, and deprived of food, water and sleep. They were then transported to a holding facility at the African Game Services in South Africa for taming before they were shipped to various zoos and safari parks in the East and West.²⁹⁹

Some mahouts believe that physical punishment should not be used in training the animals, however it is considered acceptable “*when the animal, fresh from the wild, is being broken in.*”³⁰⁰

An NSPCA inspector described a typical elephant training session as follows:

⁹ This process has been documented by the National Geographic Channel and the National Council of Societies for the Prevention of Cruelty to Animals (Carte Blanche, Tuli Elephants. Video footage, 1998).

*“One elephant was tied up in the warehouse... When the elephant simply moved its trunk or shifted its weight, the mahouts would all hit it. Especially the mahout in front who would whip its face with a rubber whip. I counted that during this training session of 20 minutes, the elephant was hit, or stabbed, with an ankus a total of 136 times.”*³⁰¹

Many of these elephants were covered in wounds, especially around the forehead and eyes³⁰² and elephant researcher Cynthia Moss stated the elephants were obviously “severely traumatized.”³⁰³ The National Geographic footage also showed a young elephant being beaten, causing it to cry out and attempting to escape.³⁰⁴

Dominance. The use of dominance is the basic tenet underlying traditional elephant training.³⁰⁵ The handler attempts to take on the role of the ‘dominant’ herd member, and ultimately aims to be incorporated into the natural hierarchy of the group. By becoming the most dominant member, complete control is maintained over that group.³⁰⁶

The justification for this type of training is that elephants themselves use similar methods in the wild. For instance, handlers often say that hitting an elephant when it misbehaves is no different to what elephant mothers do when disciplining their calves.³⁰⁷

However, an elephant matriarch does not rule by force or fear; she is a leader because the rest of the family trusts her to do the best for them.³⁰⁸ Joyce Poole adds that throughout her many years of observing wild elephants, she never saw calves being disciplined or punished. And while males have a very clear linear hierarchy based on size and strength, dominance is maintained through the use of aggressive displays, threats, escape and avoidance,³⁰⁹ but rarely through fights.³¹⁰

Dr. Kiley-Worthington, also an animal trainer, confesses that there is some confusion over the meaning of the word ‘dominance’ when applied to training circus animals. “No one seems to mean the same thing by ‘dominance.’” she says, noting, “some take it to mean ‘showing who is boss.’” Kiley-Worthington suggests rephrasing it to mean ‘inculcating a basic moral sense, and showing mutual respect to the child/animal.’ She claims that such a change in terminology, “immediately makes a difference in the attitude of the educator.”³¹¹



Photo 5 - Garden Bros. Circus - Credit: Daniel Wilson

Dr. Kiley-Worthington, it is worth noting, uses the word ‘educator’ to replace the word ‘trainer,’ though it is doubtful the animals will notice the difference; in free contact systems, the punishments are likely to feel the same.

Still, she believes that “if one looks closely at **good** animal training, in the circus or anywhere else, from fleas to elephants including human beings, dominance and submission is a long way from what is actually going on,”³¹² while stating in her book, *ANIMALS in CIRCUSES and ZOOS; Chiron's World?* “dominance is not a *sine qua non* of circus training.”³¹³

Roocroft, an elephant trainer himself, argues it is. “The training of the elephant,” he says, “commences with one objective: unwavering control of the animal,” and “unquestioned dominance”, adding, “this has to be affected by a brief period of initial restraint.”³¹⁴

He stresses this time and again in his book, especially during the early stages of an elephant’s training. “The objective of this first encounter is to establish control by convincing the elephant, first shot out of the box, that it must accept control because it has no choice.”³¹⁵

So in an attempt to assert their dominance [as ‘the alpha male’] handlers compensate for their relatively diminutive stature using various methods, say Clubb & Mason, the authors of *A Review of the Welfare of Zoo Elephants in Europe*. This includes restraint, physical punishment, and sometimes the deprivation of food, water and sleep.³¹⁶

The problem however, as Joyce Poole points out, is that there is no equivalent to any of these methods in wild elephant societies. “In captive situations, with free contact [i.e. traditional training] one of the most basic social tenets is broken. Smaller individuals attempt to rank above larger individuals not by gaining the elephant's respect but through the use of discipline and fear.”³¹⁷

Furthermore, breaking involves social isolation (rarely seen in female elephants), very acute and intense exposure to extreme stimuli and a lack of control over their environment. These are human-imposed conditions, which are not found naturally with wild elephants. The subordinate behaviour of broken elephants is more likely the result of conditioning, habituation, fear and learning - by their trainers - that they have no control over their environment.³¹⁸

Re-establishing dominance may be necessary if and when an elephant fails to respond to commands. All that may be required is for the elephant to repeat the behaviour several times until it executes those behaviours properly. However, if the animal still fails to respond, the trainer may 'take them back to school' and repeat the initial training techniques from scratch.³¹⁹ More severe methods may also be used, particularly when the animal acts aggressively towards handlers.³²⁰

For example, an Asian elephant named Dunda was transferred from the San Diego Zoo to the San Diego Wild Animal Park where she received "discipline" for her misbehaviour. According to the zoo keepers, this consisted of "chaining her four feet, hauling her down to her knees and repeatedly smacking her on the top of the head, where the skull is thick, with ax (sic) handles and the wooden end of elephant hooks."³²¹

The handlers were not charged because the San Diego district attorney found that the "discipline of Dunda, although seemingly harsh to the uninitiated, is a technique accepted in the animal-training profession" and one used by "reputable animal facilities around the country to establish dominance over the animal,"³²² even though the U.S. Animal Welfare Act, Section 2.131 (a)(1), states that the handling of all animals *shall not cause trauma, ... physical harm, or unnecessary discomfort*. It also violates 2.131(2)(i) which states that *physical abuse shall not be used to train, work, or otherwise handle animals*.

Effectiveness in Punishments. A brief word about whether punishments are effective in disciplining elephants. When corporal punishment is administered to an elephant, professional trainers say it has to be fairly forceful in order that it is perceived by the elephant to be punishment at all.³²³

That punishment, they warn, "should never to be meted out under conditions where the animal may effectively offer counter-measures."³²⁴ Instead, it is recommended, "that the animal be physically restrained as a preliminary step, i.e., chain-tethered or put in a crush."³²⁵

Roocroft and Zoll suggest that any punishment take place "right where the offense was committed," so the animal connects the punishment with the offense. It is pointed out however, "this may not be practical in many cases and the trainer may need to use some protective arrangements."³²⁶ Otherwise, the one administering the punishment may be at risk of physical harm due to the animal's size and its ability to retaliate.³²⁷

Many learning theorists and trainers regard punishment as ineffective, and a method that should only be used as a last resort in dangerous situations,³²⁸ while others believe that it should be replaced entirely by far more effective methods.³²⁹

Admitting that more use should be made of positive reinforcement, Roocroft and Zoll maintain that negative reinforcement cannot be wholly abandoned. “There is a need, at times, to assert discipline by means of physical sensations, as the dog, say, must be reminded of the limits of toleration of its behaviour.”³³⁰

But, as previously noted, an elephant is not a dog, or a horse, but a “singularly unique” animal. “Ill-mannered or untrained horses have been known to try to pin a man against a stall wall,” the authors themselves state, “but when an angry elephant is prompted to do the same thing the consequences may be far more critical.”³³¹

EMERGENCY SITUATIONS

Zoological parks have in place systems of procedures in the event of animal escapes or other emergency situations, such as natural disasters. Circuses too are required to have emergency plans should an animal escape.

As discussed earlier, it is common for zoos to exhibit animal species that are potentially dangerous. These animals could inflict serious injury or death should they come into direct contact with people.³³² However, the safety risks to the public at circuses are more obvious due to the fact that more people are in closer proximity to the animals than at a zoo. The exception to this would be the elephant rides offered to the public at certain zoos.¹⁰

Before looking at emergency procedures for circuses, it is helpful to look at the procedures at zoos. But first, it is necessary to look at why animal escapes occur in the first place.

Animal Escapes. Dr. Heini Hediger found that the most important drive of free-ranging animals is the escape drive.³³³ When an animal encounters an enemy, he said, the animal shows a characteristic escape reaction as soon as the enemy approaches within a certain distance. This is known as the flight distance.³³⁴ Dr. Hediger also contends that man is the universal enemy of such an animal in the free state, and the focus of the animal’s escape reaction.³³⁵

Yet Dr. Hediger believes that all animals born in captivity, or taken very young, are not trying to escape because they long for freedom. He contends that since they have never known freedom, they cannot long for it. Rather, the cage is a restriction upon the captive wild or tamed wild animal, not to get away to somewhere (liberty, or home), but to get away from something, namely its chief enemy, man, or away from surroundings

¹⁰ Ringling Bros. Circus reportedly dropped elephant rides long ago while the American Zoo and Aquarium Association (AZA) recently forced its members to abandon the practice (Scigliano, E., *Love, War AND Circuses*, Houghton Mifflin Company, New York, 2002. p. 258).

reminiscent of man which are biologically unsuitable. “Man, and all human accessories, cages, etc. are therefore still of sinister significance to the animal, and it will try to get away from them all.”³³⁶

Animals that escape by destroying their cages are called ‘cage-breakers’. The strength of the materials used in the construction of the enclosures therefore, deserves close attention. Animals may also escape by opening doors and undoing catches. Elephants and monkeys, Dr. Hediger noted, are proficient at this. The trunk of an elephant can act like a hand, and as earlier mentioned, the great dexterity of primates – especially the capuchins because of their opposable thumbs – makes it necessary that all cages are padlocked or otherwise appropriately secured.³³⁷

‘Runaways,’ on the other hand, are animals that suddenly escape from their human trainers when they are being walked about, for instance, during a parade. “Running away,” explained Dr. Hediger, “is almost always caused through panic.” Therefore, in all dealings with wild animals, excitement should be avoided. “Even in perfectly tamed animals,” Dr. Hediger said, “wildness flares up in conditions of disturbance.”³³⁸

“Processions with their moving crowds, costumes, decorations, strange wagons, flags, bands and noise are especially dangerous,” Hediger said, though he makes a notable exception. “Only a few animals, mostly circus ones, are used to such situations.” He explains that the constant change of surroundings and the unreliability of appearances are ‘normal’ to these animals.³³⁹

However, two facts should not be overlooked. “On all occasions of this sort some risk is unavoidable, for there can be no double safety, no real safety at all.” In addition, the behaviour of the public is “usually far less predictable than that of the animals.” Dr. Hediger said, “Experience tells us that in awkward situations of this sort the public will always do the wrong thing. Anything that excites the animal is wrong; but at the critical moment this fact is ignored.”³⁴⁰



Photo 5 - Garden Bros. Circus - Credit: Daniel Wilson

The incident with Tyke, a 9500-pound Indian elephant that killed her trainer during a performance in Honolulu, Hawaii in 1994, was allegedly caused by a groom who spooked the animal as he attempted to brush her.³⁴¹

A similar incident occurred in Williston, Florida on May 5, 1993 when elephant trainer Axel Gautier was killed by an elephant while videotaping the animals at the Ringling Elephant Farm. One of the animals became startled and knocked Gautier down, then stepped on his chest. Gautier, who was 51 years old, reportedly had 35 years experience with elephants.³⁴²

“Whatever the circumstances of an escape, the animal will probably be frightened to some degree, with an altered perception of its surroundings. Heightened responsiveness to certain apparent dangers may be coupled with virtual blindness to other features of the environment. This fright can result simply from the displacement from the normal home area and consequent disorientation. A seemingly 'tame' animal may act as a thoroughly wild animal outside its home cage”³⁴³

Or, one might presume, the familiar surroundings of the center ring or stage.

There are several factors that will operate to increase the flight distance or tendency to flee. Fear of unfamiliar surroundings and strange or conspicuous people may encourage an animal to flee. Interestingly, clothes are listed as a factor that may cause an animal to flee or become aggressive.³⁴⁴



Photo 6 - Tarzan Zerbini Circus - Credit: Zoocheck Canada

In the attack on Wayne Franzen by his tiger in 1997, circus staff told police that the animal, which killed Franzen during a performance in Carrollton, Pennsylvania, might have been provoked by the colourful new clothes Franzen was wearing at the time.³⁴⁵

Sudden movements, loud noises, powerful illumination (any exaggeration of the normal sensory environment) may also contribute to animal escapes, as noted earlier by Dr. Hediger. This is a cause for concern as most circuses feature bright lights, fireworks, loud music, and even motorcycle daredevils while entertaining hundreds of cheering spectators.³⁴⁶

Lastly, stimuli previously associated with specific negative consequences (white uniforms, nets, crates, hose, tranquilizer gun, etc.) or gestures by humans that mimic threat signals meaningful to the species (for example, staring or pointing at primates and other mammals, crouching or stamping before ungulates) may provoke an increase in the tendency to escape.³⁴⁷

It is noted that human inattention or stupidity may also be the cause of animal escapes. “Inattention not just to the obvious details of securing cages, but also to inadvertently pressing animals to flight reactions within the small core of security represented by their zoo enclosures.”³⁴⁸

Here, zoo enclosures are discussed. Yet it is a lack of attention to “obvious details” that may have caused the escape and subsequent mauling of 37-year-old circus employee Geoffrey Pettigrew at the Ringling Bros. and Barnum & Bailey Circus in Chicago on

November 21, 1998. According to Chicago police, the man was attacked by “an unknown number of tigers from behind.”³⁴⁹

He received “numerous cuts, puncture wounds to the neck, arms, torso, legs,” and was admitted to Cook's County Hospital in serious condition. The employee stated he was “unsure of what happened,” but admitted, “that he possibly left the cage of the tigers open.”³⁵⁰ Circus spokesperson David Kiser said the attack came from an 800 to 1000-pound Bengal tiger.³⁵¹

Other causes for escape, as mentioned earlier, include the curiosity or exploratory drive of many animals. Although strange situations produce fright and alarm, many mammals seem to search for novelty. Primates in particular seem to always be testing their captive environment.³⁵²

It is noted that the circumstances most conducive to escapes are those concerning crating, netting or shifting animals from their normal homes, that is, between the moving of the animal from one enclosure to another. “Precaution is very much in order, since the animal is deliberately being put in a frightening flight situation and being deprived of the security of home.”³⁵³

Public Safety. In spite of good planning and clearly understood procedures, emergencies will occur in every zoo. In all cases, it is paramount to ensure public safety, the safety of the zoo and affiliated personnel, the safety of the animal collection and prevent or minimize damage to facilities and equipment.³⁵⁴

*“Until the situation is under control, it is important to keep the scene of the emergency free of unnecessary people. A team of employees should be assigned to respond to all emergency calls to provide crowd control and support. This team should clear the area of both visitors and employees not engaged in the capture attempt, and rope off the area. First aid may need to be administered both to zoo employees and members of the public so personnel ordinarily assigned to crowd control should be trained in first aid so they can provide emergency first aid while waiting for an ambulance.”*³⁵⁵

Zoo Security. The key to an effective security program is prevention. Good facility design incorporates the provisions of adequate space for both people and animals. Adequate space will help prevent the animals from constantly searching for an escape route.

Secondary containment should be included in most animal facilities; however, *it is a must in all facilities that house potentially dangerous animals* (italics added). For a building, this means that access to the animal's cage is through a locked service area that is off limits to the public. The entrances and exits of the building should have double doors to further hinder any escaped animal's chances of access to the outdoors.³⁵⁶

The Principle of Double Security is recommended for caging all wild animals, especially dangerous species, so that once an animal escapes, it should find itself in a safety zone from which it will have to break out a second time in order to get right away. "It always means a serious handicap when there is no outer zone which can be closed in an emergency," says Dr. Hediger.³⁵⁷

The zoo perimeter should be fenced and locks should be used throughout the facilities. Special attention should be given to the construction and maintenance of gates,³⁵⁸ and guardrails and/or barriers must be constructed in all areas where the visiting public could have contact with other handleable animals."³⁵⁹

A comprehensive design will work to eliminate potential areas of escape. Nevertheless, animals will spend 24 hours per day seeking ways to get out of their exhibits.³⁶⁰

Capture or Containment of the Animal. If an animal escapes from its enclosure at a zoo, rapid containment or immobilization will prevent injury to visitors and staff, as well as to the animal itself. The people most capable of dealing with an escaped animal are the keepers who routinely care for it and veterinary staff. The animal section personnel must have access to capture equipment such as nets, crates, ropes, elephant hooks and snare poles.³⁶¹

*"The veterinary staff can respond with equipment to effect chemical restraint should it become necessary. A capture gun, blow darts, or even a pole syringe can be used to restrain animals that cannot be safely contained any other way. The use of chemical restraint and remote delivery equipment should be limited to the veterinary staff."*³⁶²

In most cases, the minimum time to effect sedations is 5 minutes. However, this time may vary depending on the species, conditions, and restraint agent(s) used. It could in fact take 15 minutes or more to achieve immobilization, particularly if the animal is excited. It's important to note that animals under the influence of chemical agents but which are not fully immobilized can be even more dangerous to humans due to the inhibition of their normal fear response. Unnecessary staff, as well as curious members of the public should be kept away from the scene.³⁶³

In order to prevent confusion, a list of all potentially dangerous species within the collection should be made, together with the preferred drug and dose to be used on each. During an emergency there will be no time to refer to the literature or to the animal's medical record for the anesthetic regimen of choice.³⁶⁴

Chemical Restraint. According to Dr. Murray Fowler, Xylazine (Rompun) is used as a mild sedative in horses, although it is used as an immobilizing agent for a wide variety of species. Side effects include an explosive response to stimuli, particularly to auditory stimuli, and may cause operator injury.³⁶⁵ Carfentanil is another drug used to restrain large ungulates, and is very similar to etorphine.³⁶⁶

Etorphine hydrochloride, also known as M99, is so highly dangerous that one drop will kill a human being,³⁶⁷ while carfentanil is three to five times more potent than etorphine.³⁶⁸ It is “distinctly dangerous to handle and surgical gloves and face shields are routinely used when preparing and removing darts from the animal,” says Roocroft and Zoll.³⁶⁹ It should be noted that etorphine is lethal to human beings if it is ingested through the skin, nose or mouth.³⁷⁰ If a person were accidentally injected, immediate medical help is essential.³⁷¹

Side effects of the drug on animals include aimless walking or running, excitement, tremors and convulsions. Dr. Fowler writes that etorphine is the “drug of choice” when immobilizing elephants³⁷² and his preferred immobilizing agent for large bears.³⁷³

Shooting Team. According to (identify) Flanagan and Tsipis, whenever a dangerous animal threatens human life, it should be destroyed immediately. A “shooting team” should respond to all emergencies involving potentially dangerous animals. These people will have no responsibility to capture or restrain the animal, nor should they have to deal with crowd control.³⁷⁴

People authorized to use firearms must be responsible, familiar with the behaviour of potentially dangerous animals, and with firearms and safety practices. Shotguns loaded with large buckshot or slugs and rifles using ammunition appropriate to the size of the potentially dangerous animals in the collection should be available.³⁷⁵

For instance, to stop an elephant, big bore cartridges are recommended. These include 500-grain solid bullets of the 458 Winchester magnum or the 416 Rigby calibers. Good bolt-action rifles, such as the Pre-1964 vintage Winchester models are considered appropriate. Riflescopes are generally not recommended, although the newer “Red Dot” type scopes could be considered. For bears and large cats, the 375 H&H magnum cartridges are sufficient. Again, a good bolt-action rifle should be considered.³⁷⁶

And finally, stored firearms must be in a locked cabinet and accessible only to authorized personnel trained in their use.³⁷⁶

Shooting team members are required to destroy an animal only when instructed to do so by the most senior animal section representative on site or when human life is immediately threatened.³⁷⁷ The very rare occurrence of when a dangerous animal must be shot is considered an act of last resort when a human life is in imminent danger and the animal must be killed. “In this situation,” says Dr. Okimoto, “attempts at tranquilization and recapture may prolong the exposure of the human victim and increase the chance of serious injury or death.”³⁷⁸

Zoo Emergencies and Written Procedures. According to Flanagan and Tsipis, the key to the management of any zoo emergency is common sense. Common sense and the ability to translate training programs and established procedures into effective action appropriate to the situation make security programs effective. Good communication is also critical in the management of an emergency.³⁷⁹

Also critical are written emergency procedures. A copy of the zoo's emergency procedures should be given to each new employee hired, and where appropriate, to volunteers. It should be clear that he or she is responsible for understanding the material.³⁸⁰

Institutions maintaining potentially dangerous animals should have well thought out and practiced safety procedures to deal with an attack or injury by these animals. If an attack or injury has occurred previously, a written account of the method by which this event was handled should be maintained,³⁸¹ while a written protocol should be developed involving local police or other emergency agencies and include response times to emergencies.³⁸²

At the Toronto Zoo for instance, three areas of responsibility are recognized when an animal escapes. First is to protect the public; second, to protect the staff; and third, to recapture the animal that has escaped. All Emergency Response Team (ERT) members must be trained and licensed in the use of firearms, whose primary responsibility is to neutralize the animal. Other zoo staff may be brought in to assist the ERT with nets, vehicles, etc., or may be called upon to perform crowd control, assisting members of the public away from the location and preparing the way for emergency vehicles.³⁸³

If a dangerous animal has escaped (Code 1), it should be confirmed by security and the ERT leader. Once confirmation is established, all entrances and gates are sealed off to contain the animal(s). Security calls 911 and advises police that a dangerous animal has escaped. The ERT leader, or person in charge (PIC), attempts to maintain contact with the animal(s) and confirm identity. The PIC then directs the ERT to neutralize the animal.³⁸⁴

A Code 2 on the other hand, refers to a staff member or member of the public in a dangerous animal's enclosure. Police and ambulance services are notified and the PIC instructs the ERT on neutralizing the animal and/or separating the animal from staff/public. The animal is then neutralized.³⁸⁵

The Toronto Zoo emphasizes the importance for all staff to take steps to ensure the safety of the public and to conduct themselves in a calm and professional manner. It recognizes that when animals leave their enclosures, they are usually in a *stressed state*, so it is important to give them plenty of space and distance, and to let the ERT conduct an organized response.³⁸⁶

It is also important to prepare for the possibility of an animal escaping its enclosure. A good way to prepare for this is to have periodic drills. Deficiencies in procedures are brought to light and improvements can be made to reduce safety risks. Many zoos have found that drills are of great benefit in honing the skills of staff and keeping them aware of safety concerns. Again, prevention is the key.³⁸⁷

While acknowledging that incidents can occur even when all precautions have seemingly been considered, accredited zoos should be commended for addressing and implementing such detailed and stringent procedures to reduce the risks to human safety posed by displaying potentially dangerous animals.

Emergency Procedures in Circuses. In contrast, the circus industry's response to an emergency situation, and in protecting its patrons from injury or attack, is considerably less detailed.

According to the Tarzan Zerbini Productions Emergency Elephant Plan, "In the event of an emergency, the handlers will use their training experience... to calm the animal(s) or coax them to a neutral area. If the animal(s) require sedation, a ... tranquilizer is available to the trainers. Tranquilization equipment is maintained by the senior trainer(s) at the location."³⁸⁸

And then, a little further: "when an elephant becomes aggressive, the response should be to use chains to restrain the animal, and should only be handled by senior staff. However, if the animal becomes uncontrollable, tranquilization will be attempted by senior trainer(s) and a decision to destroy animal through injection or small arms fire will be determined by the owner, senior trainer(s) and/or public safety officials."³⁸⁹

Although this plan is very similar to Nova Scotia's Recapture Plan, it fails to take into account some very important facts. According to veterinarian Dr. Hugh Chisholm, DVM, immobilizing agents strong enough to subdue an elephant are not always easy to acquire.

*"The drug, carfentanyl, is the current 'agent of choice' for immobilizing an elephant, and its use is restricted under the federal Narcotic Control Act. Only specially licensed veterinarians can use this drug and therefore it may not be readily available should an elephant emergency arise at a traveling circus."*³⁹⁰

But, as previously mentioned, these tranquilizers, if available, are in the hands of, and being administered by, the animal trainers, not licensed veterinarians.

Dr. Chisholm points out the Department of Natural Resources technicians and animal control departments would be unable to help if an elephant needed to be subdued "because the drugs they have would not be adequate for elephant restraint."³⁹¹

Nevertheless, Dr. Joel Parrott believes that tranquilizers would be ineffective if an elephant decided to rampage. "Tranquilizers are useless," he says. "The two drugs available to anesthetize an elephant are carfentanyl and etorphine... If either drug were readily available and immediately injected, it would still take at least 8-12 minutes to take effect. In reality, administering an anesthetic would take much longer: to load a tranquilizer dart, get the dosage correct (which is altered in an excited animal), fire the dart, and hope it does not miss nor fail to discharge. All of this would be occurring while the elephant is in a state of rage."³⁹²

Dr. Parrott suggests that the only way to stop a rampaging elephant is to shoot (to kill) the animal. “The elephant would need to be shot to insure the public's safety. That requires a special weapon. At the Oakland Zoo, we keep a 457 magnum rifle specifically for an elephant escape.” Parrott notes, “local police departments generally do not carry this size of weapon, which results in the need for the police to repeatedly fire smaller caliber weapons in the hope of finally stopping an elephant. The window of danger for someone being seriously injured is significant until the animal is subdued.”³⁹³

There is also the serious potential for human injury by gunfire, should any potentially dangerous animal escape amongst a large group of fleeing people. This is exactly what happened in Recife, Brazil in April 2000. Police wounded two people with bullet fragments after five lions devoured a 6-year-old boy at the Vostok Circus. The police were attempting to scare the lions off the boy's body by spraying the top of the lion cage with machine-gun fire.³⁹⁴

The question of whether a circus can successfully subdue a rampaging animal such as an elephant is not always guaranteed. On September 22, 1999, the Department of Natural Resources reported the Shrine Circus had on hand tranquilizing equipment that was “grossly inadequate. An old Cap-Chur pistol was on the premises and it was questionable if this equipment was even fully functional. The darts and needles for this equipment were too small making any recapture very difficult. The dosage of drugs that were to be used was extremely low... [and] there were no CO2 cartridges with the equipment...”³⁹⁵

Canadian law also restricts particular weapons from entering the country or certain persons from carrying them. In 2003, the DNR expressed concerns over the Tarzan Zerbini Circus' Elephant Recapture Plan, which listed “small arms fire” as a means of euthanasia. “I am not sure what this refers to,” stated Inspector Vissers in his letter to Larry Solheim, General Manager of TZ Productions adding, “but what do you have with you for this activity or are you relying on local police side arms, something I cannot accept.”³⁹⁶

“The reason that small arms fire is included,” replied Mr. Solheim, “is due to the requirements of other locations that we play. In Canada we do not carry a long rifle because of import restrictions.” In reference to chemical restraint, Mr. Solheim writes, “if a drug more potent than Rompem would be required we would contact your office or our on call vet (if they are authorized to possess a more lethal drug).”³⁹⁷

This however, raises other questions and concerns. The most important being, how long would it take to secure and administer the appropriate drug to subdue an animal in the event of an escape, and how many people would be at risk of injury during this time?

But perhaps the importance of immobilizing agents and human safety to the Tarzan Zerbini Circus is best illustrated by what the Calgary Humane Society found, or didn't find the next year. During a routine inspection of the circus at the Saddledome in March

2004, the Calgary Humane Society discovered the circus *had no tranquilizer equipment on hand*, should an escape or attack by an elephant occur.³⁹⁸

When Tyke, the 9500-pound elephant (see Case Study #1) went berserk in 1994, Circus International did not have tranquilizer guns on hand to subdue the animal after it attacked and killed its trainer. Tyke's subsequent rampage through the streets of downtown Honolulu resulted in numerous injuries and sent many people to hospital.

“A tranquilizer gun is practically useless on an agitated animal,” said John Cuneo, Tyke's owner. “If we had a gun, it would have taken 25 to 35 minutes before the drug would have taken effect. In this situation, it would have been a waste of time.”³⁹⁹

The time it did take to subdue Tyke, from the moment she killed Alan Campbell to the time she was destroyed – involving over 50 police officers and 87 bullets - was just over an hour.

Monetary considerations also played a factor in the decision not to have a tranquilizer gun on hand as well. To have a tranquilizer gun at the circus, said acting Mayor Jeremy Harris, would have meant paying for an on-site, licensed veterinarian. Harris said it wasn't practical, adding the lethal potency of some tranquilizers could have endangered human life.⁴⁰⁰

Perhaps Mayor Harris missed the irony, or did not consider the lethal potency of the many rounds of bullets the police officers discharged that could have hit and killed any one of the dozens of bystanders in the area, or the near killing of circus publicist Steve Hirano, as he attempted to restrain Tyke behind a fence with his bare hands.

Incredibly, one year earlier, Tyke went on a similar rampage at the Circus America in Altoona, Pennsylvania on April 21st, 1993.⁴⁰¹ Officer O.J. Iorio, who was called to the Jaffa Mosque where Tyke had broken loose, discovered circus owner Ed Migley had no tranquilizers to subdue the elephant. Migley said occurrences like this “only happen every 50 years or so” and that the trainer could use a bull hook to control the elephant.⁴⁰²

The officer suggested that type of control could be considered cruelty to animals and Migley should have tranquilizers on hand. A year later, when the circus returned to Altoona (four months before Tyke's rampage in Hawaii), Ed Migley confessed to Officer Iorio that he “*still didn't have tranquilizers*” should a similar situation occur.⁴⁰³

A few years later, on February 26, 1998, USDA investigators found that the Hawthorn Circus (the same company that owned Tyke), while touring in Oregon had no written contingency plan should any of the elephants escape.⁴⁰⁴

Sadly, the circus barely received a written slap on the wrist; it was merely told that “a plan should be developed and proper training provided should an escape occur.” The USDA also ‘suggested’ the violation be corrected by 03-30-98.⁴⁰⁵

Later that year, in November, Hawthorn Corp. was again found in violation of Section 2.40 (b)(1), not only for failing to provide veterinary care, but for having “no capture or restraint equipment” available to comply with the provisions of the USDA.⁴⁰⁶ The circus was again ordered to correct the violation, this time within 48 hours, by 11-14-98.

Finally, in a letter from W. Ron DeHaven, Deputy Administrator for Animal Care at the USDA to Donald Munro representing Hawthorn Corp., Mr. DeHaven prohibits the use of one of Hawthorn’s elephants after two of the animals escaped and rampaged through a car dealership, causing major property damage and presenting “a potential threat to human safety.”⁴⁰⁷

According to Mr. DeHaven, ‘Freida’ and ‘Debie’, two of Hawthorn's elephants,

“were out of the control of their trainers as they crashed through a show room window at the car dealership. According to witness statements, approximately a dozen spectators at the event sustained minor injuries while trying to flee the area after the two elephants began pushing and shoving each other in the ring. A trainer also suffered a broken foot after being accidentally stepped on by one of the elephants.”

Mr. DeHaven informed Mr. Munro that the USDA considers “an uncontrolled elephant(s) running loose in a parking lot outside a shopping center as a serious threat to human safety and to the safety of the elephant.”⁴⁰⁸

At the time this report was compiled, John Cuneo, president of Hawthorn Corporation, was still in possession of many of these potentially dangerous animals.

CASE STUDY #1 - TYKE

“He (the elephant) was throwing him around like a rag doll. He came in stomping. He was totally vicious.” – Mel Dominguez, Mililani, The Honolulu Advertiser, August 21, 1994.

Circus International, Honolulu, Hawaii, August 20, 1994

At approximately 4:15pm, the Alarcons, a three-person comedy team, finish up their knife-throwing act at the Neil Blaisdell Center Arena with Circus International. Behind the curtains, preparing for the next act is 20-year-old William Beckwith, an elephant groom with 2 ½ months experience.¹¹

¹¹Note: All references in this and the second case study have been combined and inserted at the end of each for easier reading.



Photo 7 - Shrine Circus - Credit: People for the Ethical Treatment of Animals

His boss, Alan Campbell, instructs Beckwith to get Tyke - a 9500-pound female African elephant owned and leased by the Hawthorn Corporation – cleaned up for the next show. Beckwith brushes Tyke on her right side, then walks behind the elephant to brush her left side when the elephant apparently spooks.

Suddenly a loud noise is heard from behind the stage. As the curtains toss about, two figures emerge. Beckwith, it appears, is wrestling with the elephant. They burst into the ring as Tyke tosses the groom around like a rag doll. Campbell tries to intervene but is pummeled by the animal.

Tyke crushes Campbell, and then runs back to her pen. With no one there to receive her, she runs around the bleachers and breaks through the arena doors, injuring several people before heading out and onto the surrounding streets. Steve Hirano, the circus' publicist, follows the elephant through the streets of Kakaako, and Honolulu police are alerted. Several officers are dispatched to the NBC Arena.

Officer Zane Hamrick responds to the report that an elephant is on the loose and arrives at Kapiolani Boulevard and Kamakee Street, where he is flagged down by one of the circus' trainers. The trainer gets into Hamrick's car and they proceed to follow the elephant down Waimanu Street. Tyke appears to be calm and is just walking down the street, and then she goes into a parking lot at the back of an industrial building at 1046 Waimanu Street.

There are several people in the parking lot, including officers Les Kine and Zack Kine, and an unidentified person driving a white Bronco or Explorer. The elephant begins to chase Les Kine, who is yelling for someone to shoot the elephant. Hamrick enters the parking lot and the trainer gets out and approaches the animal, yelling at her to obey his

commands. Tyke then turns and begins to chase the trainer, as well as causing damage to several vehicles parked in the lot.

Officer Claire Hagel arrives to find Tyke chasing the police car. Several circus pig handlers are running around like rodeo clowns trying to distract the animal. One of the people yells for Hagel to close the entry gate and she does.

As Officer Pedro Sajona arrives at the scene, he notices Hamrick's police car inside the fenced parking lot and Hagel's car blocking the entry gate. The circus trainer is yelling for the officers to shoot the elephant but Sajona notifies everyone via radio to hold their fire.

Hamrick yells for the trainer to get back into the police car so they can leave the area. Les and Zack Kine get into the car while Hamrick drives around in circles. Hirano approaches Hagel and requests that she shoot the elephant. Hagel calls for permission but is denied. The elephant begins to calm down and there is some hope they can contain her there, but once the trainer gets into the police car, Tyke resumes her pursuit.

Things "start to get dangerous" and everyone inside the parking lot wants out. Hagel moves her car while someone else opens the gate. The pig handlers get into the white vehicle and both vehicles exit the parking lot.

Hirano tries to close the chain-link fence to contain the animal, but Tyke pushes through, knocking Hirano down and grabbing his foot with her trunk. She then kicks, head butts and steps on him. Hagel immediately fires 1 round, from a distance of 20 to 30 feet, at the right shoulder of the elephant. Sajona also fires a round. Another officer, Jerry Inouye, fires his weapon as well, discharging 4 rounds from a distance of 20 feet at the right side of the elephant. Tyke then turns and runs down Waimanu Street. Inouye calls dispatch to check for officers with rifles while Hagel assists Hirano.

Hirano is picked up by Hagel and put into the back of a truck driven by the circus' lawyer, Roy Yempuku. Yempuku takes the injured Hirano to hospital. Sajona follows the elephant and radios for anyone with a "long gun."

Officer Will Cluney then arrives with a rifle and enters the parking lot at 1141 Waimanu Street where Tyke has entered. Cluney and Sajona begin clearing the surrounding area in the event shots have to be fired. The elephant again begins to calm down.

Several people climb the wall of the parking lot and begin yelling "watch out elephant," which appears to annoy the animal. Tyke reacts to the noise and begins heading towards them. The people run away, and Sajona informs Cluney to shoot the animal if she gets within 30 yards. The people climb back on the wall again and resume calling to the elephant. Tyke becomes upset again and the people again run away.

As Tyke gets within 30 yards, Cluney fires 1 round at the elephant's forehead, with no effect. The people climb back on the wall once more and resume calling to the elephant.

The elephant rushes toward the people on the wall and Cluney follows on foot. Once the people on the wall get out of the way, Cluney fires another shot and the elephant runs down Kawaiahao Street towards Ward Avenue.

Fearing the animal will cause more damage and injury if she enters the Ala Moana Boulevard area, Hamrick picks up Cluney and attempts to intercept the animal. They stop on Kawaiahao Street at Ward Avenue and Cluney takes a post. He leans over the roof of the car and fires 2 rounds into Tyke's forehead. As Tyke continues walking, Cluney fires 2 more rounds from a distance of 10 to 15 yards but again, the bullets have no effect.

Sajona informs officers to block Ala Moana Boulevard and Cluney jumps back in Hamrick's car. They drive around the block, trying once again to get ahead of the animal. Cluney then gets out of the car and takes a post 40 to 50 yards in front of Tyke. As the elephant advances within 20 to 30 yards of Cluney, the officer fires 3 quick rounds at her forehead. Tyke still advances.

Hamrick and Cluney then drive to the area of 350 Ward Avenue, in front of the animal's travel path. While Hamrick remains in the vehicle, Cluney braces his weapon on the roof of the car and fires 2 rounds in rapid succession at the head as the animal approaches within 20 yards. Tyke continues trotting towards Ward Avenue, so Cluney steps away from Hamrick's vehicle and fires 2 additional rounds from a distance of 20-30 feet.

Meanwhile, Officer Alvin Cho drives ahead of the elephant to warn pedestrians to move out of the way. Hamrick moves his vehicle out of the path of the elephant, picks up Cluney and they pursue Tyke as she travels down Ward Avenue.

The animal heads into a parking lot at 333 Ward Avenue, where she begins chasing pedestrians. Officer Gregory Lopez arrives and fires 1 round to the back of Tyke's neck, causing the animal to turn around and chase him. Lopez jumps onto a cushman being driven by Cho and gets away from the elephant.

At Ilaniwai Street, Lopez fires 14 rounds at the elephant while standing on Cho's moving cushman. The shots appear to slow the animal down somewhat but then it crosses in front of Cho's cushman and exits back onto Ward Avenue. The animal then runs out of the parking lot and onto Ilaniwai Street.

Officer Joseph Ledbetter arrives on the scene, and seeing there are no supervisors present, takes command of the situation. He orders the officers to stop shooting the elephant with their handguns and instructs Cluney to enter his vehicle so they can intercept the elephant. Ledbetter and Cluney drive past the elephant and stop approximately 50 yards in front of Tyke's path.

As Cluney exits the car, the animal starts to slow down. Cluney sets up on the trunk of the car and fires 7 to 8 rounds, but the elephant continues to walk closer. Cluney is then joined by Sajona who instructs him to set up his weapon within a metal garage area which would protect him from the animal by steel girders. Cluney moves away from the

car and sets up in the garage. He braces himself against a mailbox and Sajona orders Cluney to fire at the animal's head. Cluney aims for the spot between the eyes of the elephant and fires one round, with no apparent effect. Tyke then slowly trots towards Cluney's position, approaching to within 20 yards and Cluney fires a second round, also at the head.

Suddenly, the back legs of the animal drop, but she is still braced up on her front legs. Cluney continues firing, slowly and deliberately at the head area, and Tyke begins to slide against a parked vehicle. Cluney stops firing, but then Tyke begins to swing her head back and forth. Cluney resumes firing until he is out of ammunition.

The elephant slowly slumps to the ground and Cluney calls for other units to respond. Tyke is still breathing and able to move so she is still considered dangerous. Additional units to prevent further injury to onlookers secure the area.

Officer Brian Lee approaches with a lever action rifle – an unauthorized weapon he obtained from civilian and gun shop owner Gary Umagat – but Ledbetter authorizes its use and instructs Lee to shoot the elephant. Officer Brian Sugimoto also arrives on the scene and is informed by Sajona that the plan is to kill the elephant as soon as they can.

Sugimoto and Lee both aim at the elephant's right eye and fire 12 to 18 rounds from a distance of about 15 feet, until their weapons are expended. As the officers reload their guns, crowds of bystanders close in and are repeatedly moved away by police. Sugimoto fires another 5 rounds into the elephant's eye but stops as the shots appear to be having no effect.

Meanwhile, veterinarian Ben Okimoto of the Honolulu Zoo's veterinarian staff receives permission by Ken Redman, director of the zoo to assist in the destruction of the animal. He arrives at the scene by police escort and is joined and assisted by Christine Toth (who arrives with the equipment needed to anesthetize the animal). Dr. Okimoto injects the animal with medication to kill Tyke, but it is ineffective as well.

After 10 to 15 minutes, Sugimoto is instructed to attempt to kill the elephant by shooting it in the heart. The vet points to a specific area on the side of the animal and Sugimoto fires 8 rounds, from a distance of 6 to 8 feet, but the elephant is still alive.

Officer Kaipo Miller arrives with a Remington .308 sniper rifle. Miller is instructed by Okimoto to fire 3 rounds towards the animal's heart, "to eliminate any further pain and suffering." Miller discharges 3 rounds from his Remington .308 rifle into the right chest area of the elephant. Tyke takes another couple of breaths, and at 5:25pm, she expires.

"It was too unreal. I'm still shook up. It's affected me a lot. It's been really traumatic." - Chip Lane, Haleiwa

The first call for help came at 4:15pm, recalls Alvin Sakarta, who was on duty at the ambulance service's headquarters at Kaopaka Street near Honolulu airport. The first

ambulance arrived four minutes later he said, and within minutes, a total of eight city and county ambulance, and two private ambulance services contracted to provide backup to the city and county services, arrives at the NBC arena.

City and county ambulance officials describe the scene as “total panic.” Robert Pedro, ambulance service district supervisor, says people from the fire department and two private ambulance services were working on the groomer and trainer, but said the trainer, Campbell, was already dead. Beckwith, according to Pedro, “was traumatized but he was awake and alert. He had multiple contusions and lacerations and several fractures to his ribs and arms,” he says.

Pedro also comments on injuries sustained by people caused by panic. “Three pregnant ladies were pushed over and stomped. One lady and her baby were trampled. One lady with a medical disorder couldn’t control herself; she was hysterical. Another lady had had a recent heart attack and couldn’t breathe.”

Patients are taken to Straub Hospital, The Queen’s Medical Center, Kuakini, St. Francis, Kapiolani Women’s and Children’s and Tripler Army Medical Center. “We had about three or four serious cases and the rest were minor – that is, they didn’t require advanced life support, Sakarta says.

According to both Sakarta and Pedro, the first ambulance arrived in four minutes, the second in six minutes. “We arrived to a crowd of thousands of people and I don’t think most of them knew who we were. When something like this happens, people lose conception of time. Minutes seem like hours,” says Pedro.

Officer Hagel responds to Straub hospital where Steve Hirano, who had suffered a broken ankle and bruises, had been transported. Hirano is treated by Dr. P. Dunn, and released shortly after.

Ann Takiguchi at the State Quarantine Station on April 21, 1994 relates that the initial examination of the elephant revealed 9 bullet wounds to its headpiece; most were ¼ inch in diameter and one was 3/8 inch. There was hemorrhaging of the elephant’s brain and a gunshot hole to its right side, behind the front leg.

John Cuneo, president of Hawthorn Corp., speculates that the apprentice groom set Tyke off when he walked behind her. “Tyke whirled and swung at the boy (the groom),” says Cuneo, who has been in the animal entertainment business since 1954. He adds this type of incident has never occurred in a show before. “We’ve had accidents, but they were with boys in stables,” Cuneo says, but “Never in a show.”

“The elephant has been through 15 shows and she’s been performing steadily. We’ve never had any problems with her before.” – Roy Yempuku, Circus International spokesperson

Mike Burgwin, chief investigator for the Hawaii Humane Society disagreed. He said his investigation shows that Tyke was a rogue elephant and became a danger because of what she did in Minot, North Dakota and Altoona, Pennsylvania. "Either one of those should have disqualified her from appearing in front of the public."

Tyke was reported to have caused about \$10,000 worth of damage to the Jaffa Mosque in Altoona when she charged through an entry to the arena on April 21, 1993 and ripped away part of a wall, said Ed Migley, owner of the Rhode Island-based Circus America. About 3000 children were attending the Circus America performance when, according to Tyke's handlers, she became agitated when someone walked behind her.

Tyke reportedly went on another rampage in July 1993 at the North Dakota State Fair in Minot, North Dakota, breaking away from trainer Tyrone Taylor and attacking groom Mike Pursley. "We were coming back from rehearsal..., and the elephants were all in a line, trunk to tail," said Pursley in the St. Louis Post Dispatch in 1994. "I was walking with the elephant behind Tyke, and suddenly she turned and charged me," he said. "She knocked me down, kicked me and tried to stomp on me."

Pursley said he was hospitalized in Minot with a separated clavicle, nerve damage, three broken ribs and a punctured lung. Purley said he recognized Tyke when he saw the Honolulu incident on television. "I knew right away that it was her, and it gave me a bad feeling," he said. "That man's death was needless. That elephant shouldn't have been performing."

Richard Rosio, a former elephant trainer, said in a sworn affidavit that many of the trainers refused to work with elephants owned by John Cuneo because they were "deemed to be difficult or dangerous to work."

He testified that Tyke was known historically by trainers to be a dangerous animal to work with and that John Cuneo was aware of the potential dangers in working Tyke in performances. He believed that Cuneo's reluctance "to withdraw dangerous animals caused the death of Allen Campbell."

Walt Campbell, brother of the trainer Tyke killed, said Allen would not have picked a "rogue" elephant to perform and that he was forced to use the 21-year-old African elephant. "My brother told him (Cuneo) several times that this elephant was not fit to be in public and requested not to use the elephant," said Campbell.

Although Cuneo, who owned two of the elephants leased to Circus International - including Tyke - said he personally never had a problem with this particular animal, Ginger Campbell, widow of Allen Campbell, said Cuneo knew Tyke was dangerous. "He never should have brought her over [to Hawaii]. He should have put her in a breeding facility."

According to Sally LaTorres, a former animal caretaker at the Hawthorn Corp. farm in Richmond, Illinois, Tyke was tough. "She'd hit you if you got close." LaTorres said

many elephants are startled when someone moves behind them unexpectedly, because the animal, hindered with poor eyesight, can't see what's going on. "Another elephant might have just carried on, but Tyke probably thought, 'While I'm here I might as well just hit you,'" she said.

Police Detective Joe Natividad said the 9,500-pound elephant acted in a predictable manner after the novice groomer startled her. "An elephant will predictably attack what's behind it, similar to a horse's reaction," explained Natividad, who interviewed circus personnel.

In Honolulu, Janet Scheffer, president of the advertising agency Mana Means Inc., said Cuneo told her prior to the tragedy that he was having "problems with the elephants," although he didn't elaborate. Cuneo denied mentioning such problems to Scheffer.

According to John Lehnhardt, assistant curator of mammals at the National Zoo in Washington, an elephant groom (like Beckwith) is a bottom-of-the-barrel kind of job, low-paying with a high turnover rate. "This elephant was famous for going after grooms," Lehnhardt says.

Tyke was originally purchased in Mozambique in 1973 and later sold to Cuneo, *The Honolulu Advertiser* reported. It also noted that African elephants were more difficult to handle than Asian elephants.

According to *The Honolulu Advertiser*, the USDA charged John Cuneo with violating the Animal Welfare Act. In a three-page complaint, the USDA said Cuneo failed to handle Tyke so it wouldn't harm itself or the hundreds of people watching the act at the Blaisdell Center. Cuneo and Hawthorn Corp. faced as much as \$5000 in fines and other sanctions. The complaint also cited the Altoona and Minot incidents.⁴⁰⁹

CASE STUDY #2 – LUCCA

"We ran in there, and I was hitting the cat in the head with a pipe, but it was too late."
- Brian Franzen, *Associated Press*, May 9, 1997.

Franzen Brothers Circus, Carrolltown, Pennsylvania, May 7, 1997

Billed as 'America's Favourite Show', the Franzen Brothers Circus comes to a halt during its Wednesday night performance in Cambria County when one of its tigers mauls its trainer, Wayne Franzen to death. Franzen, a former shop teacher from Wisconsin started the circus in 1974.

A crowd of about 300 people, more than half of them children, are watching the performance at a local fairground in Carrolltown, about 65 miles east of Pittsburgh. The St. Benedict Catholic School, as a fundraiser for its Home School Association, sponsors Wednesday night's show.

James Zangaglia, Chief Deputy Coroner for Cambria County says Franzen was wearing a new bright suit with puffy sleeves for only the second time when the 400-pound tiger apparently lunged out at the costume from behind.

However, Cambria County Coroner Dennis Kwiatkowski is not so certain. "We're not really sure what happened exactly," he says. "We have reports saying he was attacked from behind and reports saying he was attacked from the front. He was pronounced dead at the scene."

Police, after speaking with circus staff, say the suit may have prompted the attack.

By the time Franzen's son Brian, and Patty Frederick, a nurse from the audience come to his aid, Franzen is gored beyond hope. "We ran in there, and I was hitting the cat in the head with a pipe, but it was too late," says Brian Franzen.

Witnesses say the tiger, named Lucca, attacked Franzen when he turned his back, dragging him around the ring by the neck. The tiger's paw punctured Franzen's lung and tore apart his trachea and his esophagus. Franzen bled to ⁴¹⁰death within five minutes.

Parents shield the eyes of their children while announcers urge people in the crowd to leave quietly and orderly. Emergency counseling services are set up at the circus and a nearby school for those who witnessed the attack.

"Most of the kids felt confusion," says Philip Garmen, director of mental health at the Cambria County Mental Health Center. "A lot of them were elementary school age and they're not really attuned to death and dying. Some of them said they didn't want to go to the circus again."

Brian Franzen manages to get the tiger into the cage after the attack. "I go up there and it purrs to me. It doesn't understand what happened," he said.

Crisis counselors receive calls the next day from parents who saw the attack and are still shocked or concerned about the possible effects on their children.

Although a trapeze artist and novelty seller quit the night his father was killed, the younger Franzen says the show will go on, minus the tiger act.

Federal animal inspectors find no cause for the attack or violations in the way the 6-year-old tiger was kept. Kwiatkowski says an autopsy will be performed on Franzen but police are not investigating the incident. "It's a pretty clear-cut case," he says.

A DAY AT THE CIRCUS - A ZOOCHECK INSPECTION REPORT

In Toronto, Ontario on March 4, 5 and 6, 2005 the Garden Bros. Circus appeared at the Rogers Centre (formerly Skydome) for six shows. During a visit to the afternoon show on

Sunday, March 6, Zoocheck investigators made the following observations.

Before the show began, two elephants were set up to give rides to the public. Two staff members were working the rides, one at the top of a ladder assisting passengers on and off the elephants, the other, carrying an ankus, was supervising both female Asian elephants and the ten people (five on each animal) riding atop them.

The safety barrier, which made up the elephant ride area, consisted of 1/2 inch nylon rope, tied together here and there, and fed through an eyelet on the top of several free-standing metal posts and positioned to form a circle - the elephant ride area. The rope was approximately 36 inches from the ground and the metal posts were made possibly of aluminum or some other lightweight alloy.

Spectators standing against the roped barrier to take photographs of the animals periodically reached out to touch the elephants, which were approximately 5 to 6 feet away most of the time. The people were able to walk completely around the elephant ride area at all times. On at least one occasion, a spectator made contact with one of the elephants, unnoticed by the handler.

At one point during the intermission, the rope barrier became undone and fell to the floor. This allowed anyone from the public to walk right up to the elephants, if they so desired. Again, the handler did not notice this. When he was informed of the broken barrier, the handler retied it, but as he started back to the elephants, the rope fell apart again. The handler tried once again to retie it, and was successful.

From the time the rope came apart to the time the handler fixed it, perhaps four minutes had passed: two minutes while the rope was down, and two minutes while the handler fixed it. So for the first two minutes, the public had the opportunity to walk up to the elephants, and for the second two minutes, both elephants and their ten passengers were out of sight of the handler, unsupervised and unattended.

Had either animal become startled or decide to bolt at any time during the rides, it is doubtful the nylon rope could have contained them. It is also doubtful the handler could have stopped them, being outweighed by the animals by several thousand pounds.



Photo 8 - Garden Bros. Circus - Credit: Daniel Wilson

No warning signs were posted informing the public these animals were potentially dangerous and that they should not be touched, for health, safety or other reasons. A woman asked the handler if her son, who was about 6 years old, could touch the elephant. The handler simply said it was not allowed, without any explanation.¹²

The performance of three Asian elephants took place in the center ring, and lasted for approximately 4 1/2 minutes. The center ring was approximately 20 feet in diameter and formed by several boxes placed side by side, in the shape of a circle. These boxes, which featured alternating blinking red lights, were approximately 10 inches high. The boxes were the only barriers separating the elephants from the spectators, seated approximately 20 feet away.

Although some sections had metal bars - similar to stand-off barriers at some zoos - in front of them, there were no such barriers for the center three sections, where almost half the audience was seated. Again, if the elephants had decided to bolt, nothing would have prevented them from running into the people in the stands.⁴¹¹

INCIDENTS OF HUMAN INJURIES BY CIRCUS ANIMALS

Tarzan Zerbinì Circus – Nine people were injured when two elephants bumped into each other causing a barricade to topple in Lafayette, Indiana in 1992. The elephants were being led around the ring when one stopped unexpectedly. The next elephant bumped into the first and knocked it into the barricade, which toppled into the crowd, slightly injuring nine people who couldn't get out of the way in time. Police said most received

¹² Note: On a subsequent visit to the same circus on June 7, 2005 in Niagara Falls, Ontario, it was observed that the rope safety barrier had not been erected for the elephant rides and circus patrons were also seen standing on the boxes which formed one of the three rings to touch the elephants as they passed.

only minor cuts and bruises, but one woman was hospitalized because of a panic attack.⁴¹²

George Carden Circus - John Jordan of Jordan Productions was charged and fined by the USDA for neglect causing injury after a tiger named Maia escaped and bit a 13-year-old girl during a Shrine Circus performance on April 17, 1993. The incident happened at the Barton Coliseum in Little Rock, Arkansas. George Carden Circus International promoted the circus but the tiger was owned and trained by Jordan.⁴¹³

Clyde Beatty-Cole Bros. Circus - An impatient driver's honking horn allegedly spooked a line of circus elephants outside a shopping mall in Hanover, Pennsylvania, causing a near-riot that left windows smashed, cars dented and one elephant injured. "They just went between the cars like they were Matchbox cars," one witness said. "The trainers were chasing after them. The elephants were going crazy, making all kinds of noise. We were scared." Denise Hobart, marketing director for the circus, said the driver of a pickup truck was to blame. "He was behind the elephants, he was impatient, and he was a hot rod or trying to be cool, and he scared the elephants," she said.⁴¹⁴

King Royal Circus - A rider was nearly trampled by an elephant after being thrown off the animal in Comfort, Texas on March 5, 1996. As part of a promotion for the circus, Comfort High School Principal Jerry Boyd agreed to be one of two riders for an elephant race down the highway. The first elephant, the smaller of the two, wouldn't let him mount. As he was helped onto the larger one, the elephant began to behave erratically, attempting to shake Boyd off. Boyd fell and came close to being trampled before the trainers were able to get the elephant under control. Boyd suffered two broken ribs and injuries to his arm and wrist.⁴¹⁵

Jordan World Circus - On June 14, 1996, a circus elephant named Sue knocked down and repeatedly kicked one of her trainers as a number of children sat on the elephant's back. Other trainers regained control of the animal and the injured trainer was sent to the Wyoming Medical Center for treatment. Assistant elephant trainer Terry Wire said a nearby horse spooked the elephant. An eyewitness said one of the children fell off the elephant before it attacked the trainer. The circus was sponsored by the Shriners.⁴¹⁶

Royal Palace Circus - An animal trainer was nearly killed by a 150-pound Asian leopard during an evening performance in Lincolnton, North Carolina on February 9th, 1998. About 100 spectators watched the attack. The animal bit Joann Craigmile Nilsen on the head after she jerked the leopard's chain to stop it from lunging. Authorities said the woman would need reconstructive surgery. From her hospital bed, Nilsen said she was lucky to be alive. "I'm not going to get upset at them," she said. "They're just cats. They were just being what they are."⁴¹⁷

Royal Hanneford Circus - On February 21, 1999 a female elephant escaped from the center ring during a performance in Poughkeepsie, New York and charged toward the crowd. Three people were injured while attempting to flee the rampaging elephant.⁴¹⁸

Leonardo Circus - A circus worker was killed on May 14, 1999 by a 35-year-old female Indian elephant at the McIntyre Arena in Timmins, Ontario. Shayne Gressett, 23, “was down by the elephant’s front leg, putting a rosette around the leg, when the elephant made a single kick,” said veterinarian Andrea Schaap. “The elephant ... displayed no animosity, no anger towards the individual and just went back and stood quietly.”⁴¹⁹

Paramount Canada's Wonderland - A performing lion bit the arm of its trainer during the ‘Lights, Camera, Animals’ show at the popular theme park just north of Toronto on August 5th, 1999. Dozens of audience members fled the show and the lion was subdued with a fire extinguisher.⁴²⁰

Modelo Circus – An elephant gored and trampled her trainer to death in Bogota, Colombia on October 26, 1999. ‘Maggy’, one of three elephants performing under the big top, had just finished her routine when she suddenly turned on her whip-wielding trainer, Elias Mitrobich Garcia, and wrapped her trunk around him, police said. After throwing him in the air, Maggy impaled him with her tusks and then proceeded to stomp all over him on the ground. Circus workers shot Maggy six times, but Garcia, skull crushed and lying in a pool of blood before a crowd of 400 people, died on the circus tent floor.⁴²¹

Vostok Circus - Five circus lions devoured a 6-year-old boy after one of the lions snatched him from his father's hand and dragged him into the cage in Recife, Brazil on April 9, 2000. Police wounded two people with bullet fragments in the ensuing panic as they sprayed the top of the cage with machine-gun fire to scare the lions off the boy’s body. “He grabbed my son with his paws and pulled him into the cage, and when I looked up he was in the lion's mouth,” the boy’s father said. It took police more than four hours to recover the torn body from the cage. Four of the five lions were shot to death. Inspectors told TV Globo that the circus had breached safety regulations by allowing the public to walk right up to the cages.⁴²²

Oscarian Brothers Circus – The USDA charged Manuel Ramos in June of 2000 for failing to properly restrain an elephant that contributed to a woman’s death. “Our regulations exist for a reason,” said W. Ron DeHaven, deputy administrator for animal care with APHIS, “adding, “If they are not followed, there can be a risk to the animals we protect and to people.” Ramos failed to contain the elephant, which resulted in the elephant attacking and killing the woman. APHIS investigators also found that Ramos had not used appropriate methods to prevent diseases by failing to have elephant handlers and trainers tested for tuberculosis. While the circus agreed to pay a civil penalty of \$20,500, the entire amount was suspended provided there were no future violations of the Animal Welfare Act.⁴²³

Lennon Brothers Circus - Lion tamer Geoffrey Lennon was mauled by two of his animals during a circus performance in Penrith, Australia on August 11, 2001. His grandmother said the two lions “threw him around like a rag doll.” Emergency workers had to wait for the animals to be pushed back by fire hoses before they could reach the injured tamer, who later underwent surgery for puncture wounds to his chest, back, arms

and buttocks. Lennon was suffering severe shock when paramedics arrived to treat him.⁴²⁴

Circus Vasquez – Two Hawthorn elephants named Debbie and Judy rampaged at the Word of Life Church in Charlotte, North Carolina on October 27, 2001. Two church members were nearly trampled and children had to be rushed to safety. The elephants crashed into the church through a window, buckling the walls and doorframes. They also knocked a car 15 feet. The animals caused an estimated \$75,000 in damages.⁴²⁵

Shrine Circus - Two elephants escaped during a show on June 19, 2002 in Menomonie, Wisconsin. The elephants, ‘Tory’ and ‘Mary’, bolted out the circus tent, scattering crowds. Mary hiked 2 miles through town and was later recaptured at the University of Wisconsin-Stout. One child was injured and the elephants caused extensive damage, which included wrecking a city truck.⁴²⁶

Cole Bros. Circus - A white tiger named Apollo escaped from its cage and ran around Forest Park and the Jackie Robinson Parkway in Queens, New York on July 31, 2004. The tiger was being transferred from his holding cage to a performance cage when it escaped. The sight of the 450-pound cat caused several pile-ups involving five cars, with four adults and one child suffering minor injuries (The newspaper also noted that two elephants from the Clyde Beatty-Cole Brothers Circus escaped at Forest Park in 1995, causing a panicked stampede in which 12 people were injured).⁴²⁷

Shrine Circus – An elephant being loaded into a truck trampled a circus trainer to death at the Memorial Coliseum in Fort Wayne, Indiana on February 1, 2005. Two of the three handlers loading the elephant into the trailer left while the third stayed behind to lock the trailer door. The man died of blunt force trauma to the chest at hospital a few hours after being found, police said. Police indicated they did not know how many times the elephant stepped on the man.⁴²⁸

CONCLUSION

Circuses can be fun, exciting and even inspiring. They can also be potentially dangerous. As the evidence shows, when an animal is confined, it will try to escape; when it is deprived of stimulation, it will try to compensate and when it is beaten or abused, it may try to retaliate.

And predatory animals, like lions and tigers, regardless of whether they are trained, cannot be tamed. They are hard-wired to attack under certain circumstances, as Joann Craigmile Nilsen, Kathy Carlstead and Dr. Temple Grandin have testified.

Some circuses however, dismiss, downplay or misrepresent the risks to human safety.

“At no time in its 130-year history has Ringling Bros. had an animal-related incident that placed a member of the public at risk”⁴²⁹

But as the New York Times reported in March of 1950, an elephant named Dolly killed a five-year-old boy at Ringling's Sarasota, Florida winter quarters. Dolly, a circus veteran previously considered gentle, grabbed the boy who had been feeding her peanuts, and crushed his skull underfoot.⁴³⁰

The circus manager told a reporter the boy had reached under the guardrail to retrieve some peanuts he had dropped when Dolly reacted "like a dog when someone takes a bone away."⁴³¹

Circus advocates also point out that more people have been injured at hockey games,⁴³² while snowmobiling,⁴³³ and by television sets and garden hoses⁴³⁴ than have been injured by animals at circuses.

Perhaps this is true, but it should be noted that hockey pucks are not wild, potentially dangerous animals. Garden hoses cannot bite or stomp people to death and snowmobiles are not always searching for ways to escape. And it is far easier to control a television set than it is to control a rampaging elephant.

Put a hockey stick in a cage, without enrichment or stimulation, and nothing happens. Beat a garden hose or snowmobile with an elephant hook, and it won't turn on you in rage. These inanimate objects will not develop abnormal behaviours or become aggressive. Elephants, lions, tigers and other animals can.

The same arguments have been raised about cars. More people die in automobile accidents than at circuses, yet no one is suggesting a ban on automobiles. Once again, this is true. But up to a point, all these objects are within our control; they are made by us, for us, to be used responsibly. Not so with wild, potentially dangerous circus animals.

Nevertheless, if you operate a snowmobile irresponsibly, or if you drive your vehicle in excess of the speed limit, the likelihood of an accident increases. If a hockey stick is used as a weapon, someone could get hurt. It's common sense.

So when potentially dangerous wild animals are deprived of their basic biological and behavioural needs, when they are confined and when they are beaten, eventually, as Tinbergen said, they will "misfire." Add to the mix an auditorium full of people and someone is going to be hurt. It's common sense. Accidents, injuries and deaths will happen - sooner or later - guaranteed.

Some promoters point to the fact that although many circus workers have been injured and killed by circus animals, the risks to the public are exceedingly small.

*"In 1999 alone, estimates show that well over 30 million Americans attended circuses with animals without incident."*⁴³⁵

Even if this were true, which it is not, one should not wait for an accident to happen to make a potentially unsafe situation safer. No one waits for a house fire before installing a

smoke detector. The public has put its faith in the circus, and those in positions of authority, to protect them.

So to protect human safety, these animals should not be part of the circus' repertoire. Prevention goes a long way, and is the only responsible course to take. It's also the only way to safeguard the public and reduce the chances for accidents to occur due to injuries, escapes and attacks by wild, potentially dangerous animals.

Circuses should be allowed to continue - without wild, potentially dangerous animals - to entertain audiences in a fun and safe environment. Many circuses have been successful without using animals. This should be considered to prevent future injuries or worse.

Daniel K. Wilson, June 2005

Table 1. COMPARISON OF ENCLOSURE SIZES FOR CIRCUSES VISITING CANADA

	Nova Scotia Standards (sq. feet)	Circus Vargas (1986)	Fossett Family (1988)	George Carden (1991)	Garden Bros. (1994)	George Carden (2000)	Tarzan Zerbini (2000)	Tarzan Zerbini (2004)
Elephants	600				2500 (3)*	152 (?)**	360 (3)** 8000*	420 (3)** 3780 (1)* 6750 (2)*
Big Cats	215	20 (?)***			80 (2)**			
Bears	/			48 (4)* 24 (2)*		25 (3)** 25 (2)**		
Primates	/				4 (1)***			
Kangaroos	/		6 (1)** 30***					

() indicates number of animals in each enclosure
 * outdoor enclosure
 ** transporter
 *** housing

Note: Bears and primates are now banned for use in circuses in the province of Nova Scotia.

Table 2. COMPARISON OF AZA STANDARDS AND CIRCUS ENCLOSURE SIZES

	AZA Standards (sq. feet)	Circus Vargas (1986)	George Carden (1991)	Garden Bros. (1994)	George Carden (2000)	Tarzan Zerbini (2000)	Tarzan Zerbini (2004)
Elephants	400** 1800*			2500(3)*	152 (?)**	360 (3)** 8000*	420 (3)** 3780 (1)* 6750 (2)*
Big Cats	300	20 (?)***			80 (2)**		
Bears	300- 400			48 (4)* 24 (2)*		25 (3)** 25 (2)**	
Primates	100			4 (1)***			

() indicates number of animals in each enclosure
 * outdoor enclosure
 ** transporter
 *** housing

Note: The Elephant Sanctuary in Hohenwald, Tennessee is approximately 117,612,000sq ft; home ranges for free-living elephants are about 60-100 times AZA standards, from 5-20sq mi for cows and young and from 200-600sq mi for bulls.

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