EXPERT WITNESS REPORT OF DR. JOYCE POOLE

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Prepared for:

American Society for the Prevention of Cruelty to Animals

Animal Welfare Institute

The Fund for Animals

Animal Protection Institute

&

Tom Rider

Plaintiffs in ASCPA v. Ringling Brothers and Barnum & Bailey Circus

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I. Background and Qualifications

I have studied elephants for over thirty years as demonstrated by my *Curriculum Vitae* (Appendix A). I received a Bachelor of Arts with High Honors in the Biological Sciences from Smith College in 1979. I received a Ph.D. in Zoology from the University of Cambridge in 1982. My Ph.D. thesis was on musth and male-male competition in African elephants. I did my postdoctoral research at Princeton University studying the vocal and olfactory communication of elephants at Amboseli National Park in Kenya. I have also studied the effects of ivory poaching of African elephants on the age structure and social and reproductive patterns of several east African elephant populations, and I have carried out and continue to carry out long-term studies of elephants' social and reproductive behaviour with particular emphasis on vocal repertoires, communication, and cognition.

I have collaborated on several other elephant studies including genetic paternity, inbreeding avoidance, seismic communication, the long-term effects of trauma, the effects of age and experience, and cognition. I have also authored several papers on elephant welfare. As a result of my work at Amboseli and in my role as Research Director of the Amboseli Elephant Research Project, and Member of the Scientific Advisory Committee of the Amboseli Trust for Elephants I am intimately familiar with the work and findings of my colleagues, which covers a broad scope of elephant behavior, social development, growth, longevity, life history, reproductive behavior and leadership. To date, the research that has been accomplished on the elephants at Amboseli represents the most comprehensive compilation of data on wild elephants and is relied on throughout the world for establishing basic to complex facets of wild elephants and their lives. I am the lead author on the *Loxodonta africana* profile in the upcoming volumes on Africa mammals edited by Jonathon Kingdon. I am sub-editor for the seven chapters on elephant social behavior for the upcoming book entitled, *The Amboseli Elephants: A long-term perspective on a long-lived mammal.*

My own research has included logging thousands of hours in the field observing and studying elephants both African and Asian. Of these hours, many of them have been spent studying the elephants in Kenya at Amboseli National Park. I have also studied African elephants in Laikipia, Mara, and Tsavo, in Kenya, in Queen Elizabeth in Uganda, and in Mikumi and West Kilimanjaro, in Tanzania. I have observed wild African elephants in Kenya, Uganda, Tanzania, Botswana, South Africa, and Zimbabwe. I have also observed wild Asian elephants in Mudumalai National Park, India and in Yala, Uda Walawe, Wasgomuwa and Minneriya National Parks, Sri Lanka. I have collected field recordings from Asian elephants in the last three mentioned locations.

I have observed semi-captive orphaned African elephants in Tsavo, Kenya and Asian elephant orphans in Uda Walawe, Sri Lanka; I have made vocal recordings in both locations. I have also made observations of captive elephants in Thailand that were in the process of being released into the wild. Furthermore, I have observed the behavior and a variety of human handling of captive elephants in Zimbabwe, South Africa, Botswana, and Kenya, as well as in zoos and sanctuaries in the United States. Likewise, I have observed the behavior and human handling of captive Asian elephants in India, Sri Lanka and Thailand, as well as in zoos in the United States and in the circus in Norway. I have ridden on elephants in India and in Botswana. In Botswana, I

received brief instruction from elephant trainer Randall Moore on the handling of his elephant named Abu.

In addition to elephant field research, I have key elephant conservation and management experience. Between 1990 and 1994 I headed the Elephant Program for Kenya Wildlife Service under the direction of Dr. Richard Leakey. I was responsible for establishing and then running the conservation and management program for the entire elephant population of Kenya, which then numbered some 25,000 elephants. I was responsible for elephant surveys, the training of Kenyan staff members, setting elephant management policy, making elephant management decisions, and overseeing human-elephant conflict mitigation. I was privy to poaching and ivory trade intelligence, and attended a meeting of the parties to the Convention on International Trade in Endangered Species of Flora and Fauna as a delegate from Kenya. On the basis of this experience and upon spending 35 years of my life in Africa, I have extensive expertise on what practices can be considered as benefiting the conservation of wild elephants as well as what practices can be considered as being in the interests of elephants both Asian and African.

I am also co-founder of the organization ElephantVoices. The mission of ElephantVoices is twofold: to further the study of elephant communication and to act as a voice for the interests of elephants. Our Mission Statement is included in Appendix B. ElephantVoices runs a long-term elephant communication study in Amboseli National Park in Kenya; through publications, the media, our website and blog we share our knowledge of elephants with the public. We speak on behalf of the interests of elephants according to our advocacy policy (Appendix B).

In the past ten years, I authored and was the first listed author on the following publications:

Poole, J.H. Forthcoming. The behavioral context of African elephant acoustic communication. In: *The Amboseli Elephants: A Long-Term Perspective on a Long-Lived Mammal.* Moss, C.J. & Croze, H.J. (Eds.) *University of Chicago Press.*

Poole, J.H. and Granli, P.K. Forthcoming. Signals, gestures and behaviors of African elephants. In: *The Amboseli Elephants: A Long-Term Perspective on a Long-Lived. Mammal.* Moss, C.J. & Croze, H.J. (Eds.) *University of Chicago Press.*

Poole, J.H., Lee, P.C. & Moss, C.J. Forthcoming. Long-term reproductive patterns and musth. In: *The Amboseli Elephants: A Long-Term Perspective on a Long-Lived Mammal.* Moss, C.J. & Croze, H.J. (Eds.) *University of Chicago Press.*

Poole, J.H. Moss, C.J. and Swart, E. Elephants in a changing world: ethics and attitudes. Forthcoming. In: *The Amboseli Elephants: A Long-Term Perspective on a Long-Lived Mammal.* Moss, C.J. & Croze, H.J. (Eds.) *University of Chicago Press.*

Poole, J.H. & Granli, P.K. In press. Mind and Movement: Meeting the Interests of Elephants. In: *The Elephant in the Room*: *The Science and Well-Being of Elephants in Captivity*. Eds. D. L. Forthman, L. F. Kane and P. Waldau. North Grafton MA: Tufts University Cummings School of Veterinary Medicine's Center for Animals and Public Policy.

Poole, J.H. & Moss, C.J. In press. Elephant sociality and complexity: The scientific evidence. In: *Never Forgetting: Elephants and Ethics*. C. Wemmer & K. Christen (Eds.). John Hopkins University Press.

Poole, J.H., Whyte, I. & Kahumbu, P. In press. Species *Loxodonta africana*. In: *The Mammals of Africa*. Jonathon Kingdon, David Happold & Thomas Butynski (Eds.). Academic Press.

Poole, J.H., Tyack, P.L., Stoeger-Horwath, A. & Watwood, S. 2006. Vocal imitation in African savannah elephants (Loxodonta africana). Razprave IV. Rezreda SAZU, XLVII-3: 118-124

Poole, J.H. & Granli, P.K. 2005. The ethical management of elephants and the value of long-term field research. AAVS 63: 2-5

Poole, J.H., Tyack, P. L., Stoeger-Horwath A.S. & Watwood S. 2005. Elephants are capable of vocal learning. *Nature*, 434: 455-456.

Poole, J. H. & Granli, P.K. 2004. The visual, tactile and acoustic signals of play in African savannah elephants. In: *Endangered Elephants, past present & future*. Jayewardene, Jayantha. (Ed.) Proceedings of the Symposium on Human Elephant Relationships and Conflicts, Sri Lanka, September 2003. Biodiversity & Elephant Conservation Trust, Colombo. Pages 44-50.

Poole, J.H. 2000. Family reunions. In: *The Smile of the Dolphin: Remarkable Accounts of Animal Emotions*, Marc Bekoff (Ed.). Discovery Books, New York: pp. 22-23.

Poole, J. H. 2000. When Bonds are broken. In: *The Smile of the Dolphin: Remarkable Accounts of Animal Emotions*. Marc Bekoff (Ed.). Discovery Books, New York: pp. 142-143.

Poole, J.H. 1999. Signals and Assessment in African Elephants: Evidence from playback experiments. *Animal Behaviour*, 58:185-193.

Poole, J.H. 1998. An exploration of a commonality between ourselves and elephants. Special Issue *Etica & Animali*. 9:85-110.

Poole, J.H. 1998. Communication and social structure of African elephants. In: *Elephants.* Care for the Wild International, UK: pp 40-52.

Poole, J.H. 1999. Ella's Easter Baby. *Care for the Wild Magazine*.

Poole, J.H. 1999. Voices of elephants. *Sotokoto* 8(2): 14-16.

Poole, J. & Reuling, M. 1997. A survey of elephants and other wildlife of the West Kilimanjaro Basin, Tanzania. Typescript Report. 66p.

Poole, J.H, 1997. Tuskless. *Swara* 20 (3): 26.

Poole, J.H. 1997. *Elephants*. Colin Baxter Photography, Grantown-on-Spey, Scotland.

Poole, J.H. 1996. The African Elephant. In: *Studying Elephants.* Kadzo Kangwana (Ed.). African Wildlife Foundation Technical Handbook Series: pp.1-8.

Poole, J.H. & R.E. Leakey. 1996. Kenya. In: *Decentralization and Biodiversity Conservation.* Ernst Lutz & Julian Caldecott (Ed.). A World Bank Symposium: pp. 55-64.

Poole, J.H. 1996. *Coming of Age with Elephants.* Hyperion Press, New York; Hodder & Stoughton, London.

In the past ten years, I have also co-authored the following publications:

Archie, E.A. Maldonado, J.E. Hollister-Smith, J.A, Poole, J.H., Moss, C.J. Fleischer, J.C., Alberts, S.C. In press. Fine-scale population genetic structure in a fission-fusion society. *Molecular Ecology.*

Archie, E.A., Hollister-Smith, J.A., Poole, J.H., Lee, P.C., Moss, C.J., Maldonado, J.E., Fleischer, R.C., Alberts, S.C. 2007. Behavioural inbreeding avoidance in wild African elephants. *Molecular Ecology*, 16: 4128-4148

Bates, L.A., Sayialel, C.N, Njiraini, N.W, Poole, J.H., Moss, C.J. & Byrne, R.W. 2007. Elephants classify human ethnic groups by odour and garment colour. *Current Biology.* 17:1-5.

Bates, L.A., Sayialel, C.N, Njiraini, N.W, Poole, J.H., Moss, C.J. & Byrne, R.W. 2007. African elephants have expectations about locations of out-of-sight family members. Biology Letters: doi:1098/rsbl.2007.0529, 1-3.

Bradshaw, I.G.A., A.N. Schore, J.L. Brown, J.H. Poole & C. J. Moss. 2005. Elephant Breakdown. Social trauma: Early trauma and social disruption can affect the physiology, behaviour and culture of animals and humans over generations. *Nature,* 433: 807.

Dobson, A. P. and J. H. Poole 1998. Conspecific aggregation and conservation biology. In: *Behavioral Ecology and Conservation Biology*. T. Caro (Ed.). Oxford, Oxford University Press: pp.193-208.

Hollister-Smith, J.A., Poole, J.H., Archie, E.A., Vance, E.A, Georgiadis, N.J., Moss, C.J., Alberts, S.C. (2007) Age, musth and paternity success in wild male African elephants, Loxodonta africana. *Animal Behaviour*, 74: 287-296.

Lee, P.C., Poole, J.H. & Moss, C.J. Forthcoming. Male social dynamics: Independence and beyond In: *The Amboseli Elephants: A Long-Term Perspective on a Long-Lived Mammal.* Moss, C.J. & Croze, H.J. (Eds.) *University of Chicago Press.*

Mutinda, H.S., Poole, J.H., Moss, C. J. Forthcoming. Decision-making and Leadership in exploring the ecosystem. In: *The Amboseli Elephants: A Long-Term Perspective on a Long-Lived Mammal.* Moss, C.J. & Croze, H.J. (Eds.) *University of Chicago Press.*

O'Connell-Rodwell, C., Wood, J.D., Kinzley, C., Rodwell, T.C., Poole, J., & Puria, S. 2007. Wild African elephants (*Loxodonta africana*) discriminate between familiar and unfamiliar conspecific seismic alarm calls. J. Acoust. Soc. Am. 122: 823-830.

Slotow, R., G. van Dyke, J. Poole, B. Page & A. Klocke. 2000. Older bull elephants control young males. *Nature*, 408: 425-426.

Stoeger-Horwath, A., Poole, J.H., Granli, P.K., Stoeger, S., Lintner, R., & Kratochvil, H. Submitted. Call combinations in African savannah elephants.

The remainder of my publications are listed in my Curriculum Vitae, which is attached as Appendix A to this report. The only lawsuit in which I have testified in Court during the past

four years was International Fund for Animal Welfare, et al. v. Minister for the Environment and Heritage et al., N2005/916, regarding the export of Asian elephants from Thailand to Australia. I have submitted affidavits and other statements in support of various lawsuits that have been brought to benefit elephants in which I have never provided live testimony.

II. Assignment

I have been asked to provide my expert opinion on whether the treatment of Asian elephants by Ringling Brothers and Barnum & Bailey Circus and Feld Entertainment (collectively referred to as Ringling Brothers) constitutes "takes" of the endangered Asian elephants under the U.S. Endangered Species Act because Ringling Brothers' use of bullhooks and other instruments on Asian elephants and the chaining and confinement of the elephants wounds, harms, and/or harasses them.

I participated in an inspection of five elephants at the Center for Elephant Conservation (CEC) and my conclusions regarding this inspection are included in Appendix C. I have been provided with evidence of Ringling Brothers' practices including video footage, statements and testimony of eyewitnesses, various records, and photographs and video footage from an inspection in Auburn Hills, Michigan. A complete list of the evidence I have considered in rendering the opinions in this report is included in Appendix D. I have summarized my observations of one particular DVD in Appendix E. My opinions are based on the evidence I have considered, my 33 years of experience studying and protecting wild elephants, my experience studying semi-captive orphaned elephants, and my observations of elephants in captivity.

I have not been compensated for my time for preparing this report or for any of the opinions that I express in the report. Plaintiffs in the case have reimbursed me for the costs associated with serving as an expert witness including travel, hotel, and food costs. In the event I am deposed or called to testify at trial, my hourly rate is $ 450.00 US dollars. However, if I am called by the plaintiffs in this case, I intend to waive my fee.

III. Summary of Opinions

It is my expert opinion that the use of bullhooks and other instruments on the Ringling Brothers' elephants and their chaining and confinement amount to takes under the Endangered Species Act. These animals have been trained and confined to such an extent that at first blush they are behaviorally hardly recognizable as elephants. They lack the spontaneity, curiosity, and, for lack of a better term, spirit that are so essential and characteristic of elephants. From the wounds on their bodies to their failure to engage in the most fundamental of elephant behaviors, it is clear these animals have been severely impacted by their treatment at Ringling Brothers. The injuries the elephants have received (as evidenced by their wounds and their medical records) and the drastic modification or termination of their most essential behaviors (as seen in the video footage and during the inspections) supports my conclusion that these animals are wounded, harmed, and harassed by the bullhooks and other tools used on them by employees of the circus and by the chaining and confinement to which they are subjected. All the opinions that I express in this

report are based on the assumption that the plaintiffs will be able to demonstrate to the Court that Ringling Brothers' employees use bull hooks and other instruments on the elephants, including to hit and hook them, and keep the elephants chained and confined for many hours each day. My opinions were informed by the evidence that has been presented to me and that is discussed throughout this Report. While this evidence supports my conclusions that the use of the bull hook and other instruments and the chaining and confinement of the elephants "takes" the elephants within the meaning of the Endangered Species Act, it is not the sole basis for any of my conclusions.

Ultimately, Ringling Brothers does not maintain its elephants in excellent condition because they do not meet the very basic interests of an elephant (Poole & Granli, in press), nor can I conclude that Ringling Brothers is making significant contributions to the conservation of Asian elephants by engaging in a captive breeding program that appears to be designed to primarily create additional elephants for use in the circus.

IV. Detailed Discussion of Opinions

A. Background on Asian Elephants

The Order Proboscidea consists of 10 families, 45 genera, and 185 species and subspecies. Of this extensive radiation only three species remain, all classified in the family Elephantidae (Shoshani and Tassy, in press a). The living elephants, once widespread across the continents of America, Europe, Asia and Africa, now occur as fragmented remnants in parts of Asia and sub-Saharan Africa (Meredith, 2001). Three species, African savannah and forest elephants, *Loxodonta africana* and *L. cyclotis*, and Asian elephants, *Elephas maximus*, represent the impoverished remains of what was once a rich family tree. The Asian species has been divided into three subspecies which includes: *Elephas maximus maximus* found on Sri Lanka, *Elephas maximus indicus* found on the sub-continent of India and throughout South-East Asia; and *Elephas maximus sumatranus*, the smallest of the three, found on Sumatra and Borneo.

The fossil record of the living Asian and African elephants goes back to between 7.3 and 5.4 million years ago (Shoshani and Eisenberg, 1992; Shoshani and Tassy, in press b). The extant elephants are, however, remarkably similar across a broad range of biological, physiological, ecological and behavioral parameters (Payne, 2003; Sukumar, 2003; Figure 1). The most obvious superficial difference between African and Asian elephants is the size of the ears: the African elephant has very large ears, while the Asian elephant has smaller ears. This difference is probably related to the more forest dwelling nature of the Asian elephant. The other obvious superficial difference is that female African elephants have tusks while their Asian counterparts do not. Only male Asian elephants have tusks and not all males even have them. Female Asian elephants can have tushes, which are a much smaller version of tusks. The shape of an African elephant's back is concave while an Asian elephant's is convex. The highest point on an African elephant is its shoulder, while in an Asian elephant the highest point is the top of its head, which, unlike its African cousin is twin-domed. Asian elephants have more body hair than African elephants, perhaps connected to the fact that Asian elephants are more closely related to the woolly mammoths. The African elephant has two finger-like tips to the end of its trunk, while the

Asian elephant has only one. The chewing surface of the teeth of the two species is different: the tooth plates of the African elephant are lozenge-shaped while the plates of the Asian elephants are closed compressed loops. Asian elephants have five toe and toenail-like structures on their forefeet while African elephants have four or five (Shoshani, 1992a).

There are very few obvious ecological and behavioral differences between African and Asian elephants, and variation between individuals and populations may account for as much disparity as the differences observed between species. In at least one population of each of the three species, the life histories and behaviors of hundreds of individually known animals have been followed for more than a decade: In Amboseli, Kenya, African savannah elephants have been studied by Cynthia Moss and her team for 35 years; in Nouabale-Ndoki National Park, Central African Republic, African forest elephants have been observed by Andrea Turkalo and colleagues for 17 years; and in Mudumalai National Park, India, Raman Sukumar and his team have studied Asian elephants for 25 years. These long-term research projects as well as other studies confirm that the life history and behavior of elephants are fundamentally similar across all three species (Payne 2003). Across a broad range of parameters (e.g. social structure (Sukumar 2003; Moss & Poole, 1983; Wittemyer et al., 2005; Archie et al., 2005), individual relationships (Sukumar 2003; Payne 2003); family size (Sukumar, 2003; Moss & Poole, 1983; Payne 2003), intelligence (e.g. Rench 1956, 1957; Hart et al., 2001; Plotnik et al., 2006; Cozzi et al., 2001; Shoshani et al., 2006; Douglas-Hamilton et al., 2006; Poole & Moss, in press), diet (Sukumar, 2003), musth (Jainudeen et al., 1972; Poole, 1987; Poole, 1989a), mating behavior (Poole, 1989b), maternal behavior (Payne, 2003; Lee, 1986); communication (Poole et al., 1988; Payne et al., 1986; Poole, forthcoming; Poole, personal observation), age at first reproduction and interbirth interval (Moss, 2001; Sukumar, 2003; Payne, 2003), broad similarities exist.

Thus, in my opinion, scientific data from either species are equally applicable when it comes to evaluating the treatment of elephants by Ringling Brothers. Where there are obvious differences between the two species, I will make clear reference to Asian elephants, otherwise I will treat the two species as similar.

One notable characteristic of elephants is that they have never been “domesticated” by humans (see comment by Kurt, 2006, below). In biological terms, domestication refers to changes in the genetic makeup of a population that affect the physical or behavioral character of individuals, a process that takes many generations of selected breeding.

Elephant capture and taming began in the Indus Valley more than 4,000 years ago and Asian elephants have continued to be captured, trained and worked since that time (Hart & Sundar, 2000). Asian elephants are often referred to as a domesticated species, but this is an erroneous use of the term. Historically, elephants have never bred well in captivity (Sukumar, 2003) and, consequently, a continuous supply of elephants captured from the wild was needed to maintain or increase the captive stocks. The off take of elephants from the wild was historically so great that elephant populations on the subcontinent of India were locally depleted (Sukumar, 2003).

In addition, there has been no selection to create domestic “breeds” among Asian elephants. The number of generations of captive-bred elephants is not sufficient for any physical or behavioral adaptations to occur and therefore it is incorrect to refer to them, or think of them, as a “domesticated” species (Csuti in Fowler & Mikota, 2006).

There are groups of elephant specialists that have united under the banner of the International Union for the Conservation of Nature (IUCN), one for Asian elephants and one for African elephants. Neither of these specialist groups acknowledges that elephants are domesticated. To the contrary, at the Kuala Lumpur meeting of the Asian Elephant Specialist Group (AsESG) in 2006, Fred Kurt, a member of the group (2006), remarked, "It is a good sign that the AsESG stopped using the term 'domesticated elephants'" and "that tame elephants are not domesticated animals like cattle, horses or dogs but captive wild animals and should be treated accordingly." Therefore, while elephants may become habituated to, or "tamed" by, human beings, they are still wild animals with the same inherent physical, behavioral, social and emotional characteristics and needs as wild elephants. Evaluating the condition of captive elephants anywhere should be, therefore, based on conclusions from studies of elephants in their natural habitat.

Due to the open habitat afforded on the savannahs of Africa, there have been more detailed and long-term studies completed on free-living African savannah elephants than on free-living Asian elephants or African forest elephants. Conversely, because of the long and widespread tradition of capturing and training Asian elephants, more of the captive studies have been carried out on Asian elephants. Furthermore, until the early 1980s, there were relatively few African elephants in zoos and circuses (compared to the number of Asian elephants in captivity) where many such studies have taken place. While studies undertaken in captivity allow for the collection of data that may be impossible in the wild, viewed out of the context of the wild these may lead to erroneous judgements about function (e.g., Tisdale, 1989). In addition, the lack of exercise and over nutrition experienced by both African and Asian elephants in captivity increases growth rates and may artificially reduce age at first reproduction, onset of musth and other life history parameters. Furthermore, the lack of a natural developmental and social context in captivity induces abnormal behavior, such as early musth and prolonged duration of musth, poor mothering abilities and other anti-social behavior.

In my opinion, where data on basic biology, and particularly behavior, is available from both captive and wild situations, data from the wild is more valid, even where it is derived from African elephants.

1. Basic Elephant Physiology and Biology

Evolutionary trends from the earliest elephant ancestor about 55 million years ago include increase in tusk size, the development of a trunk, increase in trunk length, a 10-fold increase in encephalization quotient (EQ, a measure of intelligence) and increasing body size (Shoshani & Tassy, in press a & b). Exceedingly large and long-lived, elephants are dependent upon moving over large distances in search of food, water, minerals and social and reproductive partners (Poole & Granli, in press). Physically impressive and vigorous, an adult male African elephant may be 4 m tall (Haynes, 1991) and weigh as much as 6,500 kg (Moss, 1982). No other terrestrial animal alive today weighs half as much (Haynes, 1991). Male Asian elephants are slightly smaller, but may attain a height of 3.5 m and a weight of 5,500 kg (Poole, 1997). With a maximum lifespan in the wild of 65-70 years (Moss, 2001), the extant elephants are unusually long-lived mammals (Eisenberg, 1981) although humans have an enormous negative impact on

the life expectancy of wild elephants. In Amboseli life expectancy for a female is 41 years, but excluding mortality caused by humans it increases to 54 years. Males in the wild suffer higher mortality than females at all ages. Life expectancy for males is 24 years, but in the absence of human induced mortality it increases to 39. Maximum lifespan for females is greater than 69 years and for males greater than 65 years (AERP long term records).

To support their great weight and enable them to efficiently walk over long-distances on rough surfaces, elephants have evolved relatively inflexible pillar-like legs and cushioned feet. Elephants exhibit unique morphological peculiarities designed to support their enormous bulk (Weissengruber & Forstenpointner, 2004). The skeleton of the mammoths, mastodonts and modern elephants are all relatively inflexible, characterized by columnular legs, lacking flexed-joints, and a nearly horizontal spine offering support for their heavy bodies. Unlike other animals, the upper and lower portions of the legs are aligned almost vertically when the limbs are extended and the maximum forward and rearward motion of the legs is restricted so that the legs are almost always under the body (Haynes, 1991).

The musculoskeletal foot arch is structured so that an elephant stands on an extensive cushion such that none of the elephant's toes touches the ground. Each toe has separate muscles, indicating that movements of the digits, such as spreading and contracting, are important. The toes of the elephant are then embedded within a common "skin-shoe". Both the musculoskeletal foot arch and its cushioning provide an important shock absorbing function. The proper posture of the foot and its skeletal elements likely plays a key role in supporting the elephant's enormous body weight and in distributing the mass over the entire sole (Ramsay and Henry, 2001) and, aided by elasticity mechanisms minimizes stress and energy consumption during both resting and locomotion (Weissengruber & Forstenpointner, 2004).

A pouch for water storage in the elephant's throat allows it to survive long walks without access to water (Shoshani et al., 1997). To dissipate heat accumulated by their large warm bodies (due to small surface area to body size ratio) elephants evolved large, highly moveable ears with which to fan and cool their bodies. The almost paper-thin skin on the backs of these large fans is supplied with numerous blood vessels designed to cool the elephant's circulating blood, and is very sensitive.

The skin of an Asian elephant is smoother than that of an African elephant (Poole, 1997). The skin of an elephant may be as thick as 2.5 cm on its back, head, and on the soles of its feet, while the skin of the anus, around the mouth, inside the ear and the posterior side of the ear is almost paper-thin (Shoshani, 1992b; Poole, personal observation). Despite the rough appearance of an elephant's skin, it is an extremely sensitive organ containing many nerve centers (pressure points) (Sikes, 1971, Deraniyagala, 1955, Poole, 1997). For example, through the sense of touch, elephants use the very sensitive soles of their hind feet to inspect objects (Poole, personal observation).

Elephants are large-brained (Roth, 1999; Cozzi et al., 2001; Shoshani et al., 2006) intelligent (Rench, 1956; Rench, 1957; Hart et al., 2001; Shoshani & Eisenberg, 1992; Poole, 1998; Douglas-Hamilton et al., 2006; Poole & Moss, in press) and inquisitive animals. We only need watch the tip of an elephant's trunk, the posture of its ears and angle of its head to gain a window into its actively engaged mind. In the wild everything elephants do is an intellectual challenge:

locating and manipulating a wide variety of food items; discriminating between the individual scents, voices and appearances of hundreds of familiar and unfamiliar individuals, friends and foes, relatives and non-relatives, higher ranking and lower ranking competitors, friendly and unfriendly people and other animals; remembering the location of water during a drought; searching for potential mates; and deciding where to go, whom to go with, who to join and who to avoid (e.g., McComb et al., 2000; McComb et al., 2001; McComb et al., 2003; Bates et al., 2007a; Bates et al., 2007b; Mutinda et al., forthcoming).

A torrent of recent publications shows that elephants are self-aware (Plotnik et al., 2006), and that they exhibit a wide variety of complex cognitive behaviors. For example they are capable of: distinguishing between the many voices (McComb et al., 2000) and scents (Bates et al., 2007b) of their relatives and companions; making subtle discriminations between predators (Bates et al., 2007a); empathizing with others (Douglas-Hamilton et al., 2006); recognizing and responding to the bones of their own species (McComb et al., 2006); using and even manufacturing simple tools (Hart et al., 2001), social learning (Lee & Moss, 1999) and vocal imitation (Poole et al., 2005).

2. Elephant Reproductive Behavior

During the mid two to three days of estrus, females are guarded and mated by older musth males (Poole, 1989b) who are responsible for the vast majority of conceptions (Hollister-Smith et al., 2007). Owing to intense competition from older males (Poole, 1989a) and strong female preferences for mature, musth individuals (Moss, 1983; Poole, 1989b), young males have very limited reproductive opportunities. The acquisition of appropriate estrous and consort behavior requires a social context for learning (Poole & Moss, in press). Both the acquisition of estrous behaviors and the choice of mates appear to be facilitated by the presence and behavior of the mothers of these young females (Poole & Moss, in press). The birth of a female's first calf is another life event where the presence and behavior of experienced females aids inexperienced mothers. Experienced family members assist young females to cope with the physical demands of birth, including helping a newborn to its feet, with the immediate protection and socialization of the newborn calf (Moss, 1988; Lee and Moss, 1999; Poole, 1999b; Poole, personal observation), and plays an important role in passing on essential behaviors and knowledge from one generation to another (Lee & Moss, 1999; Hart et al., 2001).

Male reproductive success is strongly dependent upon longevity; older, larger males in musth are dominant and produce significantly more offspring (Poole, 1989a & b; Hollister et al., 2007). The peak breeding age is between 45-50 years old. To survive to an age when a male can breed successfully requires utilizing skills that he has learned and honed over decades. A male must learn to recognize a large number of individual males by their scent, appearance and voice; remember their strengths relative to his own; keep track of which individuals are in musth, where they are located and what condition they are in; and monitor the changing location of pre-estrous and estrous females. The social life of a wild male elephant is mentally and physically challenging.

Asian and African male elephants exhibit highly similar physical and behavioral characteristics of musth (Jainudeen et al., 1972; Poole, 1982; Poole & Moss, 1981; Poole, 1987; Sukumar, 2003). By age 30 most males have experienced their first heightened period of sexual and

aggressive activity, or musth (Poole & Moss, 1981; Hall Martin and Van der Wilt, 1984; Jainudeen et al., 1972). The physical and behavioral characteristics of musth exhibited by African and Asian bull elephants are similar in all aspects studied (Sukumar, 2003). Characterized by a distinct posture, swollen and secreting temporal glands, the dribbling of strong smelling urine (Poole & Moss, 1981; Poole, 1987; Jainudeen et al., 1972), and distinctive vocalizations (Poole 1987, 1999a; Poole et al., 1988), musth males experience impressive surges of circulating testosterone (Hall-Martin & Van der Walt, 1984; Poole et al., 1984; Sukumar, 2003; Lincoln, 1996). With the onset of musth, a male's behavior goes through a Dr. Jekyll and Mr. Hyde transformation. A male in musth spends the majority of his time interacting aggressively with other large adult males and enthusiastically searching for receptive females, attempting to gain access to, or guard those in peak estrous (Poole, 1987, 1989a, b; Poole & Moss, 1989; Figure 2). Highly active, musth males may move in pursuit of another male or in search of mates over many kilometers in the space of a few hours. Musth has a pivotal affect on the relative dominance ranks of males (Poole, 1989a); with few exceptions, musth males, whether large or small, rank above non-musth males. The duration of musth is age-related and may be dramatically influenced by the presence or absence of higher-ranking males (Poole, 1989a; Slotow, 2000). In populations without older individuals (Slotow et al., 2000), or in captive situations (Sukumar, 2003), musth starts at a younger age and periods last longer, sometimes up to a year. Traditionally captive Asian bulls may be denied proper feed in order to shorten their musth (Gale, 1974; Sukumar, 2003). Life in captivity for a musth male is tortuous. Chained, restrained, held alone in small enclosures, his sexual drive is not realised and his enormous physical energy and interactive needs have no outlet.

The median age of first birth in the wild is 14.1 years old (range 8.9-21.6; Moss, 2001). Female elephants come into estrus for two to six days (Moss, 1983; Poole, 1989c; Sukumar, 2003). In Amboseli, females come into estrus approximately once every 4.5 years (Moss, 2001). The estrous cycle of Asian and African elephants is 14-16 weeks (Plotka et al., 1988). The average age of sexual maturity varies in wild Asian and African populations from 11-14 years of age (Sukumar, 2003).

3. Elephant Ecology

In the wild elephants are rarely still; some portion of their body, legs, ears, eyes, trunk, or tail, is always in motion. Despite their great size, elephants are vigorous animals, perpetually active in mind and body. Apart from the two to four hours of a 24-hour day when wild elephants may stand or lie down to sleep, they are searching over large areas for food, water, companions and mates, or they are actively engaged in preparing a food item for ingestion, interacting with a conspecific or another species, or occupied in some frivolity. Their movements may be deceptively slow, allometrically befitting of such an enormous animal, but even when their bodies are at rest, their minds are active.

Free-living Asian and African elephants are on the move 20 out of every 24 hours, actively engaged in foraging, exploring, socializing and searching for conspecifics. Activity patterns of wild elephants vary depending upon the age, sex, reproductive state and population of an individual. In Amboseli, elephants spend somewhere between 35-55% of daylight hours feeding

(low: musth males; high: non-musth males), 5-15% walking while feeding (high: elephants in family groups), 20-45% walking (high: males in musth), 3-25% interacting (low: non-musth sexually inactive males; high: musth males), 5-15% resting (high: sexually inactive males), 1-5% standing, 1-3% comfort activities, and <1% drinking. While adults usually rest standing during the day, they frequently sleep lying down for a couple of hours at night.

Elephants continue to grow throughout most of their lives due to delayed epiphyseal fusion of the long bones (Haynes, 1991). Owing to their large size, indeterminate growth, life-long reproductive activity and digestive system specialized for rapid throughput of course vegetation, elephants are adapted to a lifetime of foraging (Lindsay, 1994). Elephants only use approximately 47% of the nutrient content they consume. Each day an adult eats 150-350 kg, or 4-6% of their body weight, and drinks 160 liters of water and forages for up to 60% of every 24 hours.

Effective foraging is achieved through constant movement, including seasonal migrations, daily movement through a variety of habitats, walking from one food item to another, as well as the coordinated movement of feet, tusks and dexterous trunk to select individual items of fruit, tug up tufts of grass, open heart of palm, flatten the hard thorns of an acacia branch or strip bark off trees. The physical activity and mental stimulation involved in the search for food items (walking, reaching and smelling with the trunk), their manipulation (digging, kicking, stabilizing with the feet; prying, digging, levering and breaking with the tusks; pulling, ripping, breaking, defoliating, cleaning with the trunk), their ingestion (trunk and tongue) and mastication constitutes the very core of an elephant's interest and survival.

Modern elephants exist across a broad range of habitat types from deserts to swamps, lowland rainforests, gallery and montane forests, upland moors, floodplains, savannas, and woodland. Ranging from sea level to as high as 4,875 m (Grimshaw et al., 1995), elephants can survive extreme temperatures for short periods, yet they thrive between 15–35°C, typically seeking shade or water above 30°C.

Across these habitats the home ranges of individual male and family groups vary tremendously, from close to 100 to ~11,000 km^2. In Kruger N.P., South Africa, for example, the ranges of adult females vary in size from 86-2,776 km^2, with a mean of 880 km^2 (Whyte, 2001b). In Northern Botswana home range size averages 1,091 km^2, varying from 447-3,309 km^2 with some groups travelling up to 200 km in search of dry season water (Verlinden & Gavor, 1998). In the semi-arid savannah of the Samburu-Laikipia region of Kenya, elephant ranges vary from 102-5,527km^2 (Thouless, 1996), while in the more arid environments of Namibia, ranges may vary between 2,136-10,738 km^2, with a mean of 5,860km^2 (Lindeque & Lindeque, 1991). Asian elephants, a typically forest dwelling species, and African forest elephants generally have smaller home ranges than African savannah elephants. The home ranges of Asian elephants vary between 34-800 km^2 for females (Sukumar, 2003) and 200-235 km^2 for males (Sukumar, 2003), though some home ranges appear to cover thousands of square kilometers (Sukumar, 2003). Elephant family groups are known to have a high fidelity to their home ranges (Vidya and Sukumar, 2005). Elephants living in harsh desert conditions characteristically have the largest home ranges. In the best-studied desert population in northwest Namibia, elephants survive seasonally scarce water and forage by moving over vast areas of up to 12,600km^2 (Leggett,

2005a; Leggett et al., 2003; Lindeque and Lindeque, 1991; Viljoen, 1987; 1989; Viljoen and Bothma, 1990).

To a large extent the variation in home range can be explained by habitat type, though home range also varies considerably within populations and individual preference, tradition, inter-family relationships and sex, all play a role in determining home range size (AERP unpubl.). Despite the fact that the elephant's energetic cost of walking is the lowest recorded for any living land animal (per gram of tissue 1/40 the rate of a mouse; Langman et al., 1995), elephants still behave in ways to conserve energy (Wall et al., 2006). Consequently, smaller home ranges generally reflect higher habitat quality and *vice versa*. Nevertheless, as discussed more fully below, it is a fallacy to suggest (as some have) that since Ringling Brothers provides sufficient food for their elephants, they do not need the opportunity to roam, explore their surroundings, and have some choice in the food they consume.

4. Elephant Socialization and Behavior

The social organization of Asian elephants has been studied in less detail than among African elephants, but observations show that like African elephants they can be categorised into families, bond groups and clans (McKay, 1973; Kurt, 1974; Sukumar, 2003; Vidya and Sukumar, 2005). Where wild Asian and African elephants have been closely studied, they live in complex societies where mothers and daughters and granddaughters, sisters and female cousins retain close relationships for life (Vidya & Sukumar, 2005; Moss, 1988). Mothers and daughters are rarely apart. Elephant relationships radiate out from the mother-offspring bond through family (or "family unit"), bond group, clan, sub-population, independent adult males and even beyond the population to strangers (Moss, 1988; Payne, 2003). The following diagram from Sukumar, 2003 helps illustrate these relationships using an example of a family that has been among the elephants I have focused on in my communication study at Amboseli National Park.

A family is defined as one or more adult females and their calves who exhibit a high frequency of association over time, who act in a coordinated manner and exhibit affiliative behavior, or positive and friendly gestures, toward one another (Moss and Poole, 1983). This term does not exclude two or more adult females without offspring, or a single adult female and one or more juveniles who are not her immediate offspring, making up a family. A bond group is two or more family units who associate with one another at high frequency relative to their associations with other family units in the population and whose members display affiliative behavior towards one another (Moss and Poole, 1983).

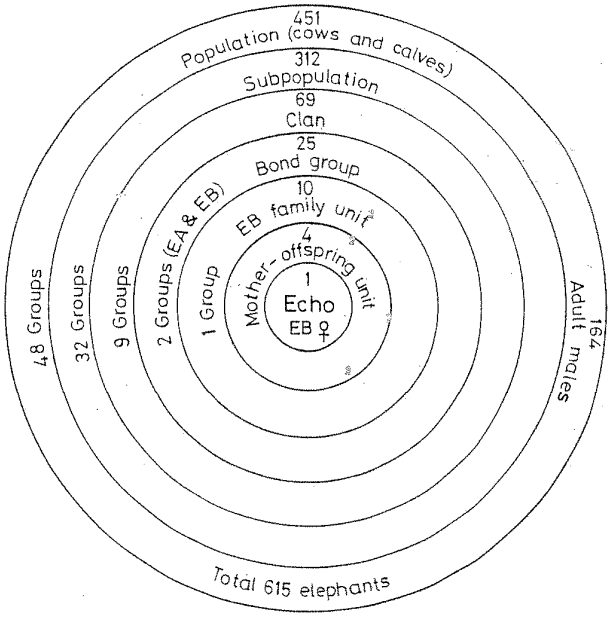

Figure 4.20
Levels of social organization in African elephants at Amboseli, Kenya, depicted through a multitier network of relationships for the adult female Echo. (From Moss and Poole 1983. Reproduced with the permission of Blackwell Publishers Ltd., U.K.)

Over the course of hours or days, family groupings may temporarily separate and reunite, or they may mingle with other social groups to form larger social units or aggregations. Such groupings may be predicated on close social bonds, home range and season (Douglas-Hamilton, 1972; Moss and Poole, 1983; Sukumar, 2003; Wittemyer et al., 2005; Archie et al., 2005; Moss & Lee, forthcoming).

The combination of social qualities observed in elephants – close and lasting cooperative social relationships, and fission-fusion sociality – exists in only a small number of cooperatively hunting carnivores (e.g., hyenas, lions, and sperm whales) and also a few primates (e.g., chimpanzees and humans; Archie et al., 2005). In reference to elephants, the term fission-fusion sociality refers to both the slow changes in the structure of families or bond groups that occur over the course of years or decades, as well as the very rapid changes that occur in social group composition over the course of hours (Moss & Lee, forthcoming; Figure 3).

Within this social arena, the lives of adult female and male elephants differ radically (Poole, 1994). An intricate network of bonds between individuals and families typifies the lives of females and their offspring, while fluctuating sexual states distinguish the dynamic activities, associations and relationships of adult males (Moss and Poole, 1983). In other words, female elephants remain with their families for life, while male elephants leave their natal families around puberty, at which point they enter the socio-sexual world of adult males.

The cohesiveness of families varies depending upon factors such as habitat type, season, relatedness, personality traits, tradition, deaths of influential members, and the strength of the

matriarch's leadership (Moss & Lee, forthcoming). In general, elephant families are smaller in forest habitats and larger in mixed savannah habitats. Over time, families may split to form bond groups (Douglas-Hamilton, 1972; Moss and Poole, 1983; Wittemyer et al., 2005) or, sometimes, fuse to form new families (Moss & Lee, forthcoming).

Members of a family and bond group may be distinguished by long-term association patterns, greeting behavior, coordinated movement, strong affiliative and protective behavior toward one another and cooperative anti-predator behavior, resource acquisition, offspring care, and decision-making (Douglas-Hamilton, 1972; Dublin, 1983; Moss and Poole, 1983; Lee, 1987; Moss, 1988; Poole, 1998; Payne, 2003). Individuals, who through chance demographic events have no close relatives within their family, still benefit from the same cooperative behavior (Archie et al., 2005). Interactions between members of a family or bond group are generally highly cooperative and even those between non-relatives are seldom unfriendly. The relative level of agonistic versus affiliative behavior, however, varies from one population to the next depending upon the availability of resources. In areas where water, minerals or high quality food are limited or unevenly distributed, agonistic behavior in elephants is more common (Poole, personal observation). The close and lasting social relationships formed by female elephants are remarkable in the context of their fluid social system (Archie et al., 2005).

Young male elephants grow up in the tightly bonded society of females, maintaining close relationships with their relatives and participating in social events affecting their family, albeit at a lower intensity than their female age-mates (Lee & Moss, 1999; Poole, forthcoming). By age nine they begin to spend time away from their families and by around 14 years old they have usually departed (Lee & Moss, 1999; Vidya & Sukumar, 2005). Newly independent males must acquire fresh skills to adapt to the society of males where body size and fluctuating sexual state determine interactions and relationships (Poole, 1989a). This transition happens over a period of years (Lee et al., forthcoming) during which young males' social activities center around getting to know age-mates, and sparring and playing with novel partners from outside the natal family (Lee, 1986). In this way males gather information crucial to longevity and reproductive success (Poole, 1989a, 1989b; Poole et al., forthcoming; Lee et al., forthcoming). Adult male interactions fluctuate between periods of sexual activity and inactivity (Poole, 1982, 1987, 1989b). Among sexually inactive males relationships are "courteous", while interactions between sexually active males, particularly between those in the heightened sexual period of musth, become combative and highly aggressive (Poole, 1982, 1987).

The social relationships of elephants are particularly complex because individuals interact with many elephants from different social units across a population, and cooperative social partners may not always be together in the same group. Members of the same family are often many kilometers apart and much of a female elephant's daily activity may be focused on approaching close associates or circumventing individuals they wish to avoid (Douglas-Hamilton et al, 2005; Charif et al., 2005). This pattern of attraction and evasion can be clearly seen from the patterns of simultaneously radio-tracked individuals (Douglas-Hamilton et al., 2005; Charif et al., 2005).

The social complexity hypothesis posits that intelligence has evolved to allow individuals to cope with the changing and often difficult to predict behavior of partners within the fission-fusion society with whom they must cooperate and compete. Like other species that live in

fission-fusion societies (e.g. human beings, chimpanzees, social carnivores, whales) and as mentioned above, elephants are recognized for their intelligence.

Although the Amboseli elephant population is relatively small (numbering 1,517 at the end of 2006) compared to many elephant populations, it is, nevertheless, a big society. A female elephant in Amboseli may seek the company and/or purposefully encounter literally hundreds of other individuals in the course of her daily range (Poole & Moss, in press). Searching from group to group for receptive females, sexually active males may also interact with hundreds of different individuals, both male and female, in the course of a 24-hour day (Poole & Moss, 1989). The sheer number of elephants involved in an individual's social network, and the hierarchical character of the formation and dissolution of aggregations make elephants remarkable. The ability of elephants to distinguish genuine strangers from a wide range of more regular associates through recognition of voices (McComb, 2000) and scents (Bates et al., 2007b) may in part explain the extremely large and convoluted temporal lobes of the elephant's brain (Shoshani, 1998, 2006).

Social learning and behavioral innovation are essential elements of individual development and are the very fabric of elephant society, tradition and culture (Lee & Moss, 1999; Poole & Moss, in press). Many of the techniques used by wild elephants to locate, select and extract food must be learned, either through experience or by watching others, and social learning plays a critical role in calves' acquisition of foraging knowledge and techniques of manipulating food items (Lee & Moss, 1999; Hart et al., 2001). Social learning via allo-mothering (assisting a mother with care of a calf) provides young females with an array of care-taking experiences and skills that persist until they give birth to their own first calf. This transfer of social knowledge is vital for successful mothering behavior (Figure 4). For example, first-born infants still have higher mortality rates than infants born to experienced mothers (Moss, 1994, 2000), indicating that even by the age of first parturition (14-15 years) female elephants still have much to learn about mothering. The calves of inexperienced mothers show higher levels of distress than do calves born to experienced mothers, who appear to be more responsive to calf demands for food and protection, with obvious consequences for calf growth and survival (Lee & Moss, 1999). Distinguishing between friends and foes, learning where to go to find water during droughts, and where to find particular food items or minerals is learned from others and through experience and is passed on from mother to daughter (McComb et al., 2003). Interaction with other elephants and the transmission of social and ecological knowledge is a key to an elephant's survival (McComb et al., 2003), and the motivation it demands is necessary for an elephant to thrive.

Young male elephants, too, benefit from social learning and are often observed to follow older musth males, testing the same urine spots and the same females as they do (Poole & Moss, in press). Musth males are extremely tolerant of these youngsters, allowing them to stand less than a meter from an estrous female while older males are kept at long distances (Poole, 1982). Successful mounting and intromission requires considerable skill and experience which may, in part, be gained by watching the behavior of older, more experienced males. Experience from southern Africa also highlights the importance of social learning in the acquisition of appropriate male reproductive behavior (Slotow et al., 2000). Juvenile male elephants that experienced their families killed in a culling operation and were then introduced to areas without adult role models

exhibited abnormal reproductive behavior as young adults, including the mounting, tusking and killing of black rhinos. It is likely that the absence of adult male role models contributed to the inappropriate sexual reaction of these young males (Slotow et al., 2000).

Over millions of years as large-bodied animals the elephants have evolved a range of specialized physical and behavioral adaptations to allow them to cover long distances so as to meet their ecological, social and reproductive requirements. In other words, elephants are *adapted* for "long-distance living," just as polar bears are adapted for arctic climates. To defend themselves and their offspring from large carnivores and human hunters, elephants evolved a tight-knit, highly cooperative society and elaborate defense behaviors. Because they have evolved in this manner, elephants must have the opportunity to engage in these behaviors to be physically and behaviorally sound.

The evolution of a number of specialized traits has allowed elephants to adapt to a life where close companions and potential mates may be separated by many kilometers. Elephants have the ability to produce and receive acoustic and seismic signals (through a very large tympanic membrane) allowing the high signal-to-noise ratios so important at very low frequencies (Nummela, 1995); massive ossicles assist in receiving acoustic information through bodily vibrations (Reuter & Nummela, 1998); and a reptilian-like cochlear structure (Fischer, 1990) facilitates a keen sensitivity to vibrations (O'Connell et al., 1998). Via acoustic signals elephants can recognize the individual voices of other elephants at distances of up to 2 km (McComb et al., 2003). Detection of the calls of conspecifics has been estimated to vary from 2.2 km during daytime to 9.9 km at night (or over an area of 15-300 km^2) depending upon atmospheric condition (Garstang, 1994). And, when an elephant vocalizes with a low frequency rumble an exact replica of this signal propagates separately through the ground, and elephants respond to this signal component (O'Connell et al., 1998; O'Connell et al., 2005; O'Connell et al., 2007).

The fluid nature of elephant society in which closely bonded individuals may be many kilometers apart has enabled the evolution of a complex communication system combining multifaceted short and long-distance signaling. A combination of trunk, ear, limb and body postures and movements signal a broad range of agonistic, defensive and affiliative gestures and complex emotional responses (Kahl, 2000; Poole & Granli, 2003; Poole & Granli, 2004; Poole & Granli, forthcoming). Chemical signals including saliva, mucus secretions from the eyes, fluids from the ano-genital tracts, temporal glands, ears and interdigital glands, also play an essential role in elephant social and reproductive communication (Rassmussen et al., 1996; Rassmussen & Schmidt, 1998; Rassmussen & Krishnamurthy, 2000; Rassmussen & Wittemyer, 2002). Elephant acoustic communication includes a broad variety of sounds (with components ranging from 5Hz to over 9,000Hz; Poole, forthcoming). Calls include very low frequency rumbles and higher frequency trumpets, snorts, roars, screams, barks, cries, chirps, croaking and other idiosyncratic sounds (McKay, 1973; Berg, 1983; Poole et al., 1988; Poole, 1994; Langbauer, 2000; Soltis et al., 2005 a & b; Leong et al., 2003; Stoeger-Horwath et al., 2007; Stoeger-Horwath et al., in review; Poole, forthcoming).

Elephants use acoustic signals to communicate complex messages of agonistic, defensive, affiliative, parental care, mating, and social natures. Elephants are able to coordinate their movements by communicating with powerful, very low frequency sounds (Payne et al., 1986; Poole et al., 1988; Langbauer et al., 1991; Garstang et al., 1995; Larom et al., 1997; McComb et

al., 2000). The acoustic repertoire of elephants is complex: their calls are graded carrying information about individual identity (McComb et al., 2003), emotion (Soltis et al., 2005 b), and context (Poole, forthcoming). They are able to combine different call types to utter more complex calls (Stoeger-Horwath et al., in review) and they are capable of imitating or learning new vocalizations (Poole et al., 2005). Poole et al. (2005) posit that this rare talent may have evolved to facilitate social bonding and cohesion in the elephants' highly dynamic fission-fusion society. Social learning thus plays a role in acoustic acquisition, too (Wemmer & Mishra, 1982, 1985; Poole et al., 2005). Imitation and the recombination of acoustic units into larger utterances are the building blocks of human language.

B. Opinions Regarding the Use of Bullhooks and Other Instruments on Elephants

1. Overview

As previously noted, elephants have long been trained by humans with the use of the ankus or bullhook (Hart & Sundar, 2000). The bullhook is a long stick with two metal hooks on one end, which looks like a fireplace poker. Frequently, the handle is composed of fiberglass or wood. Pictures of bullhooks that were inspected at Ringling Brothers' CEC can be seen in Figure 6. Elephant trainers and handlers also use electric prods or "hot shots" and whips, and any other available implements such as pliers or brooms. The electric prods and whip that were presented for inspection at the CEC are also depicted in Figure 6.

The use of bullhooks and these other tools on elephants has several negative consequences for these animals. Such instruments leave physical wounds and bruises, particularly in sensitive areas, and cause psychological wounds as well. More importantly these tools are specifically designed and/or used for the primary purpose of modifying the elephant's natural behavior and, therefore, harm elephants and harass them in several ways (see e.g. Appendix E).

The reason these tools are used is to keep the elephants under a very strict regime (see Appendix E) and to coerce the elephants to perform what are, in my opinion, tricks that bear no resemblance to behaviors in the wild. For example, video footage of performances and practice taken by Ringling Brothers show the elephants: riding a bicycle, walking on a rolling drum, walking around with one foot on a turning spindle, skipping, and doing headstands (e.g. video footage from Ringling Brothers marked as Redacted , FEI 10353, FEI 0022, FEI 00024, FEI 0023 and FEI 3241). Many of the tricks require the elephants to engage in difficult manoeuvres that one would not witness in the wild. For example, while male elephants mount females for mating purposes, females do not mount one another.

A number of these acts could cause injury or create unnecessary discomfort to the elephants. This is what happened to one of Ringling Brothers' calves named Riccardo who broke his legs when he fell off a platform Redacted . None of the tricks that I observed convey any form of useful education or conservation-related information to the public. For instance, Ringling Brothers' performances do not convey information about an elephant's natural behavior – e.g. how it eats, what it eats, how it drinks, how it interacts with other elephants, the range of relationships it forms, or how it uses its extraordinary sense of smell to make sense of its complex world, to name some very basic information that is not conveyed. In fact the reverse is

the case: the tricks performed by elephants in Ringling Brothers' performances represent *misinformation* about the behavior of elephants. Elephants do not hold each others' tails when they walk; they do not ride bicycles; they do not turn about on an elevated platform while climbing on the back of another moving elephant; they do not mount one another in a long line; they do not perform headstands and so on. Furthermore, we learn nothing of how endangered wild Asian elephants are, what has caused them to become so endangered or how we, the public, could make a difference to their future.

The evidence that has been presented to me primarily shows the use of bullhooks to keep elephants under very strict command. Ringling Brothers' employees routinely use bullhooks, and other instruments such as whips and leatherman-like pliers to beat, grab, jab, strike, poke, pull, yank and pinch Asian elephants, including baby and juvenile elephants (see Appendices C, D and E). In Ringling Brothers' terminology, the bullhook is used as a "guide". The term "guide" – to direct, show, steer – implies a gentle leading of the elephant. It is an unfortunate use of the term because the so-called "guiding" of the elephants that Ringling Brothers' employees engage in is typically rough and abusive and includes jabbing, prodding, poking, and hooking, and in my opinion causes wounding, harming and severe harassment of the elephants. There is also evidence that Ringling Brothers' employees use electric prods and whips, which also wound, harm, and harass the elephants.

One of the pieces of evidence that I reviewed is a DVD entitled, "Video Compilation of Ringling Brothers' Circus: Clips of video footage of elephants from 1987-2004". As its title indicates, this DVD contains excerpts of video footage that demonstrate Ringling Brothers' employees' treatment of elephants. I went through this video footage in detail to document the circumstances under which different types of hooking, poking and jabbing occurred (see Appendix E). I found this exercise illuminating.

In part, the results of this exercise helped explain differences in the answers given by various witnesses in the case about the use of the bullhook. In several of the depositions, the witnesses were asked to describe when, under what circumstances, on what part of the body elephants have been poked or hit with a bullhook or ankus. Some of the witnesses said that it was impossible to say when or where or how often these abuses occurred because they were so numerous (e.g., Tom Rider Original Interrogatory Responses at 43-48; Deposition of Tom Rider (2006); Redacted Some of the witnesses for the defendant, on the other hand, claimed that their occurrence was extremely rare and that they had only witnessed the hitting of elephants, or engaged in it themselves a couple of times (e.g., Deposition of Troy Metzler; Deposition of Alex Vargas).

Based on the DVD compilation and my own detailed counting of the number of jabs, hooks, and pokes, where on the body they occurred and under what circumstances they occurred, the disparity in the answers given by various witnesses in the case is clearly semantic. From the DVD I made a number of observations:

> During the first few years of the footage, Ringling Brothers' employees used more force and were more overt in the hitting, poking, hooking, and jabbing of elephants.
>
> As time went on, Ringling Brothers' employees had obviously been told not to be caught on camera hitting the elephants. They began to look to see whether anyone was watching

before hitting or poking an elephant (e.g. see sequences nos. 29-35) and they began to use more surreptitious techniques, blocking the view with their bodies, using bullhooks with darkened handles or using other instruments (e.g. the use of a leatherman pliers).

Ringling Brothers prefers to use the term "guide" when referring to what has been traditionally known as an ankus or bullhook. The reason for the change in terminology is that a bullhook sounds malignant, whereas a guide sounds benign. The gentleness of guiding, however, can quickly be turned on its head when one looks closely at what Ringling means by the term "guide".

2. Wounding of elephants

In my opinion, the use of the bullhook physically wounds the elephants. The bullhook is traditionally used on sensitive areas of the body. Sikes (1971) states, "Tactile sensory endings occur in the skin of the whole body but are more concentrated in some areas than others." Sikes (1971) includes a figure taken from Deraniyagala (1955) showing these sensory points and comments that mahouts traditionally utilized them for "elephant control." This figure is reproduced as Figure 5 below.

The points are among the same areas used by Ringling employees in the video footage I have reviewed (e.g. see Appendices D and E) and as described in the records and testimony of several witnesses. For instance, these points include the trunk, ears and behind the legs, e.g. (1.) FEI 15024 (E-mail from Deborah Fahrenbruck in which she writes: "Last night I observed him [Isham] hook Lutzi under the trunk three times and behind the leg once in an attempt to line her up for the T-mount. After the act I stopped backstage and observed blood in small pools and dripped along the length of the rubber and all the way inside the barn"); (2.) FEI 16615 (E-mail from Heather Riggs in which she writes: "list of injuries (that I was able to see without approaching and without help of handler)" includes several references to "lacerations" on the elephants and the presence of blood); (3.) PL 5118 (Inspection Report from Christine Franco, in which she writes we were "escorted into the elephant tent, Reeve [a Humane agent] observed what appeared to be blood behind the left ear of the elephant named Toby. I inspected the site as well and also saw blood streaming from two separate lacerations behind Toby's left ear. . . Seven of the elephants had injuries behind or on the back of their left ears. Some of the elephants had scars behind their left ears. Almost all of the injuries appeared to be fresh with bright red blood present at the wound sites"). Ringling Brothers' elephant trainers and handlers also admit to using the bullhook on these points, including under the chin, on the trunk, on the foot (e.g. Deposition of Troy Metzler, 344-50; Deposition of Robert Ridley, 55-56, 92-95), and behind the ear (e.g., Deposition of Alex Vargas, 126-28, 132-33), as does the owner of the corporation (e.g., Deposition of Kenneth Feld, 96-103).

In some instances, Ringling Brothers employees have stabbed elephants inside their mouths (e.g. see Appendix E). Redacted

In my opinion, and as noted above, as well as in numerous other cases in the evidence, and as I observed during my inspection of elephants at the CEC (see Appendix C), the use of the bullhook physically wounds the elephants. The evidence shows that the bullhook and other instruments may be used behind the ears where the skin is paper thin (Poole, 1997), around the eyes where the skin is also very thin, and on the feet, trunk and around the mouth which are highly enervated (Rasmussen & Munger, 1996; Weissengruber et al., 2006). These areas are all extremely sensitive to the touch. The tip of an elephant's trunk has layers of cells called Pacinian corpuscles that are extremely sensitive to vibrations (Rasmussen & Munger, 1996) and it has been suggested that perhaps these cells may also occur in the fleshy pads of an elephant's feet (Sikes, 1971). Movements or vibrations deform the layers of Pacinian corpuscles, sending a nerve signal to the brain. Although these corpuscles are found in other mammals, too, (such as in the lips of primates) they are particularly densely packed in the tip of an elephant's trunk. The very hairy lips of elephants are a good indication of the sensitivity of an elephant's mouth and chin. Based on the evidence that I have seen, the bullhook is used on elephants at Ringling Brothers in this manner and wounds the animals and physically harms and injures them.

The bullhooks that I examined at the CEC during the inspection were extremely sharp – such that hanging the hook on the palm of my hand was uncomfortable; and any force would have ruptured the skin (Appendix C; Figure 6). The use of these sharp instruments to strike, hook, jab, or even "bop" (e.g., Deposition of Metzler, 342-43, 347-48, 368), an elephant behind its ears, on or under its trunk, under its chin, on its legs, its head, in its mouth (see, e.g., Appendices D and E) to induce it, or force it, to comply with a command, or "guide" an elephant, would certainly cause an elephant physical discomfort, pain, injury, and also inflict a physical wound.

We also inspected several electric prods and a whip during the inspection at the CEC (Appendix C). Evidence regarding these tools reveals that they are used in a similar manner to the bullhook (e.g. FEI 15024; FEI 38277; Redacted and also can inflict physical wounds on the elephants.

In my opinion and based on deposition testimony, medical records and veterinary evidence, records from the circus, and video footage that I have reviewed the use of the bullhook and other tools by Ringling Brothers' employees physically wounds elephants. Due to the particularly intelligent and emotional constitution of elephants, such use of the bullhook and other instruments also makes them more vulnerable to psychological wounding. As described above, elephants are keen social learners. In other words, much of elephant behavior is not instinctive but learned from watching or listening to others (Lee & Moss, 1999; McComb et al., 2003; Poole et al., 2005; Hart et al., 2001; Wemmer & Mishra, 1982, 1985; Poole & Moss, in press). Such learning is a vital component of an elephant's daily life. Elephants, too, are capable of empathizing with others (Douglas-Hamilton et al., 2006; Poole & Moss, in press) and have even been observed to wince when a companion reaches its trunk out toward an electric wire (Poole & Granli, personal observation).

An example of this sort of empathetic behavior was observed when Karen rattled her chains in response to Benjamin being beaten (Tom Rider USDA affidavit, in "May 1998 in New Haven,

CT - Pat Harned was beating a young elephant named 'Benjamin' because he was messing with the other elephant 'Shirley'. Another elephant named 'Karen' started making noise (rattling her chain) because Benjamin was getting hit – Pat [Harned] came over and beat **'**Karen**'** for 23 minutes because she would not stop making noise."). These two capacities, social learning and empathy, mean that when an elephant is beaten, grabbed, jabbed, poked, bopped, or pulled with a bullhook, this action has negative psychological consequences both for the individual elephant receiving the negative treatment and also for nearby elephants. In other words, the routine use of the bullhook psychologically wounds an elephant whether or not she or he is being hit.

3. Harming of elephants

The FWS has defined "harm" as an "action that actually kills or injures wildlife" and significantly impairs essential behavior patterns, including breeding, feeding, and socializing.

There are certainly instances in which the action of Ringling Brothers' employees has resulted in the death or injury of elephants through the use of the bullhook (e.g., the case in which a USDA investigator found that handler Pat Harned's use of the bullhook on baby elephant Benjamin in July 1999 "created behavioral stress and trauma which precipitated in the physical harm and ultimate death of the animal;" USDA Report of Investigation TX99237-AC, PL 10051). Since elephants are acknowledged as the best natural swimmers of any land mammal, and they swim without assistance as infants, even suckling underwater, with their trunks held up like a snorkel (Moss, personal communication), after viewing the DVD of the episode (FEI 6356) and the investigator's report (PL 10051), I have no reason to doubt that Mr. Harned's alleged actions with the bullhook were responsible for contributing to Benjamin's death.

The use of the bullhook on the elephant named Angelica that was captured on videotape on two occasions in 2004 also shows the harm to the elephants from the bullhook. There the USDA concluded that a Ringling Brothers' employee "used physical abuse to handle and cause unnecessary discomfort" to Angelica (PL 11716-724). I have no doubt from the USDA's account of what happened that the elephant was in fact harmed by the conduct of the Ringling Brothers' employee.

In my opinion, the use of the bullhook also physically, behaviorally, psychologically and emotionally harms elephants. People who use bullhooks often claim that these instruments are only a "guide", however, in the wild, dominance between elephants is based on age-dependent body size (Poole, 1989a; Archie et al., 2006; Wittemyer et al., 2007). Thus older, larger animals rank above smaller younger animals. The only way a human being (approx. 1/60 the weight of an elephant) can rank above an adult elephant is either through fear, learned helplessness, the Stockholm Syndrome,[1] or in rare cases through respect based on companionship and trust. By

[1] Elephants, like most mammals who see no way to escape, may appear "happy" even in harsh living conditions. Such behavior is not evidence that their living conditions are acceptable, but is similar to the Stockholm Syndrome in which kidnap victims, over time, become sympathetic to their captors. Captives begin to identify with their captors initially as a defensive mechanism, out of fear of violence. Small acts of kindness by the captor are exaggerated, since finding perspective in a hostage situation is, by definition, impossible. These symptoms occur under

maintaining a state of fear-of-the-consequences and actually using physical force, whips, bullhooks and other instruments to ensure that an elephant will engage in activities that are not part of its natural behavior patterns (such as standing still in a line, moving rapidly down a steep incline (such as off a train), defecating on command, doing a headstand, walking on top of a rolling drum, riding a bicycle, etc., (e.g. Appendix D), Ringling Brothers elephants are harmed.

Being hooked, and even the fear of being hooked, however lightly, ensures that an elephant obeys commands or follows a "guide". In this process, however, the independent will, choice, autonomy and purpose that is so important to the life of an elephant (Poole & Granli, in press) is destroyed. The elephant's essential behavior patterns, including natural breeding, care of its own young, foraging, and normal larger and smaller activities typical of elephant behavior are impaired if not hindered entirely.

Elephants themselves are capable of strong and complex emotions including joy, grief, compassion and empathy (Poole, 2000 a & b; Moss, 2001; Poole, 1998; Poole & Moss, in press; Douglas-Hamilton, 2006; Bates et al., in prep). Elephants are also capable of suffering from physical and emotional pain (e.g. N. Njiraini, personal communication; Poole, 2000b). Therefore, to treat elephants in a manner that inflicts both physical suffering and psychological suffering causes these animals harm.

In my expert opinion, the use by Ringling Brothers' employees of bullhooks, whips, or other instruments to train, work, or otherwise handle their Asian elephants, invokes fear that also results in behavioral modifications. Such instruments are successful in "correcting" or "guiding" an elephant only because the animals have learned to be fearful of the consequences of not following instructions. The fearfulness is based on the experience of pain being inflicted.

The use of the bullhook has so altered the behavior of the elephants that many of them even show an impaired response to pain (Appendix D video footage considered). The reaction of many of the elephants to the constant jabs is one of remarkable stupor. In other words, these elephants show a marked unresponsiveness to the stimuli and appear to be in a condition in which sense or feeling is suspended or greatly diminished. Since wild elephants would respond more dramatically to a significantly lower level of stimuli, my conclusion is that the constant abuse has led to both a pathological psychological state or learned helplessness, which are indicative of both physical and psychological harm to the elephants.

4. Harassing of elephants

In my expert opinion, the use of bullhooks, whips or other instruments on elephants causes behavioral stress and results in harassment of the elephants. Elephants are animals that are naturally in continuous motion (Poole & Granli, in press). In the wild, elephants are rarely still; some segment of their bodies, whether legs, ears, eyes, trunk or tail, is in motion. They are

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tremendous emotional and often physical duress and represent a common survival strategy for victims of interpersonal abuse, including battered spouses, abused children, prisoners of war, and concentration camp survivors. I believe that the elephant response is no different.

vigorous animals, perpetually active in mind and body (McComb et al., 2000; McComb et al., 2001; McComb et al., 2003; Bates et al., 2007a; Bates et al., 2007b; Mutinda et al., forthcoming). As noted, everything an elephant does is an intellectual challenge: locating and manipulating a wide variety of food items; discriminating between the individual scents, voices and appearances of familiar and unfamiliar individuals, including friends and foes, relatives and non-relatives, higher ranking and lower ranking competitors, friendly and unfriendly other species; remembering the location of water during a drought; searching for potential mates; deciding where to go, whom to go with, who to join and who to avoid.

In the circus, elephants are required to be still for a great deal of time, unless they are specifically asked to do something. It is this required stillness and need to be immediately obedient, and the training necessary to obtain it, that is the cause of so much suffering for elephants in circuses. A close look at the use of bullhooks on the Ringling Brothers elephants reveals perpetual "guiding" (poking, jabbing, prodding, hooking) – guiding to hold still; guiding to get back in position and then to hold still again; guiding to move faster, guiding to slow down, guiding to put the trunk up, guiding to put the trunk down, guiding to lift the leg, guiding to lower the head. In many of these instances (noted in Appendix E; Appendix D) there is a purpose – to get the elephant to do something, or to get the elephant to stop doing something. But in many other instances the so-called "guiding" appears to have no purpose whatsoever (e.g. Appendix E; Appendix D). The video evidence is extraordinary to the extent it shows Ringling Brothers' employees routinely mindlessly prodding, poking and jabbing at the elephants (e.g. Appendix E including the footage of the elephants Mexico and in San Francisco in 2000; Appendix D video footage considered). Much of the poking, jabbing and prodding occurs when employees do not appear to be trying to get the elephants to "do" anything. In other words, the poking and jabbing appears to me to be pointless harassment done solely to remind the elephants that the human handler is dominant.

It also appears that the employees do not want the elephants to move unless asked to do so. The elephants' efforts at feeding, reaching out with the trunk to interact with another elephant, reaching out with the trunk to investigate a smell, and stepping forward or backward are all routinely halted (e.g. Appendix D video footage considered; I also observed this repeatedly at the CEC during the bathing of the elephants, prior to the inspection and during the inspection of the elephants). Whether the handlers' intentions are just plain mean or whether they harass the elephants simply to remind then that the handler is dominant is not clear. In my opinion all of these instances constitute harassment of the elephants because the handlers are interrupting, through their use of the bullhook, the very essence of normal elephant behavior.

Based on affidavits and testimony from Ringling employees, this interpretation seems correct (e.g. Deposition of Tom Rider; Redacted If so, it constitutes extreme disturbance to the elephants' natural behavior by creating a situation in which the elephants cannot behave in the way they have evolved to behave, i.e., by being in constant motion, (Poole & Granli, in press) and by investigating the sights and smells around them (see Poole & Granli, 2003). The elephants are forced to repress their natural behaviors and are also not permitted to relax.

When Tom Rider talked about the number of hits jabs and smacks with the bullhook being too numerous to count (Tom Rider Original Interrogatory Responses), he was talking about disciplinary or corrective beatings as well as the so-called "guiding" (e.g., Deposition of Tom

Rider (2006), 44-74; Tom Rider Original Interrogatory Responses). Ringling Brothers' employees' use of bullhooks as "guides" in the manner reflected by the evidence shows malevolence or ignorance, or both, and causes immense suffering to the animals. Whenever handlers or trainers are with the elephants they are using the bullhook to try to get the elephants to do or not do something. In almost all cases, that I saw the sharp point or hook of the bullhook was used.

Accordingly, Ringling Brothers' use of the bullhook causes psychological damage and constitutes harassment to the elephants to an extent that significantly disrupts normal behavioral patterns. These patterns go way beyond the disturbance to feeding, sheltering and breeding (which is impacted beyond recognition), to the very minute-to-minute possibility of interacting and relaxing. As an elephant sociobiologist I found this continual harassment of the elephants by Ringling Brothers to be among the most disturbing evidence that I reviewed.

Take for example video footage from San Francisco in 2000 in which the handlers are sweeping around the baby elephants (see e.g., Appendix E) continually pushing them, pointlessly, first one way and then another, going out of their way to aggressively pursue them, hooking them with a bullhook, pinching them with a leatherman, jabbing them with the end of a broomstick and threatening them with a raised bullhook. This abusive behavior by the handlers is so unnecessary but is typical of the handlers' conduct throughout the evidence I have reviewed. In my opinion such conduct constitutes excessive harassment.

While elephants in the wild may occasionally be tusked, poked or jabbed by another elephant, these interactions are rare (Poole, unpublished data) and carried out in contexts very different from those observed on the DVDs. In my many years of experience, elephants do not harass or continually pick on another elephant in the manner inflicted by Ringling Brothers employees. Moreover, if an elephant is tusked or poked by another elephant, she or he receives support from close associates, who gather around the victim communicating both vocally and through touch, thus softening the physical and psychological blows received from other elephants.

Reconciliation plays a critical role in elephant society and, within families, both perpetrator and victim are included in the conciliatory gestures (Poole & Granli, forthcoming). In the case of the Ringling Brothers elephants the individuals are repetitively prodded and jabbed, and have no recourse, no means of escape and no possibility for support from, and reconciliation with, other elephants.

Video footage of performances and rehearsals that I reviewed often shows calves performing or practicing (e.g., FEI 40988, 40976, 40979, 40959, 004, 0001, 0022, 40956, FEI 40981, FELD-VID 0004). What was immediately conspicuous to me was the lack of joy in these young elephants. Wild elephant calves are full of energy, and for lack of better words, a joyful silliness – to watch them go about their business is enormously entertaining and humorous. In contrast, the Ringling Brothers calves exhibit no *jeux de vivre*, they follow instructions like automatons, without the floppy movements of a normal calf at play (Poole & Granli, 2004) or even during normal daily activities. The same conclusion can be applied to the adult elephants who, as I have previously described, are remarkably life-less.

What I have learned generally about the treatment of elephants used by circuses and otherwise trained for entertainment (beyond the specific pieces of evidence I have reviewed) also supports

my conclusions. The acts these animals perform and how they are required to carry out their daily lives (e.g. by being forced to stand nearly still and not explore their surroundings) are so unnatural that bullhooks and other implements are required tools of the trade. These same tools leave wounds, bruises, and other injuries and are targeted to particular sensitive areas of the animal's bodies. The strict control that is maintained over the elephant from the use of these tools causes psychological harm and the elephants' most basic natural behaviors are modified causing harm and harassment to the elephants.

C. Opinions Regarding the Chaining and Confinement of the Elephants

1. Overview

Chaining and confinement of elephants for use in the circus have a number of negative consequences and result in the wounding, harming, and harassment of the elephants. In my opinion, the sedentary life of a circus elephant, exacerbated by prolonged chaining, causes all sorts of physical harm including arthritis and foot problems (e.g Schmidt, 2001; Clubb & Mason, 2002; Poole & Granli, in press). It is also the cause of psychological, behavioral and emotional problems. As I have previously described, much of an elephant's time budget per day in the wild is spent moving from place to place while feeding and socializing. These activities not only contribute to elephants' physical fitness, but they also result in mental fitness since elephants are constantly engaged with their physical surroundings and with one another. Without space to roam, foodstuffs to choose from, and freedom in their social interactions, an elephant cannot perform natural behaviors and the resulting impacts are quite detrimental.

Evidence that I have reviewed from the case shows that from the time a young elephant begins training for the circus (usually as very young calves; note that elephants are considered infant until one year of age, calves until five years of age, juveniles until 10 years of age), she or he is usually chained for large portions of every day (e.g., Doc and Angelica were chained at 18 months (FEI 817-18) and are still chained (Deposition of Gary Jacobson (2007), 154-55, 160)). The elephants are normally chained on at least two legs Redacted for many hours at a time (e.g., Tom Rider Original Interrogatory Response; PL 2081; Redacted ; Deposition of Gary Jacobson, 154-64).

The elephants used in performances, who travel with either the Blue Unit or the Red Unit, are on the road for a total of approximately 46 out of 52 weeks every year, (e.g., Redacted ; PL 13588; Redacted ; Deposition of Troy Metzler, 246; Deposition of Gary Jacobson (2008), 17-19) and travel to approximately 42-44 different cites each year Redacted by train. The seven elephants whom Mr. Rider knew when he worked at the circus – Karen, Nicole, Lutzi, Susan, Jewell, Mysore, and Zina – have spent many years travelling on the road with the Ringling Brothers' Circus. The elephant Karen has been with Ringling Brothers' circus since 1969 and is still touring with the Blue Unit (Deposition of Gary Jacobson (2008), 19-20; Deposition of Robert Ridley, 68). The elephant Nicole is also still travelling with the Blue Unit and has been with Ringling Brothers since 1980 (Deposition of Gary Jacobson (2008), 42). The remaining five elephants are now all at the CEC and have been with Ringling Brothers for

different periods of time. Lutzi, Susan, and Jewell since 1954 (Deposition of Gary Jacobson (2008), 63-64 (Lutzi went to Ringling Brothers in "1954"); Deposition of Gary Jacobson (2008), 77-80 (Ringling Brothers got Susan in 1954); Deposition of Gary Jacobson (2008), 59-60 (Ringling got Jewell in 1954 when she was roughly three years old)), and Mysore since 1986, and Zina since 1971 or 1972 (Deposition of Gary Jacobson (2008), 66-70 (Mysore was born around 1946 and Ringling got Mysore in 1986)); (Deposition of Gary Jacobson (2008), 81-84 (Ringling got Zina in 1971 or 1972)). Presumably, the evidence will show that these elephants have spent many of their years and decades travelling and performing with Ringling Brothers' circus.

Whenever the elephants are on the train they are chained (e.g., Redacted ; Deposition of Gary Jacobson (2008), 187), usually by two legs Redacted

Records received from Ringling Brothers show that when the elephants are actually traveling on the train from one location to another, they can be chained on the train for up to 77 consecutive hours (FEI 48707). Ringling Brothers' own "Transportation Orders" show that elephants on the Blue Unit spent the following approximate amounts of time chained on the train: in 2007, 1159 hours/ about 48 days; in 2006, 1098 hours /about 45 days; in 2005, 1148 hours /about 47 days; in 2004, 1073 hours /about 44 days; in 2003, 1003 hours/ about 41 days; in 2002, 1050 hours /about 43 days; in 2001, 1023 hours /about 42 days; and in 2000, 1292 hours /about 53 days (Appendix F, declaration and spreadsheets). The records show that the longest train journeys (in terms of consecutive hours) for each of these eight years was: 76, 71, 76, 58, 72, 69, 74, and 73 hours, respectively (Appendix F). During this same time period (2000 to 2007) the elephants were only allowed off the train on seven occasions for a "rest" stop (FELD 4065, FELD 4073, FELD 3815, FEI 48667, FEI 48749, FEI 48729, FEI 48719). Other evidence also indicates that chaining is sometimes for longer than 24 hours, for example when the circus traveled from Kentucky to Arizona and from Denver to Ohio (FEI 17030-32; Deposition of Frank Hagan, 104-08 (elephants have been on the train for 37 and 48 consecutive hours)).

This means that the elephants travelling with the circus are chained on the train for extraordinary durations each year, year after year, for many years. According to a Ringling Brothers' employee the elephants likely spend even more time on chains when they are kept on the train before the train actually departs, and when the train arrives at a new location before the elephants are unloaded Redacted

When the elephants are off the train, they also spend many hours on chains. Security footage taken when the circus performed at the MCI arena in Washington, D.C. in March, 2004 indicates that the elephants were chained nearly continuously (on a cement floor) (Appendix D, MCI video footage). According to Ringling Brothers' own officials the elephants are routinely chained at night (Redacted Deposition of Alex Vargas, 186) and they remain on chains until 6:30-8:30 a.m. the next day (e.g., Deposition of Alex Vargas, 186). When not on chains, the elephants are confined in small pens (Deposition of Alex Vargas, 197; Deposition of Troy Metzler, 353). Other witnesses have testified that the only time the elephants are taken off chains is when they are performing, rehearsing, exercising, or being presented to the public at an "Open House" (Redacted Deposition of Jerry Ramos, 13-16).

Testimony demonstrates that at the Center for Elephant Conservation (CEC), a venue that Ringling Brothers contends "mimics the wild" (FEI 12), the female adult elephants, including Lutzi, Susan, Jewell, Mysore, and Zina, are chained at approximately 3:30-4:00 p.m. each day until approximately 6:30-7:00 a.m. the next day – or a total of approximately 15-16 hours each day, and a number of other elephants are chained for all but an hour and a half of each 24 hour day (Deposition of Gary Jacobson (October, 2007), 162). Spending many hours on chains physically wounds and harms the elephants by contributing to foot problems, arthritis, and other physical ailments.

The video evidence I have reviewed and what I observed at the inspection in Florida (e.g. Appendix D, footage from the MCI Center) shows elephants engaged in three principal activities, none of which is seen in the wild: a) repetitive stereotyped behavior (swaying, bobbing, attempting to remove the chains); b) lethargic, listless and vacant standing; or c) shuffling about as men approach, command, jab or prod them to move first one way and then another. One of the primary indications of psychological harm from the chaining and confinement of the elephants is the exhibition of stereotypic behavior. The evidence I have reviewed shows that many of Ringling Brothers' elephants exhibit stereotypic behavior (e.g. Appendices C, D, and E).

Stereotypic behavior can be described as the frequent, almost mechanical, repetition of the same posture or behavior (Clubb & Mason, 2002), as in the pacing back and forth of lions in a cage or the rhythmical rocking, swaying or bouncing of captive elephants. This unnatural behavior of elephants, seen regularly in the Ringling Brothers' elephants and other circus elephants is never observed in the wild, and is pathological. I believe that the stereotypic behavior as well as the listlessness and stupefied behavior exhibited by the older elephants are a direct result of the continual chaining and confinement of these animals.

The confinement and chaining of the elephants also harms them both physically and psychologically. Both chaining and confinement inhibit the elephants' ability to perform natural behaviors. The elephants are confined in unnatural conditions. On the road, the elephants are inside for hours on end (e.g., Appendix D, footage from the MCI Center). The pens provided for the elephants are frequently set up on concrete, are small, and do not provide the elephants adequate space to move and socialize. The photographs and video footage from the inspection of the Blue Unit show that the pens are quite small and that some of the elephants are even chained while in the pens Redacted The conditions at the CEC do not "mimic" natural elephant habitat (FEI 12). The field where I first observed the elephants was completely devoid of any trees and there was no water or even a mud wallow for the elephants. The outside pens at the facility were very barren and small, and the barn had a cement floor with sterile pens. It is hardly surprising that the elephants just stand and sway or bob mindlessly, which is what we observed, or that these same conditions would result in the listlessness that we also observed.

In my opinion the chaining and confinement of elephants by Ringling Brothers harms elephants by significantly impairing their essential behavioral patterns and harasses them by creating a likelihood of injury and/or significantly disrupting their "normal behavioral patterns". To go further, the chaining and confinement of elephants by Ringling Brothers removes any semblance of normal elephant behavior patterns, as I know them. In the many hours of video tape that I

observed (e.g., Appendix D), and in the five hours that I was permitted to observe the behavior of elephants at the CEC, the only behavior that I consider normal based on decades of experience with wild elephants, is the brief sequence of playful behavior by Shirley, and primarily by Benjamin, in the pond (FEI 6356), prior to Pat Harned's intervention with a bullhook which apparently led to Benjamin's death.

2. Wounding of the elephants

The chaining and confinement of elephants by Ringling Brothers physically wounds elephants. The pads of an elephant's foot are designed for walking long distances on uneven and rough surfaces, not for standing in one place on concrete. As a result of the predominantly stationary existence on smooth surfaces the feet of captive elephants wear unevenly (Schmidt, 2001) causing improper posture of the feet, and consequently of the legs and spine, and leading to painful arthritis and other joint problems. In captive circus elephants, the joints of the extremities and also the joints of the vertebral column are affected by pathologic alterations (Weissengruber, personal communication). The uneven wear shows up regularly in captivity (Schmidt, 2001) and the adage "use it or lose it" applies aptly to the circus elephants. Elephants need to walk to stay well. Because of this, trainers and handlers routinely trim most captive elephants' feet. Often the soles of their feet are pared down to a point where it is too thin, which was seen at the CEC (e.g. Appendix C; Figure 7).

For example, during our inspection of elephants at the CEC, we examined five elephants and each one showed physical wounds from chaining and confinement including scars on their legs from chaining and damaged feet from standing on concrete (see Appendix C). Mysore's back legs showed scarring from chaining (Appendix C), Zina had scarring on her left rear legs where she has been chained and both of her front feet were completely smooth (see photograph of a normal foot; Figure 7; Appendix C) from standing on concrete rather than moving on natural substrate. Her rear feet were smooth with deep fissures. Susan had calluses or pressure marks on her trunk, her ankle, wrist, elbow and her shoulder and her hip (Appendix C). These calluses are a form of bed sore from lying on very hard substrate (such as cement). Her left hind leg showed marks from chaining and the soles of her feet were abnormal – worn smooth from a sedentary life on concrete. The damage to her feet had caused osteomylitis on her right front foot, which caused her obvious pain (Appendix C). Jewell's feet were also worn totally smooth and she had marks on her left hind leg from chaining (Appendix C). The soles of Lutzi's feet, too, were worn smooth (Appendix C). Overall I was taken aback by the state of these animals' feet and how sharp the contrast is between their feet and the feet of wild elephants (figure 7).

The chaining and confinement of the elephants also wounds them psychologically as I have previously described, and as is evidenced by the elephants' exhibition of stereotypic behavior and listlessness (Clubb & Mason, 2002; Hediger, 1964).

3. Harming of the elephants

In the wild, elephants are on the move 20 out of 24 hours, while in the circus the evidence from chaining shows the reverse. Elephants in circuses are plagued by a host of physical and

psychological ailments (Schmidt, 2001; Clubb & Mason, 2002) that are not observed among their free-living cousins. Regardless of the regular health care they receive, and despite the lack of human predation and the vagaries of drought and disease, captive elephants of all species suffer from a host of ailments not observed in the wild including arthritis, foot problems, reproductive and psychological disorders (Clubb & Mason, 2002). Unlike free-living elephants, those kept in circuses show relatively low fertility and a high rate of stillbirths (Clubb & Mason, 2002). They must be primarily bred (usually unsuccessfully as opposed to 50% success rate in the wild; Poole, 1989b) via Artificial Insemination, they have difficulty giving birth, raising their young, and may engage in a wide variety of abnormal behaviors such as stereotypic swaying, killing of infants and hyper-aggression toward other elephants. In my opinion, the sedentary life of elephants in circuses is a major cause of these characteristics and indicates that chaining and confinement of this nature harms elephants by impairing essential behavioral patterns, including breeding, feeding and socializing.

In my opinion the chaining of elephants by Ringling Brothers is especially harmful – physically, behaviorally, psychologically as well as emotionally. For example, the chaining and confinement of elephants by Ringling Brothers is the most likely cause of the stereotypical swaying observed in the elephants and demonstrates the harm inflicted on these animals from chaining and confinement (e.g. Kurt cited on pp. 136-137 in Johnson, 1990; Clubb & Mason, 2002; Hediger, 1964). Such behavior is pathological and thus indicative of psychological, behavioral and emotional harm. This must be viewed against the natural adaptation of elephants, which is continuous movement over long distances.

Some of the features that make elephants so well designed for living in large spaces, become the very reasons for the unsuitability of elephants to the circus. For example, individuals so behaviorally and emotionally well-adapted to living in a socially close-knit society, at Ringling Brothers are not allowed the space necessary to live in natural family groups, never mind any attempt to present elephants with the option of choosing associates from among other families, clans or populations or providing the opportunity for learning survival skills through experience or from others. Ringling Brothers' employees have verified as much, as I explain more fully below, in discussing how elephants are separated from one another (e.g. Deposition of Gary Jacobson (2006), 278, Redacted, and fight with each other Redacted

By chaining elephants, Ringling Brothers severely restricts the elephants' ability to obtain adequate exercise and takes away the chance for them to interact normally – both activities being an enormous source of mental stimulation needed for the basic well being of such highly social, intelligent individuals. As a result, the elephants' basic behaviors are impaired, and the animals are physically, behaviorally, and psychologically harmed.

4. Harassing of the elephants

The activities that free-ranging elephants engage in motivate an active mind and keep fit a vigorous body. No matter what the arena, foraging, defending, socializing, or reproducing, an elephant's daily life is distinguished by need, purpose, challenge, choice, will, autonomy and solidarity. Social learning, too, is seen in many aspects of an elephant's daily life and is a vital

component of mental activity. Chaining prevents an elephant from experiencing these elements that are so fundamental to the lives of elephants.

In my opinion the chaining and confinement of elephants harasses the elephants and, whether intentionally, negligently, or by omission creates a likelihood of injury to the elephant by disrupting their normal behavioral patterns. Chaining and confinement disrupt the very essence of normal elephant life.

For example, in the deposition testimony of Tom Rider he states that that chaining of the elephants inhibits their social interaction (October 12, 2006, 25). In the deposition testimony of Frank Hagan he states that when elephants are chained, they have no opportunity to interact with each other, "no freedom of movement" (November 9, 2004, 90). In the deposition testimony of Gary Jacobson he explains separation of babies from mothers, first at birth and then permanently at about 2 years old even though still nursing (in the wild calves suckle until at least 4 years old) (October 24, 2006, 271-83). Mr. Jacobson can also be seen on video footage controlling mother elephants with a bullhook when they are giving birth and thereafter in order to separate the calf from its mother and keep the baby safe even though the mothers are chained while giving birth (FEI 45237, FELD-VID 6). Redacted

Alex Vargas explained that none of the baby elephants travel with their mothers (May 31, 2007, 54-55, 186).

In the deposition testimony of Joe Frisco, he reveals that the use of electric fence around the paddock is to keep the elephants from intermingling and that in paddocks there are partitions between elephants, (December 7, 2007, 115-19, Redacted. He also explained that Luna is kept on chains in the paddock during the day "because she would find ways to grab things on the other side of the fence" and that he trained her that she would get a "time out" if she continued to go to the fence to grab things, because he did not want her reaching for things outside of the fence (December 7, 2007, 130-31). In the deposition testimony of Troy Metzler, he admits that mothers do not travel with their babies (August 8, 2006, 197, 205, 211). In the deposition testimony of Robert Ridley, he explains that Karen is chained "because she gets playful with some of the other elephants" (August 25, 2006, 72). The statements all help illustrate how the elephants' essential behaviors are manipulated and halted by their chaining and confinement.

Reproductive behavior is an essential component of the daily life of any animal and in elephants involves a wide range of highly energetic physical and mental activity: searching over long distance for mates using chemical, acoustic signals and finely honed memory, as well as the intensely interactive behavior that female choice, courtship, mating and male-male competition constitutes. Ringling Brothers does not allow the intermingling of numerous males with females and this has a major impact on the purpose, choice, autonomy and will of an elephant when it comes to breeding. In addition, life at Ringling Brothers also does not permit elephants to search for, select from, learn about and manipulate a wide variety of food items. Elephants' large body and rather inflexible limb joints, so well adapted for energy efficient locomotion, are particularly vulnerable to arthritis in a sedentary captive environment (Weissengruber et al., 2006). This deprivation harasses the elephants and also creates a likelihood of injury due to the lack of physical activity and mental stimulation the elephants receive.

Elephants at Ringling Brothers are often subjected to loud environments with considerable low frequency noise and because of their chaining and confinement are unable to escape from this noise. For instance, in much of the video footage that I reviewed, the sound of generators can be heard in the background. Generators produce sound at the frequencies at which elephant hearing is very sensitive (Heffner & Heffner, 1980) and also at the frequencies at which elephant communicate with one another (Payne et al., 1986; Poole et al., 1988). The ability of elephants to detect very low frequency sounds (Heffner & Heffner, 1980) over long distances (Langbauer et al., 1991; Garstang et al., 1995; Larom et al., 1997) means that in city environments, during transport in trucks and trains, and in the vicinity of circus generators, where elephants are always confined and/or chained, elephants are continuously exposed to low frequency machine, train, vehicle and air traffic noise. The elephants' extreme sensitivity to these frequencies means that the loud low frequency noise that Ringling elephants are subjected to at various urban locations and during transport only further harm these animals because they cannot escape from such noise due to their confinement. Redacted

Such an acoustic environment constitutes harassment.

Perhaps most importantly the chaining of elephants does not allow them the opportunity to interact in a normal manner. So much of an elephant's interactions, especially affiliative behavior, involve tactile interaction. This is impossible for a chained elephants and negates an enormous part of an elephant's normal activity. The chaining and confinement of the elephants at Ringling Brothers deprives elephants of the opportunity to establish and foster the complex social relationships for which elephants are so well known.

Given elephants' high level of intelligence and inquisitive nature (Rench, 1956; Rench, 1957; Shoshani & Eisenberg, 1992; Poole, 1998; Roth, 1999; Cozzi et al., 2001; Hart et al., 2001; Plotnik et al., 2006; Douglas-Hamilton et al., 2006; Bates et al., 2007a and b, in press; Poole & Moss, in press), the confinement of the elephants for extended periods of time on trains or in various parking lots with little or no enrichment harasses the elephants, as it does not even permit them to explore their immediate surroundings.

Young elephants learn normal behavior in a social context (Lee, 1986; Lee & Moss, 1999). If removed from a context where they have an older, experienced individual (or a teacher), they are likely to engage in inappropriate responses to their physical environment, to take foraging risks, or possibly even to starve (Lee, 1987). Learning through experience and from others plays an extremely important role in the socializing of young elephants, and all young females between the ages of 2 to 9 years old practice the care taking of calves (allomothering; Lee, 1987). Since we know that Ringling Brothers separates calves from their mothers for the purposes of training, as I have previously discussed, it is extremely doubtful that young females are given the chance they require to perfect the skills of mothering before the birth of their first calf. We also know that, due to captive female elephants' lack of experience, handlers over manage births in captivity (Redacted , FELD-VID 6; Redacted merely perpetuating the problem.

For example, the elephant Shirley, who was born in captivity, did not raise her calf Riccardo (either because she rejected him or he rejected her). In either respect this is abnormal behavior.

Assuming that Shirley rejected her calf because she never learned from other elephants how to be a mother, her rejection is a phenomenon of captivity; it does not occur in the wild. Likewise, the need to remove a calf from its mother for safety reasons because of the fear the calf may become boisterous and be kicked or injured by other elephants are unnatural behaviors that are virtually unheard of in wild elephants. These examples illustrate the impacts that chaining and confinement has on elephants. Without the freedom to move and interact they are unable to learn species appropriate behaviors.

In addition, the trauma of social loss may be even more significant in the circus context. Young elephants rely on their social companions to learn appropriate behavioral responses to others (Lee & Moss, 1999). They are in continual olfactory and vocal contact with mothers and others (Poole, forthcoming) and remain within two meters of their mothers or another caretaker for most of the first five years of their life (Lee, 1986). They follow their mothers' social responses and learn who are their relatives and friends, and who represents potential threats. In the complex social world of an elephant, the presence of older family members ensures normal friendly social behavior and reduced levels of aggression. It allows for observation of sexual behavior between adults, and the practice of appropriate actions during play - a non-threatening context for learning about size, strength and the level of physical contact that is appropriate (Lee, 1986). Contact with other juveniles during play or care taking provides vital experience in rearing calves, essential to subsequent reproduction and non-abusive care taking of infants (Lee, 1987, 1989). In all of these ways the removal of calves from their mothers (which is initially accomplished by the chaining of very young calves away from their mothers for 10 consecutive days (Deposition of Gary Jacobson, 276) causes psychological and behavioral harm to the elephants. The removal and separate housing and chaining of calves also harasses the elephants by grossly disrupting appropriate social learning.

In the wild, juvenile females act as “allomothers”, who help to care for younger calves. Data show that the presence of these older sisters and helpers is statistically significant in keeping calves alive. This direct effect on survival is one aspect of the role that allomothers play; they may also free the mother from infant care duties, so that she can spend more time feeding, improving the nutritional plane of herself and the milk she produces. Young elephants of both sexes act as play partners for their younger siblings, with the benefits for social development noted above. Removal of calves from their older siblings and other elephants with whom they have had close contact has significant impact on the ability of calves to form social bonds and on its overall behavioral well being and the behavioral well being of the group as a whole.
The care given by Ringling Brothers cannot compensate for the care provided by a mother or allomother elephants. In contrast to the interactions between members of an elephant family, which are positive, nurturing and cooperative, the interactions between Ringling Brothers and their elephants (e.g., Appendices C and D, video footage considered) is hostile, confrontational, depriving, and harassing. Just as in human development it is not possible to raise a normal healthy social individual in this manner.

For all of these reasons and more, the chaining of elephants by Ringling Brothers constitutes harassment of the elephants and, whether intentionally, negligently, or by omission creates a "likelihood of injury" to the elephant "by annoying it to such an extent as to significantly disrupt

normal behavioral patterns" including "breeding, feeding, or sheltering." In my opinion the chaining and confinement of elephants by Ringling Brothers obliterates the very core of elephant life to such an extent as to make it unrecognisable.

D. Opinions about the Conservation of Elephants

The U.S. Endangered Species Act defines "conservation" as the "use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided [in the Endangered Species Act] are no longer necessary," i.e. the recovery of the species. Under this definition by holding Asian elephants in captivity Ringling Brothers is not engaging in conservation.

Asian elephants have been captured and tamed for over 4,000 years (Hart & Sundar, 2000). Indeed, the capture of elephants was so widespread for so many generations that it can be blamed as the primary historical cause of Asian elephant decline. Sukumar (2003) details how Asian elephant populations were historically depleted through capture and taming for use in armies and describes the magnitude of captures in the nineteenth and twentieth centuries and how these have impacted Asian elephant populations. While most countries have banned the capture of wild elephants, they are still caught legally in a few countries, and illegally in others for use as working elephants, or for sale to elephant ride operations, circuses and zoos. In Africa where there is no widespread captive tradition, the International Union for the Conservation of Nature (IUCN) African Elephant Specialist Group does not consider such actions as benefiting conservation, stating, “Believing there to be no direct benefit for *in situ* conservation of African elephants, the African Elephant Specialist Group (AfESG) of the IUCN Species Survival Commission does not endorse the removal of African elephants from the wild for any captive use” (AfESG/IUCN, 2003). South Africa, the source of most of the existing captive African elephants in zoos and circuses, has just banned any further capture from the wild due to the cruelty that such capture and captivity causes (Schalkwyk, 2008; DEAT, 2008). Currently there are estimated to be only 40,000 Asian elephants remaining, of which approximately 15,000 are held in captivity (IUCN Asian Elephant Specialist Group).

It is my firm opinion, based on my elephant research and conservation experience (see Appendix A) that the biggest threats facing both Asian and African elephants today are escalating poaching for ivory, habitat loss, and increasing conflict with humans over diminishing resources. Inadequate habitat for Asian elephants has been a problem for decades owing to the very large and rapidly growing human population and the consequent decline in natural resources. The ensuing habitat fragmentation forces elephants to forage near human habitation, thus encouraging human-elephant conflict. Elephants living on the borders of human habitation frequently eat agricultural crops and damage infrastructure. Traditional management of so-called “problem elephants” may include shooting offending elephants if the problem is severe, or possible translocation or capture. Trains are responsible for the deaths of many Asian elephants and poorly maintained power lines electrocute even more. For centuries elephants have been killed for their ivory tusks. The killing of Asian elephants for ivory has gone on for so many generations that the growth of tusks has been selected against: female Asian elephants do not carry them and only a small percentage of males do. These rare individuals are at particularly

high risk from poachers. The capture of wild elephants for the captive market also threatens the survival of the Asian elephant. In addition to the direct reduction of wild numbers, capture disrupts elephant families, and therefore may indirectly cause further declines in numbers.

To prevent the species from going extinct and to allow the species to recover, all efforts must be made to ensure: the protection of current elephant habitat; the creation of new protected habitats to reconnect fragmented populations; the resolution of human-elephant conflict; the prevention of elephant poaching and minimising the capture of wild elephants. The Asian Elephant Specialist Group (Santiapillai et al., 1990) and range country scientists and conservationists share my beliefs on the threats to Asian elephants. In recent years several projects have been initiated to reintroduce working or tourist elephants to the wild and increasing pressure is being brought to stop the capture of any wild elephants.

Captive breeding in the United States does not fall within this list. Yet, Ringling Brothers creates the misleading impression that it is helping to conserve elephants by breeding Asian elephants in captivity at their Center for Elephant Conservation (CEC) breeding facility (Egan, Hopping). Since the elephants at the CEC are bred and trained specifically for the circus and *not for reintroduction to the wild* (Ringling Brothers' Objections and Responses to Plaintiffs' First Set of Requests for Admissions (2004)), there is no link between captive breeding and conservation of Asian elephants. Ringling Brothers has had the audacity to claim that their breeding program may be critical to the survival of the Asian elephant in the wild. For instance, Kirtland et al. (FEI 719) state, "At a time when the future of the elephant throughout Asia is precarious at best, this breeding program may be the last best hope that the Asian elephant will survive into the 21st Century and beyond." And, Thomas Albert (2007) states, "that the CEC grew out of a mission: to assure the present and future well-being of the Asian elephant species" further stating, "every successful breeding [at the CEC] brings us a little closer to being able to improve the propagation of captive elephants and wild populations of elephants in their range states". Since "well-being" is not a word that I would apply to elephants at the CEC, and since successful breeding is not one of the conservation problems facing wild or captive Asian elephants in their range states, it is my opinion that Ringling Brothers' is constructing arguments that are invalid and irrelevant.

In addition, Asian elephants in zoos and circuses in North America, including the Ringling Brothers elephants, often are carriers of both the Herpes virus and Tuberculosis – both of which are diseases that can prove fatal for Asian elephants, particularly wild elephants without veterinary care. Therefore, even if Ringling Brothers were producing numerous infants (which they are not), I would recommend that none of these individuals should be sent back to the wild. If elephants were needed for reintroduction programs in order to conserve wild Asian elephants, they should come from natural breeding among the large captive population in Asia, not from a few circus elephants in North America.

Many U.S. institutions with elephants are also perpetuating the myth that elephants in North America must be "saved" or they will go extinct. Such notions hinge on claims that there is a North American "population" of elephants and the suggestion that this "population" will impact the survival of elephants, when in fact it merely means that they will cease to appear in zoos and circuses in North America. Neither the elephants at Ringling Brothers' breeding facility, nor those situated in institutions throughout the U.S., amount to true "populations" of Asian elephants. In a population of elephants, relationships radiate out from the mother-offspring bond

through families, extended families, bond groups, clans, to adults males and even beyond the population to strangers. There are no clans, no bond groups, and no elephant families in North America. There are no all-male groups. The most fundamental unit of elephant society, the mother-offspring bond, is broken at an extremely young and vulnerable age. The elephants within this collection of individuals do not behave like natural elephants, let alone a natural population. The closest replica of the wild I have seen for elephants in the U.S. was at the Elephant Sanctuary in Tennessee and at the Performing Animal Welfare Society's sanctuaries in California.

In my expert opinion there is not a legitimate "North American population" of Asian elephants and the elephants that do exist in North America do not benefit the survival of wild Asian elephants. Ringling Brothers breeding program neither benefits wild Asian elephants nor does it contribute to any other *true* population of Asian elephants. Accordingly, Ringling Brothers' purported efforts at "conservation" through captive breeding are in fact no such thing.

Ringling Brothers also claims that the use of elephants in the circus is educational. For instance Thomas Albert is quoted as saying that the presence of elephants in Ringling Brothers' "live performances have done so much to teach us all about elephants, their place in the natural world and the need to ensure their survival" (Albert, 2007). I would argue that elephants performing the tricks in live shows such as those I observed on the DVDs (e.g. Appendix D), teach us practically nothing useful about elephants. The performances teach us nothing educational about wild elephants, nothing at all about their place in the natural world, and nothing about the threats to their survival.

Permitting children to believe that elephants in circuses are living an acceptable life, when the evidence for the opposite is overwhelming, is not educating them. We may destroy some illusions by telling them this, but it is insincere to allow animals to suffer for the purpose of encouraging our children to appreciate them – to use Ringling Brothers' argument. Such appreciation can come from visits to facilities that meet acceptable standards (such as the two sanctuaries for elephants in the U.S.), or from films of wild elephants. Alternatively we can visit them in the wild, or through the amazing possibilities provided by the Internet and multimedia technology. It is my view that the use of elephants by circuses is an obsolete practice that has little or no positive impact on the conservation of the species.

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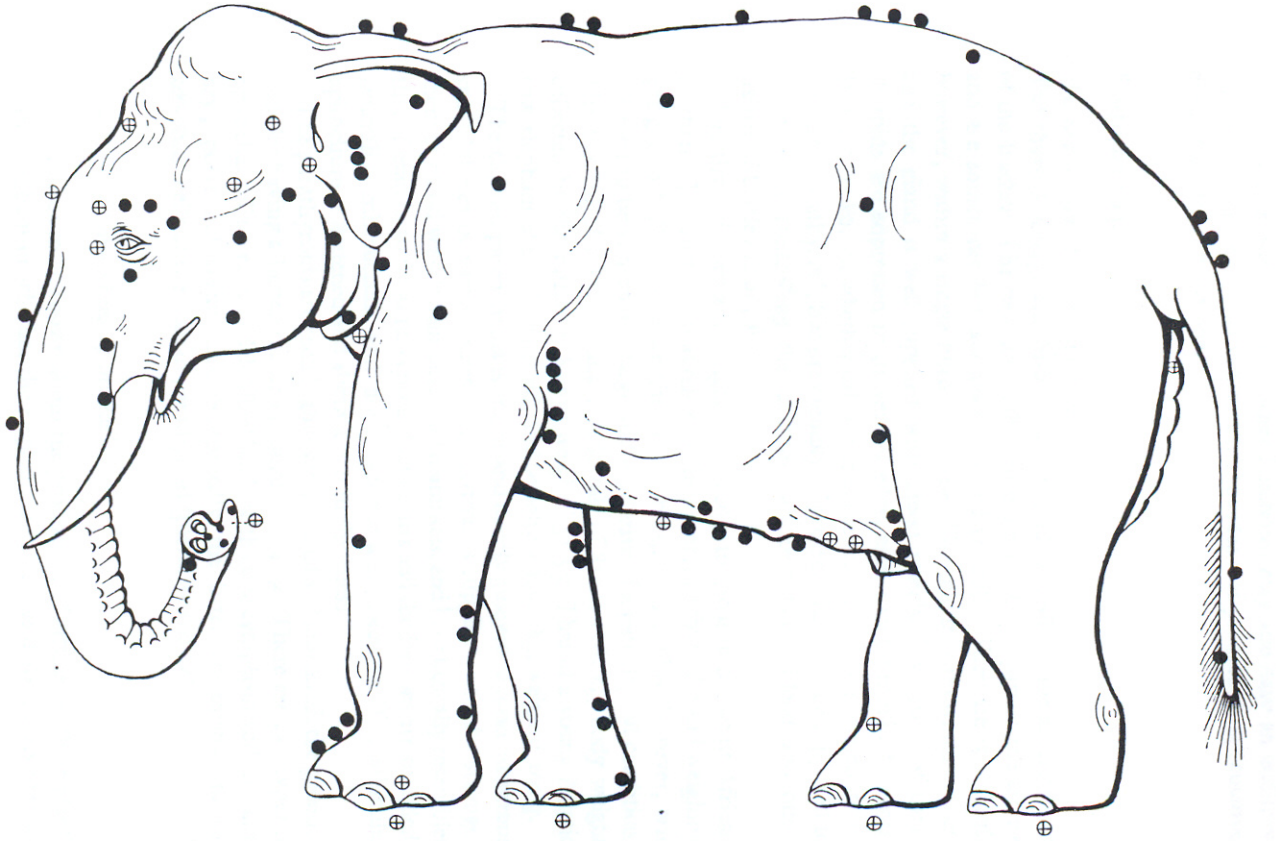
Figure 1. An African (left) and Asian (right) elephant family group walk in close proximity, providing care and reassurance to infants and calves. Note the difference in the size of the ears; the African elephant has very large ears, while the Asian elephant has smaller ears. The shape of an African elephant's back is concave, while an Asian elephant's is convex. The highest point on an African elephants is its shoulder, while in Asian elephants the highest point is the top of its head, which, unlike its African cousin is twin-domed. Male and female African elephants possess tusks (though a small percentage may be tuskless) while female and the majority of male Asian elephants do not have tusks, while Photograph of African elephants courtesy of Petter Granli, ElephantVoices.org; photograph of Asian elephants courtesy of Joyce Poole, ElephantVoices.org.

Figure 2. An Asian male elephant in musth tests females for receptivity (left); two African elephant males in musth duel for supremacy and access to an estrous female (right). Photograph courtesy of Petter Granli and Joyce Poole, respectively, ElephantVoices.org

Figure 3. Families may temporarily separate and reunite or they may mingle with other social groups to form larger social units. The close and lasting social relationships formed by elephants are remarkable in the context of their fluid social system. Photograph courtesy of Petter Granli, ElephantVoices.org.

Figure 4. Social learning via allomothering provides young females with an array of care-taking experiences and skills that persist until they give birth to their own first calf. This transfer of social knowledge is vital for successful mothering behavior.

Figure 5. Sensory points traditionally used by mahouts for controlling an elephant (from Deraniyagala 1955).



28 Sensory points on the skin of the domesticated Asiatic elephant which are utilised by mahouts for elephant control Deranyagala (1955)

Figure 6. Bullhooks, hotshots and whips photographed at the Center for Elephant Conservation.

Redacted

Redacted

Figure 7. The unhealthy soles of the feet of Ringling Brothers' elephants (left) are either completely smooth (above) or deeply fissured (below). The healthy soles of wild elephants are evenly worn from regular use on rough surfaces, displaying a thick (2.5 cm) of sensitive skin with a distinctive wrinkle pattern, which is individually recognizable in an elephant's footprint.

Appendix A Curriculum Vitae Joyce Poole

PERSONAL

Name : Joyce Hatheway Poole

Address : Buskhellinga 3, 3236 Sandefjord, NORWAY

Telephone: (47) 33478817

e-mail : jpoole@elephantvoices.org website: www.ElephantVoices.org

Date of Birth: May 1, 1956

Place of Birth: Frankfurt, Germany

Nationality : American

Marital Status: Married; one child born 7 May, 1993

UNIVERSITY EDUCATION

Postdoctoral	Princeton University Research Fellow 1984-1988.
Graduate	University of Cambridge, UK 1979-1982.
Degree	Ph.D. in Animal Behavior, 1983.
Thesis	Musth and male-male competition in the African elephant.
Undergraduate	Connecticut College 1974-1975. Smith College 1976-1979.
Degree	B.A. High Honors in Biological Sciences, Smith College, 1979.

GRADUATE RESEARCH EXPERIENCE

1998-ongoing	Elephant communication, cognition and social behavior.
1984-1990	Elephant vocal and olfactory communication, Amboseli National Park, Kenya.
1989	Effects of poaching on elephant age structure and social and reproductive patterns, East Africa.
1980-1982	*Musth* and male-male competition among elephants, Amboseli National Park, Kenya

AWARDS

1996	Smith College Medal - "for exemplifying the true purpose of a liberal arts education".
1979	A. Brazier Howell Award for a student paper on *musth* in African elephants presented at the 1979 American Society of Mammalogists meetings.

EMPLOYMENT

2002-ongoing	Director, ElephantVoices
2002-2007	Research Director, Amboseli Elephant Research Project, Amboseli Trust for Elephants: overseeing monitoring, training and research.
1999-2001	Consultant, Ecco Travel Group AS: Wildlife issues.
7/96 & 7/97	Consultant, IMAX: Scientific Advisor Elephant film, Amboseli.
1994-1997	Consultant, Richard Leakey & Associates; Training; Lecturing; Writing a book; Advisor, wildlife documentaries.
1991-1994	Coordinator, Elephant Program, Kenya Wildlife Service: Setting and implementing Kenya's elephant conservation and management policy; supervising management oriented research; reconciling land use and other conflicts between elephants and people; building expertise.
1990-1991	Consultant, World Bank: Pre-Project Facility, Elephant Program and Research Policy Framework and Investment Program, Kenya Wildlife Service.
1990	Consultant, International Union for the Conservation of Nature: compiling overview of elephant conservation in Eastern Africa for Paris Donors Conference.
1989	Consultant, African Wildlife Foundation: assessing effect of poaching on East African elephant populations.

PROFESSIONAL SOCIETIES/ BOARD MEMBERSHIPS

2002-ongoing	Member, Scientific Advisory Committee, Amboseli Elephant Research Project
2005-2006	Member, Science Advisory Board, Captive Elephant Management Coalition
2003-ongoing	Member, Advisory Board, Species Survival Network
2002-ongoing	Trustee, Amboseli Trust for Elephants
1988-2001	Member, African Elephant Specialist Group, Species Survival Commission, IUCN
1979	Member, *Sigma Xi*

LECTURES

Moderate number of public and scholarly lectures since 1990.

TELEVISION/RADIO

Participated in over *85* science documentaries, talk shows and news interviews since 1986.

LANGUAGES

English - fluent

Kiswahili - fluent

PUBLICATIONS

Scientific publications, theses and reports:

In preparation:

Poole, J.H. Forthcoming. The behavioral context of African elephant acoustic communication. In: *The Amboseli Elephants: A Long-Term Perspective on a Long-Lived Mammal.* Moss, C.J. & Croze, H.J. (Eds.) *University of Chicago Press.*

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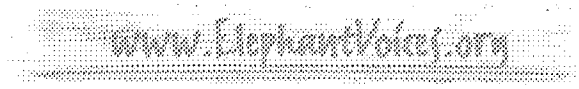
Appendix B Information on ElephantVoices



ElephantVoices
Advocacy policy

ElephantVoices is a collaborative project of the Amboseli Trust for Elephants' whose Amboseli Elephant Research Project is the longest study of free-living elephants in the world. The accumulated knowledge of this long-tem project is vital for the future of elephants everywhere. Joyce Poole has been associated with the Amboseli project studying elephant behaviour and communication for more than three decades.

The emergent knowledge of elephant behavior has developed hand-in-hand with a growing recognition of the need for the ethical treatment of animals. Joyce has been called upon to spend increasing time defending the interests of wild and captive elephants around the world.

ElephantVoices was initiated by Joyce and her partner, Petter Granli with a two-fold mission: to further the study of elephant communication and to act as a voice for the interests of elephants. Influencing policy decisions in the interests of all elephants, their welfare and conservation, is a major objective of ElephantVoices.

Three recognized taxa of elephants exist: Asian elephants, *Elephas maximus*, African savannah elephants, *Loxodonta africana*, and African forest elephants, *Loxodonta cyclotis*. Most African elephants live in the wild, while the majority of Asian elephants live in some form of captivity. Welfare issues are a concern for elephants in both the wild and captive state.

ElephantVoices receives numerous requests to comment on issues related to the conservation, management and treatment of both wild and captive elephants. Since we believe that the incorporation of our long-term scientific knowledge can set positive precedents for the interests of all elephants, our objective is to contribute wherever we can.

These are the "guidelines" we follow in all our advocacy work:

1. **Main priorities**
   Our main priority is policy issues where we can have the broadest influence on elephant conservation and welfare. Thus, the development statements on selected topics (e.g. culling, capture of wild elephants, elephants in circuses) concerning the management and treatment of elephants will be our primary goal.

   Our intention is for individuals and institutions to make use of these expert statements in a range of more specific cases around the world. While we may take a decision to give advice or provide statements on specific cases ourselves, this will be the exception rather than the rule.

2. **Our right and need to say "no"**
   If we do not feel that we can contribute because of our limited financial resources, time availability, lack of reliable information or inappropriate expertise, we ask you to understand and respect our position. Our resource base will often force us to excuse ourselves, even when we would like to engage. At the same time, when we decide to commit ourselves we do not compromise our work ethics nor our obligation to do our best.

3. **ElephantVoices initiatives versus external requests**
   Our advocacy effort is a combination of our own initiatives and responses to external requests. Our own initiatives focus on providing a baseline of knowledge from which the interests of elephants may be met. We will, with or without external partners or collaborators, continue to take action on behalf of elephants in what we believe are important issues and engage in cases where the outcome may represent a significant precedent for conservation and/or the treatment of captive or wild elephants.

4. **Our knowledge is accessible for anyone at any time**
   All our arguments are based upon what we hold as truths about elephants. Although each individual case may be different, our long-term scientific data and general knowledge apply to a very broad range of elephant welfare and conservation issues. Everything we know about elephants is knowledge that is, in principle, open to the public, through scientific and popular papers, policy documents, articles, films. We make every effort to make available our perspectives and standpoints via online documents, bibliography, statements and FAQ's (www.elephantvoices.org)

5. **Our internal process**
   All requests to ElephantVoices regarding advocacy issues goes through Joyce Poole (jpoole@elephantvoices.org). As a collaborative project of the Amboseli Trust for Elephants we may consult with, or collaborate with, ATE when this is appropriate and agreed upon.

6. **Political neutrality - collaboration**
   Our approach on any elephant issue is independent of political aspects, as the interests of elephants as we understand them will always be our main concern and focus. With this at heart we are in principle willing to collaborate with any party as long as we can embrace their work ethics.

7. **No rhetoric**
   World politics is full of rhetoric and the politics of wildlife conservation and animal welfare is not far behind. We try hard to avoid participating in discussions where the debate is more important than the action. We endeavor to advance positive change for elephant conservation and welfare.

8. **We stand for elephants, and not against anyone**
   We stand *for* the interest of elephants, and *against* mistreatment or abuse of elephants, with scientifically based arguments as our foundation. It is never our intention to contest against individuals, institutions or companies, and we are always prepared to work constructively with others to promote proper conservation, management and treatment of the world's largest land mammal.

9. **We want to be trusted**
   Our integrity and credibility is vital and rules all our advocacy efforts.

10. **Checking our sources**
    Our intention to be a reliable source of information about elephants and their well being is as important as our ability to check facts and external sources when we get or need input from others. We do not engage or go out publicly without evaluating thoroughly any information given to us.

11. **Sticking to what we know**
    We aim to take an honest and humble approach when it comes to questions and issues we do not know enough about. We acknowledge that our credibility is stronger when we stick to our core expertise, rather than to try to take sides or express an opinion on issues that are not directly related to our main fields of specialist knowledge.

Appendix E Data extracted from the Video Compilation of Ringling Brothers' Circus: Clips of video footage of elephants from 1987-2004.

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
Video compilation 1986-1988					
		Ear	Drags elephant to knees	Twice	Cracks a whip a couple of times
			Ear	Lower front leg	3 distress calls
			Temporal area - drags elephant to its knees	Side of face	Fearful behavior
			Mouth - pulls elephant forward		
			Ear – pulls elephant forward		
			Anus – pulls elephant forward		
Oakland 1989					
	1	End trunk to stop from Interacting	Mouth – pulls to get off train faster		
	2		Mouth – pulls to get off train faster		
			Under jaw – pulls to get off train faster		
			Mouth – pulls to get off train faster		
			Mouth – pulls to get off train faster		
	3		Mouth – pulls to get off train faster		
			Under jaw – pulls to get off		

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
			train faster		
San Francisco 1989					
	4			Three elephants try to touch trunks - typical greeting and affiliatory gesture - he stops them from touching one another by hitting with ankus	Fearful behavior
Oakland 1994					
	4A				Repeatedly pulling on chains while chained in train
San Jose 1994					
	5				Swaying on short chains
	6				Distress call
					Swaying on train
					Elephant squeaks
					Very loud plane noise
San Jose 1996					
	7		Mouth - trying to get elephant to hold still in the line up		Many men with ankuses some raised in threat
	8				Swaying in pen
Sacramento 1997					
	9		Under jaw – trying to pull elephant forward to stand in		

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
			line		
	10		Ear yanks elephant forward in line – for no apparent reason		
	11	Upper leg to get elephant to stand still in line	Under jaw – pulls elephant forward in line	Leg – getting elephants to hold still in line	
		Foot in line up	Ear - pulls elephant in line up		
		Upper leg to push elephant back into line			
San Jose 1998					
	12	Chest in line up			Very loud noise
	13		Forehead – pulls down as walks into ring		
	14	Lower leg as walk into ring			Raises ankus in threat as walk into ring
					Raises ankus in threat as rider getting on elephant
	15				Fearful behavior – someone appears with an ankus and at 10 meters elephant backs up
					Chained – swinging foot and trying to remove chain with trunk
					Very loud traffic
	15A				
San Francisco 1998					
	16	Underside trunk to get elephant to lift up trunk while putting on			Chaining

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
		headdress			
		Chin get elephant to continue to hold head up while putting on headdress			
		Underside trunk to get elephant to lift up trunk while putting on headdress			
		Chin get elephant to continue to hold head up while putting on headdress chin			
		Chin get elephant to continue to hold head up while putting on headdress chin			
		Chin get elephant to continue to hold head up while putting on headdress chin			
		Chin get elephant to continue to hold head up while putting on headdress			
		Chin get elephant to continue to hold head up while putting on headdress			
San Jose 1999					
	17				Very short – 2.5 ft – chains on picket line
	18				Very short – 2.5 ft – chains on picket line
	19				Very short – 2.5 ft – chains on picket line
San Francisco 1999					

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
	20	Hind leg to get elephant to move along in line	behind ear – as walking in line		
			top ear – to get elephant to move along in line		
			top ear - to get elephant to move along in line		
			top ear - to get elephant to move along in line		
	21				Swaying in pen
					Loud traffic
	22		Top ear - pulls along for at least 5 meters to get to move faster off train and out		
	23	Upper trunk to get to stay still in line			
		Upper front leg to get elephant to stop doing something in line			
San Francisco 2000					
	24	Under jaw to get elephant to continue to hold head trunk up while putting on headdress - this elephant is small 6.5 ft man tries to hid what he is doing - looking over shoulder and hides w body		End of trunk - hits young elephant to stop it from feeding - looks first for cameras - clearly did not want to be seen	
		Under jaw to get elephant to continue to hold head trunk up while putting on headdress - this elephant is small 6.5 ft man tries to hid what he is doing - looking over shoulder and hides w body			
	25			Under jaw – to get	

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
				elephant to mount another	
	27	Under jaw - trying to manoeuvre young elephant to get it to stand on hind legs, at this point ensuring trunk and head are up	Chest - pulling a young elephant toward him when trying to get an elephant to defecate on command		
		Under jaw - Under jaw - trying to manoeuvre young elephant to get it to stand on hind legs, at this point ensuring trunk and head are up			
		Feet - getting elephant to stand on hind legs w trunk up			
		Mouth - getting elephant to hold standing on hind legs position			
		Under jaw - getting elephant to hold standing on hind legs position			
	28	Behind front leg - to get to lift front leg while raising trunk			Very loud machine
		Behind front leg to get to lift front leg while raising trunk			
		Under jaw to coerce elephant to stand on hind legs			
		Feet - getting elephant to stand on hind legs w trunk up			
		Feet -getting elephant to stand on hind legs w trunk up			
		Feet -getting elephant to stand on hind legs w trunk up			
		Feet -getting elephant to stand on			

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
		hind legs w trunk up			
		Feet -getting elephant to stand on hind legs w trunk up			
	29				Uses leatherman to pinch elephant for no apparent reason
					Fearful behavior – handler threatens young elephant for no reason
	30	Side face – to move away			
		Chin – when tries to escape then jabs again			Fearful behavior
	31	Lower foreleg – to get elephant to stop doing something			
	32				Raised ankus threat
	33		Under jaw - yanks young elephant really hard to pull forward and gets to sit down		
			Back - to get elephant to lie down so can get hay off back - this is a 6ft elephant and he has a long broom so this manoeuvre is unnecessary		
	34		Side – pinches young elephant with leatherman to get it to move sideways so that he can sweep where it had been standing		Handler is sweeping around baby elephant continually getting it to move and move. Stops, looks around to see if anyone watching and then uses broom to jam down hard on

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
					elephant's foot twice.
			Side - pinches young elephant with leatherman to get it to move sideways so that he can sweep where it had been standing		
	35		Side - pinches young elephant with leatherman for no apparent reason		
			Side - pinches young elephant with leatherman for no apparent reason		
San Jose 2001					Very noisy
	36				Swaying in picket line
	37				Swaying in picket line
San Jose 2001					
	38	Lower jaw - jabs upward while standing in line before performance - no apparent reason			
	39		Shoulder - while in picket line yanks down for no apparent reason		
			Shoulder - while in picket line yanks down for no apparent reason		
San Francisco 2001			Underside trunk – as drag elephant off train faster		
	40				
	41	Side – jabs as walking along			
		Side – jabs as walking along			
	42	Side - again jabs on elephant's			

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
		side as walks along			
		Side - again jabs on elephant's side as walks along - presumably to keep elephants walking in line?			
	43	Under belly - quick jab as elephant walks along - for no purpose other than for good measure?			
	44				Chained & swaying
					Loud traffic
Tulsa 2001					
	45		Trunk – uses hook to pull elephant around by hooking and yanking hard		
			Trunk – uses hook to pull elephant around by hooking and yanking hard		
			Trunk – uses hook to pull elephant around by hooking and yanking hard		
			Trunk – uses hook to pull elephant around by hooking and yanking hard		
Oakland 2002					
	46		Underside of trunk – uses hook to yank elephant toward him		
	47			Under jaw to get elephant to mount another	
	48				Swaying on tight chains
San Jose 2002					

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
	49		Underside of trunk – hooks and yanks elephant toward him		
		Upper side trunk to push elephant away			
			Underside of trunk – uses hook to pull elephant toward him		
			Jaw line just below ear – hook to pull elephant toward him		
			Hind leg – hooks to pull young elephant forward – two men are on this elephant		
	50	Underside trunk to get elephant to perform trunk up pose			
			Behind ear to pull elephant forward		
			Behind ear to pull elephant forward		
			Behind ear to pull elephant forward		
			Under jaw – to pull elephant toward him		
	51	Side to push elephant away			
	52			Trunk – sharp tap to get elephant to move up	
				Trunk – sharp tap to get elephant to move up	
	53			Side – threaten and then hit for no apparent	Threaten with raised ankus

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
				reason	
San Francisco 2002					
	54	Mouth – jabs inside elephants mouth when it has its trunk up			Fearful behavior
		Then jabs under its jaw several times			Fearful behavior
	56	Trunk - again jab just inside of the mouth - elephants are really edgy			Fearful behavior
	57	Side of face for no apparent reason			
Fresno 2003					
	58	Trunk – in line up; no holding still?			
		Behind ear			
Reno 2003					
	59		Front leg – to stop forward movement		
Oakland 2003					
	60	Under jaw - elephant trying to grab a little grass as walking			
		side face – as trying to grab a bite of grass while walking			
	61	Underside of trunk for being inquisitive and sniffing			
			Under jaw - to drag along		
		Leg to slow down			
			Underside trunk – to pull along		
		Foot - to stop inquisitive behavior and slow walking	Underside trunk – to pull along		
				Face - when elephant slows again to	

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
				investigate gets hit and shouted at. The hit leaves a mark and he quickly rubs it off	
			Underside trunk – again pulls elephant along with hook		
	62	Upper side trunk - to stop movement in line up			
San Jose 2003					
	63		Underside trunk to pull elephant along to make it go faster		
	64	Leg – to push elephant away	Leg – pulls elephant toward		
			Underside trunk – steadies by pulling on underside trunk		
				Leg – tap on leg to get to move forward	
		Underbelly – jabs several times for no reason			
	65				
	66				Appears to pinch elephant to get it to move away – no apparent reason to do this
	67		Trunk – good hard aggressive yank to yank placid elephant		
	68	Shoulder - elephant standing quietly and man jabs hard in shoulder - must have said something as elephant then lies			

Tape	Scene	Jab with ankus point	Pull with ankus hook	Hit hook end ankus	Other
		down			
San Francisco 2003					
	69				Picket line in full sun
					Noisy machinery
MCI 2004					Swaying on chains

Appendix F Declaration and Spreadsheets Compiling Train Data

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

AMERICAN SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS, et al.,	)	
Plaintiffs,	)	
v.	)	**Civ. No. 03-2006 (EGS/JMF)**
RINGLING BROTHERS AND BARNUM & BAILEY CIRCUS, et al.,	)	
Defendant.	)	

DECLARATION OF MICHELLE SINNOTT

I, Michelle Sinnott, declare as follows:

1. I am a paralegal at the law firm of Meyer Glitzenstein and Crystal where I have been employed since June 12, 2006. I provide this statement based on my own personal knowledge and the information contained in records produced by the defendant in this case.

2. I have created excel spreadsheets for the purpose of documenting approximately how long elephants with Ringling Brothers' Blue Unit spend on the railroad train when traveling from venue to venue with the circus. These spreadsheets are based on information contained in "Transportation Orders" (for example FELD 4040) produced by defendant, as well as Ringling Brothers' Circus Operations Standard Operating Procedures (FEI 3069, 3079-3084) and deposition testimony provided by Gary Jacobson on January 18, 2008. In order to create the spreadsheets, I used the records listed in Attachment A to this declaration.

3. I used Microsoft Excel to create the spreadsheets. One of the distinct features of this program is that it allows the user to input data into designated columns and adapt several standard equations to analyze that data. The equations pull information from different rows and

columns within the spreadsheet in order to perform an array of calculations. When an equation is entered into a row or column the program gathers the appropriate data from the other columns and rows within the chart, performs the necessary calculation, and then inputs the result into the column or cell in which the equation was entered.

4. The information from the Transportation Orders that was input into the Excel spreadsheets is: the arrival date, the departure date, the arrival location, the departure location, the number of miles between departure and arrival locations, any stops made to water the animals, any stops made to rest the animals, the time the train was loaded and ready for switching, the time the train departed the departure location, the time the train arrived at the arrival location, and the time all the cars were spotted. See Attachment B (excel spreadsheets).

5. In entering the data into the Excel spreadsheets I converted the military time on the Transportation Orders into standard time.

6. Based on this data that was input into the Excel spreadsheets, I created three columns of equations: the total time on the train, the total time traveling, and the stationary time on the train.

7. The "total time on the train" column contains an equation that computes the amount of time between when animals were loaded on the train (the "loaded animals" column) and when the train cars were ready for unloading (the "all cars spotted" column). The total time on the train column is the total number of consecutive hours that the elephants were on the train for any given particular train trip or "run" between venues.

8. I used data from when the animals are loaded and when all the cars are spotted to make this calculation because it is common practice in the train industry not to unload a train until after it has been "spotted," which means that it has been moved to an appropriate spot in the

train yard for unloading. This is common practice for Ringling Brothers as well, which Gary Jacobson verified in the deposition testimony he provided on January 18, 2008. Mr. Jacobson explained that the elephants are on the train when the Transportation Orders note that the "train [is] loaded and ready for switching." Mr. Jacobson also testified that a host of activities occur after the train cars are "spotted" and before the elephants are unloaded. These activities include securing a police escort for the animal walk and waiting for the animal handlers to arrive at the train. Based on this information from Mr. Jacobson's testimony there is often additional time that the elephants spend on the train after the cars are spotted that is not documented in the Transportation Orders and therefore, not computed in the Excel spreadsheets. Additionally, there may be time that the elephants spend on the train before all the train cars are loaded and ready for switching since, Ringling Brothers' Animal Care Routine document states that after the last show "The elephants are lined up for the walk to the train" and are loaded on the train upon arriving at the train yard. RBBB, Animal Care Routine Blue 136 Unit (2007), FEI 51856-64. Accordingly, the "total time on the train" column computes the absolute minimum, rather than the maximum, amount of time that the elephants spend on the train during any given trip.

9. The next calculation performed by Excel is in the "total time traveling" column, which contains an equation that computes the time between when the train left its location ("left location" column) and when the train arrived at the new location ("arrived" column). This column contains the total number of consecutive hours the elephants were on the train during actual transit.

10. The final calculation is the "stationary time on the train" column, which contains an equation that computes the amount of time between when the elephants were loaded on the train ("loaded animals" column) and when the train actually departed ("left location" column,)

which is then added to the amount of time between when the train arrived at the new venue ("arrived" column) and when the train cars were ready for unloading ("all cars spotted" column). This column contains the number of hours the elephants were on the train when it was not moving.

11. The equations I used to make these calculations only calculate full hours, so the computer rounded the actual results of these calculations up or down to the nearest hour.

12. There are three additional calculations that I included at the bottom of each spreadsheet. One is the total number of hours the elephants spent on the train over the course of the year, the second is the total number of days the elephants spent on the train during the course of the year, and the third is the average number of hours the elephants spend on the train per trip during the course of the year. The first calculation is a sum of all the time in the "total time on the train" column. The second calculation simply converts the total number of hours into days. The third calculation is the average of all the results in the "total time on the train" column.

13. All of these calculations remain the same throughout the entire chart except for the rare occasion when a "rest" was noted on the Transportation Order. According to Mr. Jacobson's deposition testimony from January 18, 2008, the "rest" notation on the Transportation Orders indicate that the elephants were actually taken off of the train for a period of time during the trip. There are several other breaks listed on the Transportation Orders and subsequently on the Excel chart, such as "water animals" and "water available," however, according to Mr. Jacobson unless there is a "rest" notation on the Transportation Order then the elephants remained on the train. Consequently, the only breaks that affect the amount of time the elephant spend on the train and are therefore accounted for in the Excel calculations are the "rest" breaks. When a rest was noted on a Transportation Order, I would note that in the Excel spreadsheet and

manually subtract the number of hours designated for the "rest" from the total time the elephants spent on the train and the total time traveling. I calculated the time for each rest stop by calculating the number of hours between when the train arrived at the rest stop and when it departed. Most rest stops were generally between four (4) to six (6) hours in duration. See FELD 4065, FELD 4073, FELD 3815, FEI 48667, FEI 48749, FEI 48729, FEI 48719 (Attachment C).

14. Because the rest stops altered the number of consecutive hours the elephants spent on the train, I noted this by placing an asterisk next to the "rest" notations in the spreadsheets. In explaining that asterisk I indicated that the elephants were taken off the train during the trip as well as the length of the rest stop. I also manually calculated the total number of hours the elephants were on the train prior to and after the rest, which are also indicated in the asterisk at the bottom of the chart. For these calculations, I determined the number of hours between the loaded animals time and the arrival at the rest stop time and then the number of hours between the departure from the rest stop time and the cars spotted time.

15. There were several specific discrepancies with the Transportation Orders that require further explanation.

16. There were a few instances in which several Transportation Orders were created for the same day that showed the train going to different locations. In order to determine which Transportation Order to use, I referred to the Blue Unit itineraries for the year and date in question and used the Transportation Order that corresponded with the schedule, e.g., see FELD 3395 and FELD 3400

17. There were also a few Transportation Orders for the same date and location that showed varying arrival, departure, loading, and spotted times. In an attempt to be as

conservative as possible with my calculations I relied on the Transportation Order that showed the elephants being on the train for the least amount of time. For example, between the Order marked FEI 48734 and the one marked FEI 48735, I used FEI 48735 because it showed the elephants spent less time on the train.

18. On several of the more recent Transportation Orders there appeared to be errors with some of the "train loaded and ready for switching" dates. For example, there was an instance where the Transportation Order showed the train loaded and ready for switching at 8:30 PM on 2/21/06, however, the train was shown departing the location at 1:00 AM on 2/21/06. See FEI 48777. It was my understanding, based on all the other Transportation Orders that the train does not depart until after it is loaded. When an instance like this occurred I would input the train loaded and ready for switching date as the day prior to the one actually listed. So for the above example I inputted the train loaded time and date as 8:30 PM on 2/20/06.

19. In certain instances the Transportation Orders specifically indicated the stocks (the cars the animals are kept on) were loaded, departed, arrived, or spotted independently of the rest of the train. In these cases I recorded the specific time noted for the stock cars in the Excel spreadsheet, see e.g., FELD 3615.

20. Some of the Transportation Orders specifically indicate when the stock cars were unloaded after arriving at the new venue. I did not create a specific column for this information since a majority of the Transportation Orders did not indicate specifically when the stock cars were unloaded. Again, in an effort to conservatively represent the amount of time the elephant spend on the train, I only included used the time the stock cars were unloaded if the stocks cars were unloaded prior to when the stocks and/or all cars were spotted, see e.g., FELD 3918. In such instances, I recorded the unloaded stocks time in the "cars spotted" column. Due to the

formatting requirements of Excel and the fact that additional data (such as written explanations) cannot be included in an entry for the program to perform a calculation, I did not indicate within the chart the instances in which the "cars spotted" column actually contains the time when the stocks were unloaded.

21. Whenever the train crossed over into a different time zone it was noted on the Transportation Order. It is not abundantly clear from the actual orders if the times shown account for the change in time zone or if the change in time zone was simply noted on the Order, see e.g., FELD 3520. In order to determine whether I needed to account for changes in time zones when inputting data from the Transportation Orders, I reviewed several Transportation Orders that show different times zones and talked with Mr. Tom Rider about traveling on the circus train. As a result of these endeavors, I concluded that the Transportation Orders merely note when the train crosses over into a different time zone, but that the actual time on the Transportation Order is in the time zone of the departure location.

22. Based on the spreadsheets I created from the Transportation Orders, the Blue Unit elephants spent the following approximate total number of hours on the train per year:

a) in 2007, 1159 hours/ about 48 days;

b) in 2006, 1098 hours /about 45 days;

c) in 2005, 1148 hours /about 47 days;

d) in 2004, 1073 hours /about 44 days;

e) in 2003, 1003 hours/ about 41 days;

f) in 2002, 1050 hours /about 43 days;

g) in 2001, 1023 hours /about 42 days; and

h) in 2000, 1292 hours /about 53 days.

23. The Blue Unit Transportation Orders and Excel charts show that the elephants spend anywhere from 4 to 77 consecutive hours on the train. The longest runs for the years that I analyzed (2000–2008) were as follows:

a) year 2000, Denver, CO to Cleveland, OH 73 hours (FELD 3535)

b) year 2001, St. Louis, MO to Tampa, FL 74 hours (FELD 3991)

c) year 2002, Denver, CO to Cleveland, OH 69 hours (FELD 3537)

d) year 2003, Auburn Hills, MI to Boston, MA 72 hours (FELD 3404)

e) year 2004, Sacramento, CA to Everett, WA 58 hours (FELD 3921)

f) year 2005, St. Louis, MO to Tampa, FL 76 hours (FEI 48785)

g) year 2006, Columbus, OH to Orlando, FL 71 hours (FEI 48745)

h) year 2007, Auburn Hills, MI to Tampa, FL 76 hours (FEI 48707)

24. Based on the spreadsheets containing information from the Blue Unit Transportation Orders the elephants spend on average the following number of hours on the train during a trip for each of the years listed:

a) in 2007, an average of 31 hours

b) in 2006, an average of 26 hours

c) in 2005, an average of 28 hours

d) in 2004, an average of 27 hours

e) in 2003, an average of 27 hours

f) in 2002, an average of 25 hours

g) in 2001, an average of 26 hours

h) in 2000, an average of 27 hours

25. Of the Blue Unit Transportation Orders I have analyzed (2000-2008), only seven of these orders (out of well over three hundred) reflect that a rest stop was provided, see FELD 4065, FELD 4073, FELD 3815, FEI 48667, FEI 48749, FEI 48729, FEI 48719.

26. I have performed the same tasks described above for the Red Unit Transportation Orders for the years 2000 through 2008. When creating the Excel spreadsheets for the Red Unit Transportation Orders I used the exact same chart set-up and equations that I used for the Blue Unit Transportation Orders. The results from my Excel calculations for the Red Unit are comparable to the results for the Blue Unit.

27. Based on the spreadsheets I created from the Transportation Orders, the Red Unit elephants spent the following approximate total number of hours on the train per year:

a) in 2007, 1105 hours/ about 46 days;

b) in 2006, 1209 hours /about 50 days;

c) in 2005, 1098 hours /about 45 days;

d) in 2004, 1260 hours /about 52 days;

e) in 2003, 1085 hours/ about 45 days;

f) in 2002, 1085 hours /about 45 days;

g) in 2001, 1126 hours /about 46 days; and

h) in 2000, 1072 hours /about 44 days.

28. The Transportation Orders and Excel charts for the Red Unit show that the elephants spend anywhere from 1 to 100 consecutive hours on the train. The longest runs for the years that I analyzed (2000–2008) were as follows:

a) year 2000, St. Louis, MO to Tampa, FL 71 hours (FELD 3990)

b) year 2001, Lexington, KY to Tucson, AZ 100 hours (FELD 3703)

c) year 2002, St. Louis, MO to Tampa, FL 94 hours (FELD 3992)

d) year 2003, Huntsville, AL to Orlando, FL 46 hours (FELD 3648)

e) year 2004, St. Louis, MO to Tampa, FL 73 hours (FEI 48827)

f) year 2005, Colorado Springs, CO to Las Vegas 55 hours (FEI 48584)

g) year 2006, St. Louis, MO to Tampa, FL 76 hours (FEI 48878)

h) year 2007, Wilkes-Barre, PA to Omaha, NE 71 hours (FEI 48638)

29. Based on the spreadsheets containing information from the Red Unit Transportation Orders the elephants spend on average the following number of hours on the train during a trip for each of the years listed:

a) in 2007, an average of 29 hours

b) in 2006, an average of 32 hours

c) in 2005, an average of 26 hours

d) in 2004, an average of 29 hours

e) in 2003, an average of 25 hours

f) in 2002, an average of 26 hours

g) in 2001, an average of 25 hours

h) in 2000, an average of 26 hours

30. Of the Red Unit Transportation Orders I have analyzed (2000-2008), only seven of these orders (out of well over three hundred) reflect that a rest stop was provided, see FELD 3459, FELD 4070, FELD 4025, FEI 48587, FEI 48569, FEI 48900, FEI 48619.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

DATED this 12 day of March ___, 2008

Michelle Sinnott

ATTACHMENT A:

FELD 3381, 3388, 3390, 3397, 3400-3402, 3404, 3411, 3413, 3419, 3424, 3430, 3432, 3435-3437, 3440, 3445-3446, 3449, 3457, 3462, 3468, 3470, 3481-3843, 3488, 3496, 3498, 3503-3504, 3509, 3511, 3519-3520, 3526-3527, 3535, 3537, 3545, 3550-3551, 3554, 3559, 3570-3571, 3581, 3586, 3588, 3595, 3597, 3602, 3604, 3606, 3612, 3615, 3616, 3620, 3623-3624, 3626, 3632-3633, 3635, 3641, 3649, 3656, 3664, 3666, 3668, 3675, 3677, 3679, 3683, 3686, 3692-3693, 3697, 3701, 3706, 3724, 3726, 3733-3734, 3736, 3753, 3758, 3760, 3769, 3771, 3774, 3776, 3779, 3782, 3786-3787, 3792, 3795, 3801-3803, 3811, 3813, 3815, 3824, 3826, 3832, 3834-3835, 3837, 3839-3840, 3842, 3849, 3851, 3856, 3858, 3866, 3869, 3870-3871, 3874, 3877, 3881, 3883, 3889, 3894, 3897, 3903, 3905, 3909, 3912, 3916, 3918, 3921, 3926, 3928, 3933, 3936, 3942-3943, 3948, 3951, 3957, 3959, 3965, 3967, 3969-3970, 3973, 3981, 3983, 3985, 3991, 3993, 3997, 4004, 4006, 4008, 4010, 4013, 4015, 4017, 4020, 4028, 4030, 4033, 4037, 4046, 4048, 4050, 4052, 4055-4056, 4064-4065, 4071, 4073, 4075

FEI 48664-48667, 48669, 48671, 48673, 48677, 48679, 48681, 48683, 48685, 48687, 48689, 48691, 48692, 48701-48731, 48733, 48735-48789, 48792-48826, 48662-48663, 48790-48791

ATTACHMENT B

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
1/2/2000	1/2/2000	Tampa, FL	Tampa, FL	342 feet	13.00	0.00	12.50	none	1/1/00 8:00 PM	1/2/00 8:30 AM	1/2/00 9:00 AM	1/2/00 9:30 AM	FELD 4020
1/10/2000	1/10/2000	Tampa, FL	St. Petersburg, FL	47 miles	10.00	4.00	6.02	none	1/10/00 1:30 AM	1/10/00 6:30 AM	1/10/00 11:00 AM	1/10/00 12:01 PM	FELD 4015
1/17/2000	1/17/2000	St. Petersburge, FL	Orlando, FL	137 miles	17.00	9.00	8.00	1/17/00 10:00 AM - water animals	1/17/00 12:01 AM	1/17/00 7:00 AM	1/17/00 4:00 PM	1/17/00 6:00 PM	FELD 3985
1/24/2000	1/25/2000	Orlando, FL	Birmingham, AL	610 miles	37.00	28.00	8.00	1/24/00 1:00 PM - water animals	1/24/00 12:01 AM	1/24/00 6:30 AM	1/25/00 11:30 AM	1/25/00 1:30 PM	FELD 3824
1/31/2000	2/1/2000	Birmingham, AL	Greensboro, NC	511 miles	30.00	22.00	7.50	1/31/00 3:00 PM - water animals	1/30/00 9:00 PM	1/31/00 2:30 AM	2/1/00 1:00 AM	2/1/00 3:30 AM	FELD 3430
2/7/2000	2/7/2000	Greensboro, NC	Hampton, VA	318 miles	24.00	16.00	7.75	2/7/00 2:00 PM - water animals	2/7/00 12:01 AM	2/7/00 5:30 AM	2/7/00 10:15 PM	2/8/00 1:00 AM	FELD 3595
2/14/2000	2/14/2000	Hampton, VA	Norfolk, VA	183 miles	19.00	11.00	8.00	2/14/00 9:30 AM - water animals	2/14/00 12:01 AM	2/14/00 6:30 AM	2/14/00 6:00 PM	2/14/00 8:00 PM	FELD 3616
2/21/2000	2/21/2000	Norfolk, VA	Richmond, VA	185 miles	16.00	7.00	8.00	none	2/21/00 12:01 AM	2/21/00 6:30 AM	2/21/00 2:30 PM	2/21/00 4:30 PM	FELD 3802
2/28/2000	2/29/2000	Richmond, VA	E. Rutherford, NY	635 miles	33.00	25.00	8.00	2/28/00 3:00 PM - water animals	2/28/00 1:00 AM	2/28/00 7:00 AM	2/29/00 8:00 AM	2/29/00 10:00 AM	FELD 3894
3/6/2000	3/6/2000	East Rutherford, NY	Uniondale, NY	40 miles	16.00	9.00	6.00	none	3/6/00 2:00 AM	3/6/00 6:30 AM	3/6/00 4:30 PM	3/6/00 6:30 PM	FELD 3551
3/14/2000	3/14/2000	Uniondale, NY	New York, NY	21 miles	14.00	4.00	9.50	none	3/14/00 1:00 AM	3/14/00 8:00 AM	3/14/00 1:00 PM	3/14/00 3:30 PM	FELD 4048
4/3/2000	4/5/2000	New York, NY	Knoxville, TN	798 miles	52.00	39.00	12.50	4/4/00 10:45 AM - water animals	4/3/00 1:00 AM	4/3/00 11:00 AM	4/5/00 3:00 AM	4/5/00 5:30 AM	FELD 3787
4/10/2000	4/11/2000	Knoxville, TN	Philadelphia, PA	703 miles	44.00	36.00	7.00	4/10/00 1:00 PM - water animals 4/11/00 12:15 PM - water animals	4/10/00 12:01 AM	4/10/00 6:00 AM	4/11/00 7:00 PM	4/11/00 9:00 PM	FELD 3683
4/24/2000	4/25/2000	Philadelphia, PA	Providence, RI	428 miles	30.00	21.00	7.75	4/24/00 11:30 AM - water animals	4/24/00 12:01 AM	4/24/00 6:00 AM	4/25/00 3:45 AM	4/25/00 6:30 AM	FELD 3849
5/1/2000	5/2/2000	Providence, RI	New Haven, CT	112 miles	9.00	3.00	6.00	none	5/1/2000 7:00 PM	5/1/2000 11:30 PM	5/2/2000 2:30 AM	5/2/2000 4:30 AM	FELD 3877
5/8/2000	5/9/2000	New Haven, CT	Hartford, CT	37 miles	25.00	1.00	23.50	none	5/8/2000 12:01 AM	5/8/2000 10:00 PM	5/8/2000 11:30 PM	5/9/2000 2:00 AM	FELD 3779
5/15/2000	5/16/2000	Hartford, CT	Hershey, PA	425 miles	33.00	27.00	5.25	5/15/00 12:30 PM - water animals	5/15/2000 12:01 AM	5/15/2000 5:00 AM	5/16/2000 8:45 AM	5/16/2000 10:00 AM	FELD 3620
5/22/2000	5/23/2000	Hershey, PA	Springfield, MA	435 miles	30.00	24.00	4.50	5/22/00 2:30 PM - water animals	5/22/2000 12:01 AM	5/22/2000 3:00 AM	5/23/2000 4:00 AM	5/23/2000 6:30 AM	FELD 3632
5/26/2000	5/26/2000	Springfield, MA	Albany, NY	112 miles	15.00	7.00	8.00	5/26/00 11:30 AM - water animals	5/26/2000 1:00 AM	5/26/2000 7:00 AM	5/26/2000 2:30 PM	5/26/2000 4:30 PM	FELD 3981
5/30/2000	5/30/2000	Albany, NY	Wilkes-Barre, PA	230 miles	20.00	12.00	8.50	none	5/29/2000 8:00 PM	5/30/2000 2:00 AM	5/30/2000 2:00 PM	5/30/2000 4:30 PM	FELD 3381
6/5/2000	6/7/2000	Wilkes-Barre, PA	Lexington, KY	845 miles	50.00	42.00	8.00	6/5/00 11:30 AM - water animals 6/6/00 3:45 AM - water available 6/6/00 11:30 AM - water animals	6/5/2000 12:01 AM	6/5/2000 6:30 AM	6/7/2000 12:45 AM	6/7/2000 2:45 AM	FELD 4071
6/12/2000	6/14/2000	Lexington, KY	Austin, TX	1,178 miles	57.00	49.00	8.50	6/12/00 11:00 AM - water animals 6/13/00 2:30 PM - water animals	6/11/2000 8:00 PM	6/12/2000 2:00 AM	6/14/2000 3:30 AM	6/14/2000 6:00 AM	FELD 3701
6/19/2000	6/21/2000	Austin, TX	Phoenix, AZ	1,134 miles	55.00	46.00	9.00	6/19/00 2:30 PM - water animals 6/20/00 10:30 AM - water animals 6/20/00 8:30 PM - water animals	6/18/2000 8:00 PM	6/19/2000 3:30 AM	6/21/2000 2:00 AM	6/21/2000 4:00 AM	FELD 3411
7/3/2000	7/4/2000	Phoenix, AZ	Las Vegas, NV	784 miles	33.00	26.00	7.00	7/3/00 1:13 PM - water animals 7/3/00 9:30 PM - water animals	7/3/2000 1:00 AM	7/3/2000 6:00 AM	7/4/2000 8:30 AM	7/4/2000 10:30 AM	FELD 3858
7/10/2000	7/10/2000	Las Vegas, NV	Fresno, CA	428 miles	27.00	17.00	9.25	7/10/00 2:00 PM - water animals	7/10/2000 12:00 AM	7/10/2000 6:30 AM	7/10/2000 11:45 PM	7/11/2000 3:00 AM	FELD 3693
7/17/2000	7/18/2000	Fresno, CA	Long Beach, CA	313 miles	26.00	17.00	8.48	7/17/00 10:30 AM - water animals	7/17/2000 1:00 AM	7/17/2000 6:30 AM	7/18/2000 12:01 AM	7/18/2000 3:30 AM	FELD 3570
7/24/2000	7/24/2000	Long Beach, CA	Anaheim, CA	26 miles	12.00	3.00	8.00	none	7/24/2000 12:01 AM	7/24/2000 7:00 AM	7/24/2000 10:30 AM	7/24/2000 12:30 PM	FELD 3390
MISSING		**Anaheim, CA**	**Los Angeles, CA**										
8/7/2000	8/7/2000	Los Angeles, CA	San Diego, CA	130 miles	21.00	6.00	14.00	none	8/7/2000 2:00 AM	8/7/2000 3:00 PM	8/7/2000 9:00 PM	8/7/2000 11:00 PM	FELD 3726

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
8/14/2000	8/15/2000	San Diego, CA	Oakland, CA	657 miles	37.00	26.00	11.00	8/14/00 5:30 PM - water animals	8/14/2000 12:01 AM	8/14/2000 9:45 AM	8/15/2000 11:45 AM	8/15/2000 1:45 PM	FELD 3948
8/21/2000	8/21/2000	Oakland, CA	San Jose, CA	42 miles	11.00	3.00	7.00	none	8/21/2000 12:01 AM	8/21/2000 6:00 AM	8/21/2000 9:30 AM	8/21/2000 11:30 AM	FELD 3811
8/28/2000	8/28/2000	San Jose, CA	San Francisco, CA	48 miles	12.00	3.00	8.00	none	8/28/2000 12:01 AM	8/28/2000 7:00 AM	8/28/2000 10:30 AM	8/28/2000 12:30 PM	FELD 3965
9/5/2000	9/5/2000	San Francisco, CA	Sacramenta, CA	87 miles	15.00	9.00	6.00	none	9/4/2000 8:00 PM	9/5/2000 2:30 AM	9/5/2000 12:00 PM	9/5/2000 12:00 PM	FELD 3957
9/11/2000	9/12/2000	Sacramento, CA	Seattle, WA	834 miles	42.00	33.00	8.50	9/11/00 1:00 PM - water animals 9/12/00 7:45 AM - water animals	9/11/2000 12:01 AM	9/11/2000 6:30 AM	9/12/2000 4:30 PM	9/12/2000 7:00 PM	FELD 3926
9/18/2000	9/18/2000	Seattle, WA	Portland, OR	182 miles	16.00	8.00	7.00	none	9/18/2000 12:01 AM	9/18/2000 6:00 AM	9/18/2000 2:30 PM	9/18/2000 4:30 PM	FELD 3973
9/25/2000	9/26/2000	Portland, OR	Salt Lake City, UT	1,083 miles	43.00	35.00	8.00	9/25/00 1:45 PM - water animals 9/26/00 11:00 AM - water animals	9/25/2000 12:01 AM	9/25/2000 6:30 AM	9/26/2000 6:00 PM	9/26/2000 8:00 PM	FELD 3871
10/2/2000	10/3/2000	Salt Lake Ciyt, UT	Denver, CO	570 miles	30.00	20.00	8.75	10/2/00 1:30 PM - water animals	10/2/2000 12:01 AM	10/2/2000 6:00 AM	10/3/2000 2:45 AM	10/3/2000 6:30 AM	FELD 3933
10/16/2000	10/19/2000	Denver, CO	Cleveland, OH	1,448 miles	73.00	62.00	10.98	10/16/00 11:45 PM - water animals 10/17/00 4:30 PM - water animals 10/18/00 5:45 PM - water animals	10/16/2000 12:01 AM	10/16/2000 10:00 AM	10/19/2000 12:01 AM	10/19/2000 2:00 AM	FELD 3535
10/30/2000	10/31/2000	Cleveland, OH	Rosemont, IL	357 miles	27.00	19.00	7.00	10/30/00 2:45 PM - water animals	10/30/2000 12:01 AM	10/30/2000 6:00 AM	10/31/2000 1:30 AM	10/31/2000 3:30 AM	FELD 3496
11/13/2000	11/13/2000	Rosement, IL	Chicago, IL	19 miles	8.00	1.00	7.50	none	11/13/2000 12:01 AM	11/13/2000 2:30 AM	11/13/2000 3:30 AM	11/13/2000 9:00 AM	FELD 3916
11/27/2000	11/29/2000	Chicago, IL	Savannah, GA	1,054 miles	62.00	56.00	6.00	11/27/00 2:00 PM - water animals 11/28/00 8:00 AM - water available	11/27/2000 12:01 AM	11/27/2000 2:30 AM	11/29/2000 10:30 AM	11/29/2000 2:30 PM	FELD 3481
12/4/2000	12/4/2000	Savannah, GA	North Charleston, SC	111 miles	10.00	3.00	6.00	none	12/4/2000 12:01 AM	12/4/2000 6:00 AM	12/4/2000 10:00 AM	12/4/2000 11:00 AM	FELD 3969
12/11/2000	12/11/2000	North Charleston, SC	Orlando, FL	413 miles	29.00	14.00	14.25	12/11/00 11:00 - water animals	12/10/2000 2:00 PM	12/11/2000 2:30 AM	12/11/2000 5:15 PM	12/11/2000 7:30 PM	FELD 3774
12/30/2000	12/31/2000	Orlando, FL	Miami, FL	266 miles	13.00	7.00	5.00	none	12/30/2000 7:00 AM	12/30/2000 12:01 PM	12/30/2000 8:00 PM	12/30/2000 8:00 PM	FELD 3832
		Total # of hours on the train:			**1196**								
		Total # of days on the train:			**49.83**								
		Average # of hours on the train per trip:			**27.81**								

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
1/8/2001	1/8/2001	Ft. Lauderdale, FL	Miami, FL	27 miles	6.00	4.00	1.50	none	1/8/01 2:00 AM	1/8/01 3:30 AM	1/8/01 8:30 AM	1/8/01 9:00 AM	FELD 4004
1/16/2001	1/16/2001	Miamia, FL	Jacksonville, FL	368 miles	22.00	9.00	13.00	1/16/01 1:00 PM - water animals	1/15/01 7:30 PM	1/16/01 3:30 AM	1/16/01 1:00 PM	1/16/01 6:00 PM	FELD 3758
1/22/2001	1/22/2001	Jacksonville, FL	Columbia, SC	287 miles	21.00	11.00	10.00	1/22/01 2:00 PM - water animals	1/22/01 1:30 AM	1/22/01 9:00 AM	1/22/01 8:00 PM	1/22/01 11:00 PM	FELD 3666
1/29/2001	1/29/2001	Columbia, SC	Charlotte, NC	108 miles	15.00	4.00	10.00	none	1/28/01 10:00 PM	1/29/01 5:00 AM	1/29/01 10:00 AM	1/29/01 1:00 PM	FELD 3509
2/5/2001	2/5/2001	Charlotte, NC	Raleigh, NC	175 miles	16.00	7.00	9.00	none	2/5/01 1:00 AM	2/5/01 7:00 AM	2/5/01 2:00 PM	2/5/01 5:00 PM	FELD 3468
2/13/2001	2/14/2001	Raleigh, NC	Atlanta, GA	421 miles	20.00	18.00	2.48	2/14/01 9:15 AM - water animals	2/13/01 3:00 PM	2/13/01 9:00 PM	2/14/01 3:30 PM	2/14/01 11:59 AM	FELD 3883
2/26/2001	2/27/2001	Atlanta, GA	Cincinnati, OH	479 miles	30.00	21.00	8.50	2/26/01 12:30 PM - water animals	2/26/01 2:00 AM	2/26/01 6:30 AM	2/27/01 4:30 AM	2/27/01 9:00 AM	FELD 3397
3/5/2001	3/6/2001	Cincinnati, OH	Baltimore, MD	690 miles	39.00	30.00	8.00	3/5/01 11:30 AM - water animals	3/5/01 12:01 AM	3/5/01 6:30 AM	3/6/01 1:30 PM	3/6/01 3:30 PM	FELD 3488
3/19/2001	3/19/2001	Baltimore, MD	Washington, DC	35 miles	11.00	3.00	7.00	none	3/19/01 12:01 AM	3/19/01 6:30 AM	3/19/01 10:30 AM	3/19/01 11:30 AM	FELD 3424
4/17/2001	4/18/2001	Washington, DC	Charleston, WV	443 miles	31.00	22.00	8.00	4/17/01 2:00 PM - water animals	4/17/01 12:01 AM	4/17/01 6:30 AM	4/18/01 5:30 AM	4/18/01 7:30 AM	FELD 4055
4/23/2001	4/23/2001	Charleston, WV	Roanoke, VA	288 miles	23.00	15.00	6.98	4/23/01 1:30PM - water animals	4/23/01 12:01 AM	4/23/01 6:00 AM	4/23/01 10:00 PM	4/23/01 11:59 PM	FELD 3462
4/30/2001	5/1/2001	Roanoke, VA	Columbus, OH	408 miles	32.00	24.00	7.50	4/30/01 2:30 PM - water animals	4/30/01 12:01 AM	4/30/01 6:00 AM	5/1/01 6:00 AM	5/1/01 8:30 AM	FELD 3905
5/7/2001	5/8/2001	Columbus, OH	Springfield, IL	432 miles	29.00	21.00	7.00	5/7/01 4:00 PM - water animals	5/7/01 12:01 AM	5/7/01 6:00 AM	5/8/01 3:30 AM	5/8/01 5:30 AM	FELD 3520
5/11/2001	5/11/2001	Springfield, IL	Peoria, IL	59 miles	12.00	3.00	9.00	none	5/11/01 1:00 AM	5/11/01 8:00 AM	5/11/01 11:00 AM	5/11/01 1:00 PM	FELD 3983
5/14/2001	5/14/2001	Peoria, IL	Rockford, IL	245 miles	18.00	11.00	6.50	5/14/01 11:15 AM - water animals	5/14/2001 12:01 AM	5/14/2001 5:30 AM	5/14/2001 5:15 PM	5/14/2001 6:45 PM	FELD 3840
5/17/2001	5/17/2001	Rockford, IL	Madison, WI	81 miles	17.00	11.00	6.00	none	5/17/2001 1:00 AM	5/17/2001 4:00 AM	5/17/2001 3:00 PM	5/17/2001 6:00 PM	FELD 3912
6/3/2001	6/5/2001	Madison, WI	Tulsa, OK	718 miles	45.00	36.00	8.00	6/4/01 2:00 PM - water animals	6/3/2001 8:00 AM	6/3/2001 3:00 PM	6/5/2001 3:00 AM	6/5/2001 5:00 AM	FELD 3733
6/11/2001	6/11/2001	Tulsa, OK	Little Rock, AR	346 miles	26.00	18.00	8.00	6/11/01 12:00 PM - water animals	6/10/2001 8:30 PM	6/11/2001 2:30 AM	6/11/2001 8:30 PM	6/11/2001 10:30 PM	FELD 4037
6/18/2001	6/18/2001	Little Rock, AR	Bossier City, LA	228 miles	22.00	8.00	13.50	none	6/17/2001 8:30 PM	6/18/2001 6:30 AM	6/18/2001 3:00 PM	6/18/2001 6:30 PM	FELD 3706
6/25/2001	6/26/2001	Bossier City, LA	Pensacola, FL	558 miles	36.00	27.00	9.00	6/25/01 12:45 PM - water animals	6/24/2001 8:00 PM	6/25/2001 2:00 AM	6/26/2001 6:00 AM	6/26/2001 9:00 AM	FELD 3436
7/1/2001	7/2/2001	Pensacola, FL	San Antonio, TX	900 miles	48.00	40.00	8.00	7/1/01 5:00 PM - water animals 7/2/01 2:00 PM - water animals	7/1/2001 12:01 AM	7/1/2001 6:30 AM	7/2/2001 11:00 PM	7/3/2001 1:00 AM	FELD 3837
7/9/2001	7/9/2001	San Antonia, TX	Houston, TX	188 miles	16.00	6.00	10.00	none	7/9/2001 12:01 AM	7/9/2001 8:00 AM	7/9/2001 2:00 PM	7/9/2001 5:00 PM	FELD 3942
7/23/2001	7/23/2001	Houston, TX	Waco, TX	184 miles	17.00	6.00	9.50	none	7/23/2001 1:00 AM	7/23/2001 7:30 AM	7/23/2001 2:30 PM	7/23/2001 6:00 PM	FELD 3641
7/30/2001	7/31/2001	Waco, TX	Dallas, TX	120 miles	10.00	6.00	3.98	none	7/30/2001 4:00 PM	7/30/2001 6:00 PM	7/31/2001 12:01 AM	7/31/2001 2:00 AM	FELD 4052
8/13/2001	8/13/2001	Dallas, TX	Fort Worth, TX	32 miles	10.00	2.00	7.50	none	8/13/2001 1:00 AM	8/13/2001 6:00 AM	8/13/2001 8:30 AM	8/13/2001 11:00 AM	FELD 3526
8/20/2001	8/21/2001	Ft. Worth, TX	Colorado Springs, CO	698 miles	39.00	32.00	7.00	8/20/01 11:00 AM - water animals 8/21/2001 11:00 AM - water animals	8/20/2001 12:01 AM	8/20/2001 6:30 AM	8/21/2001 3:00 PM	8/21/2001 4:00 PM	FELD 3581
8/27/2001	8/28/2001	Colorado Springs, CO	Moline, IL	963 miles	44.00	36.00	8.00	8/27/01 12:30 PM - water animals 8/28/2001 2:30 PM - water animals	8/27/2001 12:01 AM	8/27/2001 6:30 AM	8/28/2001 7:00 PM	8/28/2001 9:00 PM	FELD 3504
9/3/2001	9/3/2001	Moline, IL	Kansas City, MO	316 miles	16.00	8.00	7.00	none	9/3/2001 12:01 AM	9/3/2001 6:00 AM	9/3/2001 2:45 PM	9/3/2001 4:45 PM	FELD 3769
9/10/2001	9/11/2001	Kansas City, MO	Memphis, TN	438 miles	30.00	21.00	7.50	9/10/01 2:30 PM - water animals	9/10/2001 12:01 AM	9/10/2001 6:00 AM	9/11/2001 4:00 AM	9/11/2001 6:30 AM	FELD 3677

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
9/17/2001	9/18/2001	Memphis, TN	Indianapolis, IN	588 miles	33.00	25.00	7.00	9/17/01 12:30 PM - water animals	9/16/2001 10:00 PM	9/17/2001 3:30 AM	9/18/2001 5:00 AM	9/18/2001 7:00 AM	FELD 3736
9/24/2001	9/24/2001	Indianapolis, IN	Buffalo, NY	468 miles	23.00	14.00	8.50	9/24/01 3:00 PM - water animals	9/24/2001 12:01 AM	9/24/2001 6:00 AM	9/24/2001 8:00 PM	9/24/2001 11:30 PM	FELD 3649
10/1/2001	10/1/2001	Buffalo, NY	Detroit, MI	380 miles	24.00	15.00	9.00	none	9/30/2001 8:00 PM	10/1/2001 3:30 AM	10/1/2001 6:45 PM	10/1/2001 8:45 PM	FELD 3449
10/9/2001	10/10/2001	Detroit, MI	Boston, MA	912 miles	47.00	38.00	8.98	10/9/01 2:30 PM - water animals 10/10/01 11:00 AM - water animals	10/9/2001 12:01 AM	10/9/2001 6:30 AM	10/10/2001 9:00 PM	10/10/2001 11:59 PM	FELD 3545
10/22/2001	10/22/2001	Boston, MA	Bridgeport, CT	174 miles	23.00	16.00	6.98	none	10/22/2001 12:01 AM	10/22/2001 7:00 AM	10/22/2001 11:00 PM	10/22/2001 11:59 PM	FELD 3437
10/29/2001	10/29/2001	Bridgeport, CT	Portland, ME	280 miles	24.00	21.00	3.00	10/29/01 1:30 PM - water animals	10/29/2001 12:01 AM	10/29/2001 2:00 AM	10/29/2001 11:00 PM	10/30/2001 1:00 AM	FELD 3446
11/5/2001	11/6/2001	Portland, ME	Pittsburgh, PA	869 miles	44.00	37.00	7.00	11/05/01 10:30 AM - water animals	11/4/2001 9:00 PM	11/5/2001 2:00 AM	11/6/2001 3:15 PM	11/6/2001 5:15 PM	FELD 3870
11/12/2001	11/13/2001	Pittsburgh, PA	St. Louis, MO	623 miles	30.00	23.00	7.00	11/12/01 12:45 PM - water animals	11/12/2001 12:01 AM	11/12/2001 5:30 AM	11/13/2001 4:30 AM	11/13/2001 6:30 AM	FELD 3866
11/19/2001	11/22/2001	St. Louis, MI	Tampa, FL	1,550 miles	74.00	67.00	7.00	11/19/01 1:00 PM - water animals 11/20/01 12:30 PM - water animals 11/21/01 10:30 AM - water animals	11/19/2001 12:01 AM	11/19/2001 5:30 AM	11/22/2001 12:30 AM	11/22/2001 2:30 AM	FELD 3991
			Total # of hours on the train:		**1023**								
			Total # of days on the train:		**42.63**								
			Average # of hours on the train per trip:		**26.92**								

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
1/7/2002	1/7/2002	Tampa, FL	St. Petersburg, FL	47 miles	10.00	4.00	6.02	none	1/7/02 1:30 AM	1/7/02 6:30 AM	1/7/02 11:00 AM	1/7/02 12:01 PM	FELD 4017
1/14/2002	1/14/2002	St. Petersburg, FL	Orlando, FL	145 miles	18.00	15.00	3.00	1/14/02 8:00 AM - water animals	1/14/02 12:01 AM	1/14/02 1:30 AM	1/14/02 4:30 PM	1/14/02 6:30 PM	FELD 3997
1/21/2002	1/22/2002	Orlando, FL	Birmingham, AL	610 miles	37.00	28.00	8.00	1/21/02 1:00 PM - water animals	1/21/02 12:01 AM	1/21/02 6:30 AM	1/22/02 11:30 AM	1/22/02 1:30 PM	FELD 3826
1/28/2002	1/28/2002	Birhmingham, AL	Greenville, SC	318 miles	22.00	14.00	8.00	1/28/02 1:30 PM - water animals	1/28/02 12:01 AM	1/28/02 7:00 AM	1/28/02 9:00 PM	1/28/02 11:00 PM	FELD 3432
2/4/2002	2/4/2002	Greenville, SC	Greensboro, NC	203 miles	15.00	8.00	7.00	none	2/3/02 8:00 PM	2/4/02 1:30 AM	2/4/02 9:45 AM	2/4/02 11:45 AM	FELD 3604
2/11/2002	2/11/2002	Greensboro, NC	Norfolk, NC	333 miles	18.00	11.00	7.00	none	2/11/02 12:01 AM	2/11/02 5:30 AM	2/11/02 5:00 PM	2/11/02 7:00 PM	FELD 3597
2/18/2002	2/18/2002	Norfolk, VA	Richmond, VA	185 miles	15.00	9.00	6.50	2/18/02 10:45 AM - water animals	2/18/02 12:01 AM	2/18/02 5:30 AM	2/18/02 2:30 PM	2/18/02 4:00 PM	FELD 3803
2/25/2002	2/25/2002	Richmond, VA	Newport News, VA	200 miles	19.00	9.00	9.00	none	2/25/02 12:01 AM	2/25/02 7:30 AM	2/25/02 5:30 PM	2/25/02 7:30 PM	FELD 3897
3/4/2002	3/5/2002	Hampton, VA	East Rutherford, NJ	424 miles	34.00	12.00	22.00	3/4/02 5:30 PM - water animals	3/4/02 12:01 AM	3/4/02 5:30 PM	3/5/02 5:30 AM	3/5/02 10:30 AM	FELD 3612
3/11/2002	3/11/2002	East Rutherford, NJ	Uniondale, NY	40 miles	16.00	9.00	6.00	none	3/11/02 2:00 AM	3/11/02 6:30 AM	3/11/02 4:30 PM	3/11/02 6:30 PM	FELD 3550
3/19/2002	3/19/2002	Uniondale, NY	New York, NY	21 miles	22.00	11.00	10.00	none	3/19/02 1:00 AM	3/19/02 10:30 AM	3/19/02 10:00 PM	3/19/02 11:00 PM	FELD 4046
4/8/2002	4/9/2002	New York, NY	Atlantic City, NJ	143 miles	27.00	13.00	13.00	none	4/8/02 1:00 AM	4/8/02 11:00 AM	4/9/02 1:00 AM	4/9/02 4:00 AM	FELD 3786
4/15/2002	4/15/2002	Atlantic City, NJ	Philadelphia, PA	71 miles	22.00	16.00	5.00	none	4/15/02 12:01 AM	4/15/02 5:00 AM	4/15/02 10:00 PM	4/15/02 11:00 PM	FELD 3401
4/29/2002	4/30/2002	Philadelphia, PA	Providence, RI	428 miles	30.00	21.00	7.75	4/29/02 11:30 AM - water animals	4/29/02 12:01 AM	4/29/02 6:00 AM	4/30/02 3:45 AM	4/30/02 6:30 AM	FELD 3851
5/62002	5/6/2002	Providence, RI	Worcester, MA	112 miles	10.00	3.00	6.00	none	5/6/2002 12:01 AM	5/6/2002 6:00 AM	5/6/2002 10:00 AM	5/6/2002 11:00 AM	FELD 3881
5/13/2002	5/13/2002	Worchester, MA	Hartford, CT	80 miles	12.00	5.00	6.00	none	5/12/2002 9:00 PM	5/13/2002 1:00 AM	5/13/2002 6:30 AM	5/13/2002 9:30 AM	FELD 4075
5/20/2002	5/21/2002	Hartford, CT	Hershey, PA	425 miles	33.00	27.00	5.25	5/20/02 12:30 PM - water animals	5/20/2002 12:01 AM	5/20/2002 5:00 AM	5/21/2002 8:45 AM	5/21/2002 10:00 AM	FELD 3624
5/28/2002	5/28/2002	Hershey, PA	Trenton, NJ	123 miles	23.00	20.00	2.50	none	5/28/2002 12:01 AM	5/28/2002 1:00 AM	5/28/2002 9:00 PM	5/28/2002 11:30 PM	FELD 3633
6/3/2002	6/3/2002	Trenton, NJ	Wilkes-Barre, PA	235 miles	20.00	12.00	7.00	6/3/02 1:00 PM - water animals	6/3/2002 12:01 AM	6/3/2002 6:00 AM	6/3/2002 7:00 PM	6/3/2002 9:00 PM	FELD 4028
6/10/2002	6/13/2002	Wilkes-Barre, PA	Oklahoma City, OK	1629 miles	71.00	64.00	7.00	6/10/02 2:30 PM - water animals **6/11/02 9:00 AM - REST ANIMALS*** 6/11/02 5:00 PM - water animals 6/12/02 2:00PM - water animals	6/10/2002 12:01 AM	6/10/2002 5:00 AM	6/13/2002 4:00 AM	6/13/2002 6:00 AM	FELD 4073
6/17/2002	6/19/2002	Oklahoma City, OK	Las Vegas, NV	1,647 miles	62.00	54.00	8.00	6/17/02 11:15 AM - water animals 6/17/02 8:30 PM - water animals **6/18/02 5:30 AM - REST ANIMALS**** 6/18/02 6:30 PM - water animals 6/19/02 4:15 AM - water animals	6/17/2002 12:01 AM	6/17/2002 5:30 AM	6/19/2002 6:00 PM	6/19/2002 9:00 PM	FELD 3815
6/24/2002	6/25/2002	Las Vegas, NV	Tucson, AZ	710 miles	33.00	25.00	8.00	6/24/02 3:00 PM - water animals	6/24/2002 12:01 AM	6/24/2002 6:30 AM	6/25/2002 8:00 AM	6/25/2002 10:00 AM	FELD 3697
7/1/2002	7/1/2002	Tucson, AZ	Phoenix, AZ	120 miles	6.00	4.00	1.00	none	6/30/2002 10:00 PM	6/30/2002 11:59 PM	7/1/2002 4:00 AM	7/1/2002 4:00 AM	FELD 4033
7/8/2002	7/9/2002	Phoenix,AZ	Fresno, CA	679 miles	34.00	27.00	7.00	7/8/02 1:45 PM - water animals	7/8/2002 1:00 AM	7/8/2002 6:30 AM	7/9/2002 9:30 AM	7/9/2002 11:30 AM	FELD 3856
7/15/2002	7/15/2002	Fresno, CA	Los Angeles, CA	299 miles	23.00	15.00	6.52	7/15/02 11:30 AM - water animals	7/15/2002 1:00 AM	7/15/2002 6:30 AM	7/15/2002 10:30 PM	7/16/2002 12:01 AM	FELD 3571
7/21/2002	7/22/2002	Los Angeles, CA	Anaheim, CA	21 miles	10.00	1.00	8.00	none	7/22/2002 1:00 AM	7/22/2002 7:30 AM	7/22/2002 9:00 AM	7/22/2002 11:00 AM	FELD 3724
8/5/2002	8/5/2002	Anaheim, CA	San Diego, CA	103 miles	16.00	3.00	13.00	none	8/5/2002 6:00 AM	8/5/2002 6:00 PM	8/5/2002 9:30 PM	8/5/2002 10:30 PM	FELD 3388
8/12/2002	8/13/2002	San Diego, CA	Oakland, CA	702 miles	38.00	24.00	13.00	8/12/02 2:30 PM - water animals 8/13/2002 6:15 AM - water animals	8/12/2002 1:00 AM	8/12/2002 10:15 AM	8/13/2002 11:00 AM	8/13/2002 3:00 PM	FELD 3951

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
8/19/2002	8/19/2002	Oakland, CA	San Jose, CA	42 miles	11.00	3.00	7.00	none	8/19/2002 12:01 AM	8/19/2002 6:00 AM	8/19/2002 9:30 AM	8/19/2002 11:30 AM	FELD 3813
8/25/2002	8/26/2002	San Jose, CA	San Francisco, CA	48 miles	4.00	1.00	2.00	none	8/26/2002 1:00 AM	8/26/2002 2:45 AM	8/26/2002 4:45 AM	8/26/2002 5:45 AM	FELD 3967
9/3/2002	9/3/2002	San Francisco, CA	Sacramento, CA	187 miles	16.00	9.00	7.00	none	9/2/2002 8:00 PM	9/3/2002 2:30 AM	9/3/2002 12:00 PM	9/3/2002 1:00 PM	FELD 3959
9/9/2002	9/10/2002	Sacramenta, CA	Tacoma, WA	850 miles	47.00	39.00	7.00	9/9/02 11:40 AM - water animals 9/10/02 3:30 AM - water animals 9/10/02 11:30 AM - water animals	9/9/2002 12:01 AM	9/9/2002 6:00 AM	9/10/2002 9:30 PM	9/10/2002 11:30 PM	FELD 3928
9/16/2002	9/17/2002	Tacoma, WA	Nampa, ID	633 miles	39.00	30.00	8.00	9/16/02 12:01 PM - water animals 9/16/02 9:30 PM - water animals	9/16/2002 12:01 AM	9/16/2002 6:30 AM	9/17/2002 1:30 PM	9/17/2002 3:30 PM	FELD 4008
9/23/2002	9/23/2002	Nampa, ID	Salt Lake City, UT	424 miles	22.00	14.00	7.25	9/23/02 12:15 PM - water animals	9/23/2002 12:01 AM	9/23/2002 6:00 AM	9/23/2002 8:00 PM	9/23/2002 10:15 PM	FELD 3776
MISSING		**Salt Lake City, UT**	**Colorado Springs, CO**										
10/7/2002	10/7/2002	Colorado Springs, CO	Denver, CO	73 miles	11.00	3.00	7.50	none	10/7/2002 12:01 AM	10/7/2002 6:00 AM	10/7/2002 9:00 AM	10/7/2002 11:30 AM	FELD 3503
10/21/2002	10/23/2002	Denver, CO	Cleveland, OH	1,448 miles	69.00	60.00	9.00	10/21/02 1:00 PM - water animals 10/22/02 12:01 PM - water animals 10/23/02 2:00 PM - water animals	10/21/2002 12:01 AM	10/21/2002 7:30 AM	10/23/2002 7:30 PM	10/23/2002 9:30 PM	FELD 3537
11/4/2002	11/5/2002	Cleveland, OH	Rosemont, IL	357 miles	27.00	19.00	7.00	11/4/02 2:45 PM - water animals	11/4/2002 12:01 AM	11/4/2002 6:00 AM	11/5/2002 1:30 AM	11/5/2002 3:30 AM	FELD 3498
11/17/2002	11/18/2002	Rosemont, IL	Chicago, IL	19 miles	16	4.00	12.50	none	11/17/2002 8:30 PM	11/18/2002 8:30 AM	11/18/2002 12:30 PM	11/18/2002 1:00 PM	FELD 3918
12/2/2002	12/4/2002	Chicago, IL	Savannah, GA	1,118 miles	52	47.00	5.00	12/2/02 11:00 AM - water animals 12/3/02 6:45 AM - water animals 12/3/02 1:45 PM - water animals	12/2/2002 12:01 AM	12/2/2002 2:30 AM	12/4/2002 2:00 AM	12/4/2002 5:00 AM	FELD 3482
12/9/2002	12/9/2002	Savannah, GA	Orlando, FL	301 miles	19.00	11.00	7.50	none	12/9/2002 12:01 AM	12/9/2002 5:00 AM	12/9/2002 4:30 PM	12/9/2002 8:00 PM	FELD 3970
12/29/2002	12/30/2002	Orlando, FL	Miami, FL	266 miles	21.00	12.00	8.00	none	12/29/2002 7:00 AM	12/29/2002 12:01 PM	12/30/2002 1:00 AM	12/30/2002 4:00 AM	FELD 3834
* The animals were off the train for 6 hours. The number of hours in the total time on the train column is not consecutive. The elephants were on the train for approx. 21 hours prior to the rest and 47 hours after the rest.													
** The animals were off the train for 6 hours. The number of hours in the total time on the train column is not consecutive. The elephants were on the train for approx. 29.5 hours prior to the rest and 30.5 hours after the rest.													
		Total # of hours on the train:			**1050**								
		Total # of days on the train:			**43.75**								
		Average # of hours on the train per trip:			**25.61**								

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
1/6/2003	1/6/2003	Ft. Lauderdale, FL	Miami, Fl	27 miles	6.00	4.00	1.50	none	1/6/03 2:00 AM	1/6/03 3:30 AM	1/6/03 8:30 AM	1/6/03 9:00 AM	FELD 4006
1/13/2003	1/13/2003	Miami, FL	Jacksonville, FL	368 miles	19.00	11.00	7.50	1/13/03 12:01 PM - water animals	1/13/03 12:01 AM	1/13/03 6:00 AM	1/13/03 5:00 PM	1/13/03 7:30 PM	FELD 3760
1/21/2003	1/21/2003	Jacksonville, FL	Columbia, SC	287 miles	18.00	9.00	7.50	1/21/03 10:00 AM - water animals	1/21/03 12:01 AM	1/21/03 6:00 AM	1/21/03 4:00 PM	1/21/03 6:30 PM	FELD 3668
1/27/2003	1/27/2003	Colimbia, SC	Charlotte, NC	108 miles	14.00	4.00	9.50	none	1/27/03 12:01 AM	1/27/03 6:30 AM	1/27/03 11:00 AM	1/27/03 2:30 PM	FELD 3511
2/3/2003	2/3/2003	Charlotte, NC	Raleigh, NC	128 miles	15.00	5.00	8.75	none	2/3/03 1:00 AM	2/3/03 7:30 AM	2/3/03 1:15 PM	2/3/03 4:00 PM	FELD 3470
2/10/2003	2/11/2003	Raleigh, NC	Cincinnati, OH	720 miles	35.00	27.00	8.00	2/10/03 3:30 PM - water animals	2/10/03 12:01 AM	2/10/03 5:30 AM	2/11/03 8:30 AM	2/11/03 11:30 AM	FELD 3889
2/17/2003	2/17/2003	Cincinnati, OH	Atlanta, GA	480 miles	25.00	16.00	9.00	2/17/03 12:01 PM - water animals	2/17/03 12:01 AM	2/17/03 7:00 AM	2/17/03 11:00 PM	2/18/03 2:00 AM	FELD 3483
3/3/2003	3/3/2003	Atlanta, GA	Knoxville, TN	237 miles	18.00	9.00	9.00	3/3/03 12:15 PM - water animals	3/3/03 12:01 AM	3/3/03 7:17 AM	3/3/03 5:00 PM	3/3/03 7:00 PM	FELD 3400
3/10/2003	3/11/2003	Knoxville, TN	Baltimore, MD	590 miles	31.00	23.00	7.00	3/10/03 11:45 AM - water animals	3/10/03 12:30 AM	3/10/03 6:00 AM	3/11/03 5:45 AM	3/11/03 7:45 AM	FELD 3679
3/24/2003*	3/24/2003	Baltimore, MD	Fairfax, VA	65 miles	25.00	14.00	11.00	none	3/23/03 9:00 PM	3/24/03 8:00 AM	3/24/03 10:30 PM	3/24/03 10:30 PM	FELD 3419
4/7/2003	4/7/2003	Fairfax, VA	Washington, DC	20 miles	9.00	2.00	6.75	none	4/6/03 11:00 PM	4/7/03 3:15 AM	4/7/03 5:15 AM	4/7/03 8:00 AM	FELD 3559
4/21/2003	4/23/2003	Washington, DC	Charleston, WV	453 miles	33.00	22.00	10.00	4/22/03 5:15 PM - water animals	4/21/03 8:00 PM	4/22/03 3:00 AM	4/23/03 1:30 AM	4/23/03 5:30 AM	FELD 4056
4/28/2003	4/28/2003	Charelstown, WV	Columbus, OH	214 miles	14.00	8.00	6.25	none	4/28/03 12:01 AM	4/28/03 5:30 AM	4/28/03 1:45 PM	4/28/03 3:00 PM	FELD 3457
5/5/2003	5/7/2003	Columbus, OH	San Antonio, TX	1,403 miles	59.00	50.00	9.00	5/5/03 1:00 PM - water animals 5/6/03 10:00 AM - water animals	5/5/03 12:01 AM	5/5/03 7:00 AM	5/7/03 9:00 AM	5/7/03 12:00 PM	FELD 3519
5/8/2003	5/10/2003	San Antonio, TX	Mexico	898 miles	52.00	51.00	0.77		5/8/2003 8:00 PM	5/8/2003 8:00 PM	5/10/2003 11:15 PM	5/11/2003 12:01 AM	FELD 3943
6/9/2003	6/11/2003	Mexico	Laredo, TX	982 miles	47.00	42.00	5.00	6/10/03 5:00 AM - water animals	6/9/2003 4:00 AM	6/9/2003 8:00 AM	6/11/2003 2:00 AM	6/11/2003 3:00 AM	FELD 3753
6/16/2003	6/17/2003	Laredo, TX	Lafayette, LA	548 miles	29.00	21.00	7.50	6/16/03 2:30 PM - water animals	6/16/2003 2:00 AM	6/16/2003 7:30 AM	6/17/2003 5:00 AM	6/17/2003 7:30 AM	FELD 3692
6/23/2003	6/24/2003	Lafayette, LA	Austin, TX	411 miles	27.00	19.00	7.00	6/23/03 10:30 AM - water animals	6/23/2003 12:01 AM	6/23/2003 5:00 AM	6/24/2003 1:00 AM	6/24/2003 4:00 AM	FELD 3686
6/30/2003	6/30/2003	Austin, TX	San Antonio, TX	82 miles	15.00	6.00	9.50	none	6/29/2003 8:00 PM	6/30/2003 2:00 AM	6/30/2003 8:00 AM	6/30/2003 11:30 AM	FELD 3413
7/8/2003	7/8/2003	San Antonio, TX	Houston, TX	188 miles	14.00	10.00	3.98	none	7/8/2003 9:30 AM	7/8/2003 10:00 AM	7/8/2003 8:00 PM	7/8/2003 11:59 PM	FELD 3936
7/21/2003	7/21/2003	Houston, TX	New Orleans, LA	357 miles	27.00	16.00	10.00	7/21/03 6:00 PM - water animals	7/21/2003 1:00 AM	7/21/2003 6:30 AM	7/21/2003 11:00 PM	7/22/2003 4:00 AM	FELD 3623
7/28/2003	7/29/2003	New Orleans, LA	Dallas, TX	627 miles	33.00	26.00	6.00	7/28/03 11:00 AM - water animals	7/28/2003 12:01 AM	7/28/2003 5:00 AM	7/29/2003 7:30 AM	7/29/2003 9:30 AM	FELD 3782
8/11/2003	8/11/2003	Dallas, TX	Ft. Worth, TX	32 miles	10.00	2.00	7.50	none	8/11/2003 1:00 AM	8/11/2003 6:00 AM	8/11/2003 8:30 AM	8/11/2003 11:00 AM	FELD 3527
8/18/2003	8/18/2003	Ft. Worth, TX	Newton, KS	415 miles	21.00	15.00	5.50	8/18/03 2:45 PM - water animals	8/18/2003 12:01 AM	8/18/2003 5:00 AM	8/18/2003 8:00 PM	8/18/2003 9:30 PM	FELD 3586
8/25/2003	8/25/2003	Newton, KS	Moline, IL	548 miles	27.00	20.00	6.48	8/25/03 11:15 AM - water animals	8/24/2003 8:00 PM	8/25/2003 1:00 AM	8/25/2003 9:30 PM	8/25/2003 11:59 PM	FELD 3795
9/2/2003	9/2/2003	Moline, IL	Peoria, IL	100 miles	13.00	6.00	6.50	none	9/1/2003 8:00 PM	9/2/2003 1:00 AM	9/2/2003 7:00 AM	9/2/2003 9:30 AM	FELD 3771

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
9/8/2003	9/8/2003	Peoria, IL	Kansas City, MO	360 miles	22.00	15.00	6.00	9/8/03 11:00 AM - water animals	9/8/2003 12:01 AM	9/8/2003 5:00 AM	9/8/2003 9:00 PM	9/8/2003 11:00 PM	FELD 3839
9/15/2003	9/16/2003	Kansas City, MO	Indianapolis, IN	554 miles	29.00	22.00	7.25	9/15/03 11:00 AM - water animals	9/15/2003 12:01 AM	9/15/2003 5:30 AM	9/16/2003 3:45 AM	9/16/2003 6:00 AM	FELD 3675
9/22/2003	9/22/2003	Indianapolis, IN	Grand Rapids, MI	282 miles	21.00	15.00	6.00	9/22/03 1:00 PM - water animals	9/22/2003 12:01 AM	9/22/2003 4:30 AM	9/22/2003 8:00 PM	9/22/2003 10:00 PM	FELD 3656
9/29/2003	9/29/2003	Grand Rapids, MI	Auburn Hills, MI	181 miles	17.00	10.00	7.00	none	9/28/2003 9:00 PM	9/29/2003 2:00 AM	9/29/2003 12:30 PM	9/29/2003 2:30 PM	FELD 3588
10/7/2003	10/8/2003	Auburn Hills, MI	Boston, MA	943 miles	72.00	40.00	31.00	10/7/03 1:15 PM - water animals 10/8/03 10:00 AM - water animals	10/5/2003 11:00 PM	10/7/2003 3:30 AM	10/8/2003 8:00 PM	10/8/2003 11:00 PM	FELD 3404
10/20/2003	10/20/2003	Boston, MA	Manchester, NH	113 miles	19.00	12.00	6.00	10/20/03 1:15 PM - water animals	10/20/2003 12:01 AM	10/20/2003 6:00 AM	10/20/2003 7:00 PM	10/20/2003 8:00 PM	FELD 3440
10/27/2003	10/27/2003	Manchester, NW	Bridgeport, CT	233 miles	24.00	19.00	4.02	10/27/03 12:15 PM - water animals	10/27/2003 12:01 AM	10/27/2003 3:30 AM	10/27/2003 11:00 PM	10/28/2003 12:01 AM	FELD 3734
11/3/2003	11/4/2003	Bridgeport, CT	Pittsburgh, PA	750 miles	38.00	33.00	4.00	11/3/03 2:45 PM - water animals 11/4/03 8:30 AM - water animals	11/3/2003 12:01 AM	11/3/2003 1:00 AM	11/4/2003 10:45 AM	11/4/2003 2:45 PM	FELD 3445
11/10/2003	11/11/2003	Pittsburgh, PA	St. Louis, MO	662 miles	34.00	28.00	5.00	11/10/03 2:00 PM - water animals	11/10/2003 12:01 AM	11/10/2003 4:00 AM	11/11/2003 8:30 AM	11/11/2003 10:30 AM	FELD 3869
11/17/2003	11/19/2003	St. Louis, MO	Tampa, FL	1,280 miles	70.00	61.00	9.00	11/17/03 12:01 PM - water animals 11/17/03 1:00 PM - water if needed 11/18/03 8:30 AM - water animals 11/19/03 9:15 AM - water animals	11/17/2003 12:01 AM	11/17/2003 4:30 AM	11/19/2003 6:00 PM	11/19/2003 11:00 PM	FELD 3993
12/29/2003	12/29/2003	Tampa, FL	Orlando, FL	97 miles	21.00	4.00	17.00	none	12/29/2003 12:01 AM	12/29/2003 2:30 PM	12/29/2003 7:00 PM	12/29/2003 10:00 PM	FELD 4013
			Total # of hours on the train:		**1003**								
			Total # of days on the train:		**41.79**								
			Average # of hours on the train per trip:		**27.11**								

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
1/5/2004	1/5/2004	Orlando, FL	Tampa, FL	97 miles	12.00	4.00	7.50	none	1/5/2004 12:01 AM	1/5/2004 6:00 AM	1/5/2004 10:30 AM	1/5/2004 1:00 PM	FELD 3835
1/12/2004	1/12/2004	Tampa, FL	Jacksonville, FL	247 miles	16.00	6.00	9.00	none	1/12/2004 12:01 AM	1/12/2004 6:00 AM	1/12/2004 1:00 PM	1/12/2004 5:00 PM	FELD 4010
1/19/2004	1/20/2004	Jacksonville, FL	Birgham, AL	469 miles	31.00	21.00	9.00	1/19/04 6:15 PM - Water animals	1/19/2004 12:01 AM	1/19/2004 6:00 AM	1/20/2004 4:00 AM	1/20/2004 8:00 AM	FELD 3664
1/26/2004	1/26/2004	Birgham, AL	Greenville, SC	318 miles	22.00	14.00	8.00	1/26/04 1:30 PM - Water animals	1/26/2004 12:01 AM	1/26/2004 7:00 AM	1/26/2004 9:00 PM	1/26/2004 11:00 PM	FELD 3435
2/2/2004	2/2/2004	Greenville, SC	Greensboro, NC	203 miles	17.00	8.00	9.00	none	2/2/2004 12:01 AM	2/2/2004 7:30 AM	2/2/2004 3:45 PM	2/2/2004 5:45 PM	FELD 3606
2/9/2004	2/9/2004	Greensboro, NC	Richmond, VA	227 miles	15.00	8.00	7.00	none	2/9/2004 12:01 AM	2/9/2004 5:30 AM	2/9/2004 1:30 PM	2/9/2004 3:30 PM	FELD 3602
2/17/2004	2/17/2004	Richmond, VA	Norfolk, VA	185 miles	18.00	9.00	8.00	none	2/16/2004 11:00 PM	2/17/2004 4:30 AM	2/17/2004 2:00 PM	2/17/2004 5:00 PM	FELD 3903
2/23/2004	2/23/2004	Norfolk, VA	Hampton, VA	183 miles	18.00	11.00	7.00	2/23/04 12:30 PM - Water animals	2/23/2004 12:01 AM	2/23/2004 6:00 AM	2/23/2004 5:00 PM	2/23/2004 7:00 PM	FELD 3801
3/1/2004	3/2/2004	Hampton, VA	East Rutherford, NJ	424 miles	34.00	22.00	11.00	3/1/04 5:30 PM - Water animals	3/1/2004 12:01 AM	3/1/2004 6:00 AM	3/2/2004 4:30 AM	3/2/2004 10:30 AM	FELD 3615
3/8/2004	3/8/2004	East Rutherford, NJ	Uniondale, NY	40 miles	16.00	9.00	6.00	none	3/8/2004 2:00 AM	3/8/2004 6:30 AM	3/8/2004 4:30 PM	3/8/2004 6:30 PM	FELD 3554
3/16/2004	3/16/2004	Uniondale, NY	New York, NY	21 miles	12.00	2.00	10.00	none	3/16/2004 1:00 AM	3/16/2004 10:10 AM	3/16/2004 12:15 PM	3/16/2004 1:15 PM	FELD 4050
4/12/2004	4/12/2004	New York, NY	Philadelphia, PA	88 miles	44.00	9.00	35.50	none	4/11/2004 2:00 AM	4/12/2004 11:00 AM	4/12/2004 8:00 PM	4/12/2004 10:30 PM	FELD 3792
4/26/2004	4/26/2004	Philadelphia, PA	Atlantic City, NJ	65 miles	14.00	9.00	4.50	none	4/26/2004 12:01 AM	4/26/2004 5:00 AM	4/26/2004 2:00 PM	4/26/2004 2:30 PM	FELD 3842
5/3/2004	5/4/2004	Atlantic, NJ	Providence, RI	508 miles	36.00	31.00	4.00	5/3/04 11:00 AM - water animals 5/4/04 11:45 AM - water animals	5/3/2004 7:00 AM	5/3/2004 8:30 AM	5/4/2004 4:00 PM	5/4/2004 7:00 PM	FELD 3402
5/10/2004	5/10/2004	Providence, RI	Hartford, CT	116 miles	17.00	11.00	6.00	5/10/04 1:00 PM - water animals	5/10/2004 12:01 AM	5/10/2004 4:30 AM	5/10/2004 4:00 PM	5/10/2004 6:00 PM	FELD 3874
5/17/2004	5/17/2004	Hartford, CT	Rochester, NY	371 miles	24.00	15.00	8.50	5/17/04 12:30 PM - water animals	5/17/2004 1:00 AM	5/17/2004 6:00 AM	5/17/2004 10:00 PM	5/18/2004 1:30 AM	FELD 3626
5/24/2004	5/25/2004	Rochester, NY	Hershey, PA	480 miles	25.00	19.00	6.00	5/24/04 3:30 PM - water animals	5/24/2004 1:30 AM	5/24/2004 6:30 AM	5/25/2004 2:00 AM	5/25/2004 3:00 AM	FELD 3909
6/1/2004	6/1/2004	Hershey, PA	Trenton, NJ	123 miles	25.00	21.00	3.50	none	6/1/2004 12:01 AM	6/1/2004 1:00 AM	6/1/2004 10:00 PM	6/2/2004 1:30 AM	FELD 3635
6/7/2004	6/7/2004	Trenton, NJ	Wilkes-Barre, PA	235 miles	20.00	12.00	7.00	6/7/04 1:00 PM - water animals	6/7/2004 12:01 AM	6/7/2004 6:00 AM	6/7/2004 7:00 PM	6/7/2004 9:00 PM	FELD 4030
6/14/2004	6/17/2004	Wilkes-Barre, PA	Wichita Falls, TX	1,961 miles	76.00	69.00	6.73	6/14/04 2:30 PM - water animals **6/15/04 9:00 AM - REST ANIMALS**** 6/15/04 9:00 AM - water animals 6/16/04 12:01 PM - water animals	6/14/2004 12:01 AM	6/14/2004 5:00 AM	6/17/2004 9:15 AM	6/17/2004 11:59 AM	FELD 4065

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
6/21/2004	6/22/2004	Wichita Falls, TX	Tucson, AZ	860 miles	44.00	36.00	8.00	6/21/04 2:30 PM - water animals 6/22/04 6:30 AM - water animals	6/21/2004 12:01 AM	6/21/2004 6:00 AM	6/22/2004 6:00 PM	6/22/2004 9:00 PM	FELD 4064
6/28/2004	6/28/2004	Tucson, AZ	Phoeniz, AZ	120 miles	9.00	5.00	4.00	none	6/28/2004 8:30 PM	6/28/2004 10:30 PM	6/29/2004 3:30 AM	6/29/2004 5:30 AM	FEI 48692
7/12/2004	7/13/2004	Poenix, AZ	Fresno, CA	608 miles	31.00	22.00	8.00	7/12/04 1:15 PM - water animals 7/12/04 6:15 PM - water animals	7/12/2004 12:01 AM	7/12/2004 7:00 AM	7/13/2004 5:15 AM	7/13/2004 7:15 AM	FEI 48691
7/19/2004	7/19/2004	Fresno, CA	Los Angeles, CA	371 miles	46.00	17.00	29.50	7/19/04 1:45 PM - water animals	7/19/2004 12:01 AM	7/19/2004 4:30 AM	7/19/2004 9:30 PM	7/20/2004 11:00 PM	FEI 48689
7/26/2004	7/26/2004	Los Angeles, CA	Anaheim, CA	21 miles	13.00	3.00	9.00	none	7/26/2004 1:00 AM	7/26/2004 7:30 AM	7/26/2004 11:00 AM	7/26/2004 2:00 PM	FEI 48687
8/9/2004	8/9/2004	Anaheim, CA	San Diego, CA	103 miles	17.00	6.00	10.00	none	8/9/2004 5:00 AM	8/9/2004 3:00 PM	8/9/2004 9:30 PM	8/9/2004 10:30 PM	FEI 48685
8/16/2004	8/17/2004	San Diego, CA	Oakland, CA	702 miles	38.00	24.00	13.00	8/16/04 2:30 PM - water animals 8/17/04 6:15 AM - water animals	8/16/2004 1:00 AM	8/16/2004 10:15 AM	8/17/2004 11:00 AM	8/17/2004 3:00 PM	FEI 48683
8/23/2004	8/23/2004	Oakland, CA	San Jose, CA	42 miles	11.00	3.00	7.00	none	8/23/2004 12:01 AM	8/23/2004 6:00 AM	8/23/2004 9:30 AM	8/23/2004 11:30 AM	FEI 48681
8/30/2004	8/30/2004	San Jose, CA	San Francisco, CA	48 miles	12.00	2.00	9.00	none	8/30/2004 12:01 AM	8/30/2004 9:00 AM	8/30/2004 11:30 AM	8/30/2004 12:30 PM	FEI 48679
9/7/2004	9/7/2004	San Fransico, CA	Sacramento, CA	187 miles	16.00	9.00	7.00	none	9/6/2004 8:00 PM	9/7/2004 2:30 AM	9/7/2004 12:00 PM	9/7/2004 1:00 PM	FEI 48677
9/13/2004	9/15/2004	Sacramento, CA	Everett, WA	927 miles	58.00	51.00	6.75	9/13/04 1:30 PM - water animals 9/14/04 8:00 AM - water animals	9/13/2004 12:01 AM	9/13/2004 5:00 AM	9/15/2004 8:15 AM	9/15/2004 11:00 AM	FELD 3921
9/20/2004	9/20/2004	Everett, WA	Portland, OR	208 miles	18.00	9.00	8.00	none	9/20/2004 12:01 AM	9/20/2004 6:00 AM	9/20/2004 4:00 PM	9/20/2004 7:00 PM	FEI 48673
9/27/2004	9/28/2004	Portland, OR	Salt Lake City, UT	1,083 miles	49.00	40.00	9.00	9/27/04 1:45 PM - water animals 9/28/094 2:00 PM - water animals	9/27/2004 12:01 AM	9/27/2004 6:30 AM	9/28/2004 11:00 PM	9/29/2004 2:00 AM	FEI 48671
10/4/2004	10/5/2004	Salt Lake City, UT	Denver, CO	570 miles	30.00	20.00	8.75	10/4/04 1:30 PM - water animals	10/4/2004 12:01 AM	10/4/2004 6:00 AM	10/5/2004 2:45 AM	10/5/2004 6:30 AM	FEI 48669
10/18/2004	10/21/2002	Denver, CO	Cleveland, OH	1,448 miles	68.00	60.00	8.00	10/18/04 12:00 PM - water animals **10/19/04 11:15 AM - REST ANIMALS*** 10/20/04 10:00 PM - water animals	10/18/2004 12:01 AM	10/18/2004 6:30 AM	10/21/2004 2:00 AM	10/21/2004 4:00 AM	FEI 48667
11/1/2004	11/2/2004	Cleveland, OH	Rosemont, IL	357 miles	29.00	20.00	9.00	11/1/04 2:45 PM - water animals	10/31/2004 10:00 PM	11/1/2004 5:00 AM	11/2/2004 1:30 AM	11/2/2004 3:30 AM	FEI 48666
11/14/2004	11/15/2004	Rosemont, IL	Chicago, IL	19 miles	12.00	0.00	11.00	none	11/14/2004 8:30 PM	11/15/2004 8:00 AM	11/15/2004 9:00 AM	11/15/2004 9:00 AM	FEI 48665
11/29/2004	11/30/2004	Chicago, IL	Columbus, OH	394 miles	27.00	22.00	5.00	11/29/04 12:30 PM - water animals	11/29/2004 12:01 AM	11/29/2004 2:30 AM	11/30/2004 1:00 AM	11/30/2004 4:00 AM	FEI 48664
12/6/2004	12/8/2004	Columbus, OH	Orlando, FL	1,240 miles	53.00	44.00	9.00	12/6/04 11:00 AM - water animals 12/7/04 4:00 PM - water animals	12/6/2004 12:01 AM	12/6/2004 5:30 AM	12/8/2004 1:30 AM	12/8/2004 5:30 AM	FEI 48662-63

* The animals were off the train for 7 hours. The number of hours in the total time on the train column is not consecutive. The elephants were on the train for approx. 35 hours prior to the rest and 34 hours after the rest.

** The animals were off the train for 7 hours. The number of hours in the total time on the train column is not consecutive. The elephants were on the train for approx. 33 hours prior to the rest and 44 hours after the rest.

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
			Total # of hours on the train:		1073								
			Total # of days on the train:		44.71								
			Average # of hours on the train per trip:		27.51								

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
1/2/2005	1/2/2005	Orlando, FL	Miami, FL	237 miles	20.00	13.00	7.00	none	1/2/05 12:01 AM	1/2/05 3:30 AM	1/2/05 5:00 PM	1/2/05 9:00 PM	FEI 48826
1/18/2005	1/19/2005	Miami, FL	Columbia, SC	645 miles	34.00	25.00	8.00	1/18/05 4:00 PM - water animals	1/18/05 12:01 AM	1/18/05 6:00 AM	1/19/05 7:30 AM	1/19/05 10:30 AM	FEI 48825
1/24/2005	1/25/2005	Columbia, SC	Nashville, TN	540 miles	29.00	21.00	7.50	1/24/05 3:30 PM - water animals	1/24/05 12:01 AM	1/24/05 6:00 AM	1/25/05 3:00 AM	1/25/05 5:30 AM	FEI 48824
1/31/2005	2/1/2005	Nashville, TN	Charlotte, NC	540 miles	32.00	23.00	9.00	1/31/05 12:01 PM - water animals	1/31/05 12:01 AM	1/31/05 6:30 AM	2/1/05 6:00 AM	2/1/05 9:00 AM	FEI 48823
2/7/2005	2/7/2005	Charlotte, NC	Raleigh, NC	128 miles	16.00	8.00	8.00	none	2/7/05 1:00 AM	2/7/05 6:00 AM	2/7/05 2:00 PM	2/7/05 5:00 PM	FEI 48822
2/15/2005	2/16/2005	Raleigh, NC	Atlanta, GA	421 miles	28.00	18.00	10.00	2/15/05 12:30 PM - water animals	2/15/05 1:00 AM	2/15/05 8:00 AM	2/16/05 2:00 AM	2/16/05 5:00 AM	FEI 48821
2/28/2005	3/1/2005	Atlanta, GA	Cincinnati, OH	479 miles	34.00	21.00	13.00	2/28/05 2:00 PM - water animals	2/28/05 1:00 AM	2/28/05 8:00 AM	3/1/05 5:30 AM	3/1/05 11:30 AM	FEI 48820
3/7/2005	3/8/2005	Cincinnati, OH	Baltimore, MD	690 miles	40.00	30.00	9.00	3/7/05 11:30 AM - water animals	3/7/05 12:01 AM	3/7/05 6:30 AM	3/8/05 1:30 PM	3/8/05 4:30 PM	FEI 48819
3/21/2005	3/21/2005	Baltimore, MD	Washington, D.C.	35 miles	10.00	2.00	7.75	none	3/21/05 12:01 AM	3/21/05 7:00 AM	3/21/05 9:15 AM	3/21/05 11:00 AM	FEI 48818
3/28/2005	3/28/2005	Washington, D.C.	Fairfax, VA	25 miles	3.00	2.00	0.00	none	3/28/05 8:30 PM	3/28/05 9:00 PM	3/28/05 11:30 PM	3/28/05 11:30 PM	FEI 48817
4/3/2005	4/4/2005	Fairfax, VA	Washington, D.C.	20 miles	12.00	7.00	4.50	none	4/3/05 8:00 PM	4/3/05 8:45 PM	4/4/05 4:30 AM	4/4/05 9:00 AM	FEI 48816
4/12/2005	4/19/2005	Washington, D.C.	Worcester, MA	399 miles	33.00	25.00	8.00	4/18/04 1:00 PM - water animals	4/18/05 1:00 AM	4/18/05 7:00 AM	4/19/05 8:30 AM	4/19/05 10:30 AM	FEI 48815
4/25/2005	4/26/2005	Worcester, MA	Albany, NY	152 miles	15.00	9.00	6.00	none	4/25/05 7:00 PM	4/25/05 11:00 PM	4/26/05 8:00 AM	4/26/05 10:00 AM	FEI 48814
5/2/2005	5/3/2004	Albany, NY	Charleston, WV	855 miles	41.00	35.00	6.00	5/2/05 2:45 PM - water animals 5/3/05 1:45 PM - water animals	5/2/05 1:00 AM	5/2/05 7:00 AM	5/3/05 6:30 PM	5/3/05 6:30 PM	FEI 48813
5/9/2005	5/10/2005	Charleston, WV	Knoxville, TN	434 miles	34.00	24.00	9.00	5/9/05 2:30 PM - water animals	5/9/2005 12:01 AM	5/9/2005 7:30 AM	5/10/2005 8:15 AM	5/10/2005 10:15 AM	FEI 48812
5/16/2005	5/16/2005	Knoxville, TN	Lexington, KY	210 miles	21.00	12.00	9.00	5/16/05 3:30 PM - water animals	5/16/2005 1:00 AM	5/16/2005 7:00 AM	5/16/2005 7:00 PM	5/16/2005 10:00 PM	FEI 48811
5/23/2005	5/23/2005	Lexington, KY	Chattanooga, TN	275 miles	21.00	13.00	8.00	5/23/05 3:45 PM - water animals	5/23/2005 1:00 AM	5/23/2005 7:30 AM	5/23/2005 8:45 PM	5/23/2005 10:45 PM	FEI 48810
5/30/2005	5/30/2005	Chattanooga, TN	Memphis, TN	310 miles	23.00	17.00	6.00	5/30/05 2:00 PM - water animals	5/30/2005 1:30 AM	5/30/2005 6:00 AM	5/30/2005 11:00 PM	5/31/2005 1:00 AM	FEI 48809
6/6/2005	6/7/2005	Memphis, TN	Lafayette, LA	568 miles	35.00	27.00	8.00	6/6/06 2:45 PM - water animals	6/5/2005 9:00 PM	6/6/2005 3:00 AM	6/7/2005 6:30 AM	6/7/2005 8:30 AM	FEI 48808
6/12/2005	6/12/2005	Lafayette, LA	Mobile, LA	287 miles	28.00	18.00	9.00	6/12/05 2:00 PM - water animals	6/12/2005 12:01 AM	6/12/2005 8:00 AM	6/13/2005 3:00 AM	6/13/2005 5:00 AM	FEI 48807
6/16/2005	6/16/2005	Mobile, LA	Pensacola, FA	103 miles	12.00	4.00	8.00	none	6/16/2005 2:00 AM	6/16/2005 8:00 AM	6/16/2005 1:00 PM	6/16/2005 3:00 PM	FEI 48806
6/20/2005	6/20/2005	Pensacola, FL	New Orleans, LA	244 miles	20.00	13.00	6.00	6/20/05 10:30 AM - water animals	6/20/2005 1:00 AM	6/20/2005 6:30 AM	6/20/2005 8:00 PM	6/20/2005 9:00 PM	FEI 48805
6/27/2005	6/28/2005	New Orleans, LA	San Antonio, TX	579 miles	34.00	24.00	10.50	6/27/05 3:30 PM - water animals	6/27/2005 1:00 AM	6/27/2005 9:00 AM	6/28/2005 9:00 AM	6/28/2005 11:30 AM	FEI 48804
7/5/2005	7/5/2005	San Antonia, TX	Dallas, TX	342 miles	21.00	15.00	6.00	7/5/05 10:30 AM - water animals	7/4/2005 10:30 PM	7/5/2005 4:00 AM	7/5/2005 7:00 PM	7/5/2005 8:00 PM	FEI 48803
7/18/2005	7/18/2005	Dallas, TX	Ft. Worth, TX	32 miles	11.00	2.00	8.50		7/18/05 12:00 AM	7/18/05 7:00 AM	7/18/05 9:00 AM	7/18/05 11:30 AM	FEI 48802
7/25/2005	7/26/2005	Ft. Worth, TX	Houston, TX	335 miles	25.00	14.00	11.00	7/25/05 12:00 PM - water animals	7/25/05 1:00 AM	7/25/05 7:00 AM	7/25/05 9:00 PM	7/26/05 2:00 AM	FEI 48801
8/8/2005	8/8/2005	Houston, TX	Corpus Christi, TX	249 miles	23.00	14.00	8.50	8/08/05 3:30 PM - water animals	8/8/05 1:00 AM	8/8/05 7:00 AM	8/8/05 9:30 PM	8/9/05 12:00 AM	FEI 48800
8/15/2005	8/16/2005	Corpus Christi, TX	Austin, TX	245 miles	26.00	18.00	8.00	8/15/05 3:00 PM - water animals	8/15/05 1:00 AM	8/15/05 7:00 AM	8/16/05 1:00 AM	8/16/05 3:00 AM	FEI 48799
8/22/2005	8/23/2005	Austin, TX	Kansas City, MO	712 miles	42.00	33.00	8.50	8/22/05 2:30 PM - water animals	8/21/05 9:30 PM	8/22/05 3:30 AM	8/23/05 1:00 PM	8/23/05 3:30 PM	FEI 48798

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
8/29/2005	8/29/2005	Kansas City, MO	Moline, IL	316 miles	22.00	15.00	7.98	8/29/05 11:00 AM - water animals	8/29/05 1:00 AM	8/29/05 7:00 AM	8/29/05 10:00 PM	8/29/05 11:59 PM	FEI 48797
9/6/2005	9/6/2005	Moline, IL	Des Moines, IA	226 miles	23.00	9.00	12.50	none	9/5/2005 8:00 PM	9/6/2005 3:00 AM	9/6/2005 1:00 PM	9/6/2005 7:30 PM	FEI 48796
9/12/2005	9/13/2005	Des Moines, IA	Grand Rapis, MI	542 miles	36.00	28.00	8.00	9/12/05 1:00 PM - water animals	9/12/2005 1:00 AM	9/12/2005 7:00 AM	9/13/2005 11:00 AM	9/13/2005 1:00 PM	FEI 48795
9/19/2005	9/20/2005	Grand Rapids, MI	Buffalo, NY	562 miles	36.00	26.00	9.50	9/19/05 12:01 PM - water animals	9/18/2005 7:00 PM	9/19/2005 2:00 AM	9/20/2005 4:30 AM	9/20/2005 7:00 AM	FEI 48794
9/26/2005	9/26/2005	Buffalo, NY	Indianapolis, IN	468 miles	21.00	14.00	7.00	9/26/05 7:30 AM - water animals	9/25/2005 10:30 PM	9/26/2005 3:30 AM	9/26/2005 6:15 PM	9/26/2005 8:15 PM	FEI 48793
10/3/2005	10/5/2005	Indianapolis, IN	Boston, MA	970 miles	72.00	63.00	8.98	10/3/05 3:00 PM - water animals	10/2/2005 11:00 PM	10/3/2005 6:30 AM	10/5/2005 10:00 PM	10/5/2005 11:59 PM	FEI 48792
10/16/2005	10/17/2005	Boston, MA	Manchester, NH	113 miles	19.00	12.00	6.00	10/17/05 1:15 PM - water animals	10/17/2005 12:01 AM	10/17/2005 6:00 AM	10/17/2005 7:00 PM	10/17/2005 8:00 PM	FEI 48790-91
10/24/2005	10/24/2005	Manchester, NH	Bridgeport, CT	233 miles	24.00	19.00	4.02	10/24/05 12:15 PM - water animals	10/24/2005 12:01 AM	10/24/2005 3:30 AM	10/24/2005 11:00 PM	10/25/2005 12:01 AM	FEI 48789
10/31/2005	11/1/2005	Brideport, CT	Pittsburgh, PA	750 miles	37.00	35.00	1.98	10/31/05 3:00 PM - water animals	10/31/2005 12:01 AM	10/31/2005 1:00 AM	11/1/2005 12:01 PM	11/1/2005 2:00 PM	FEI 48788
11/7/2005	11/8/2005	Pittsburgh, PA	Auburn Hills, MI	329 miles	25.00	17.00	7.02	11/7/05 12:15 PM - water animals	11/7/2005 12:01 AM	11/7/2005 6:00 AM	11/7/2005 11:59 PM	11/8/2005 2:00 AM	FEI 48787
11/14/2005	11/15/2005	Auburn Hills, MI	St. Louis, MO	514 miles	34.00	25.00	8.50	11/14/05 3:00 PM - water animals	11/14/2005 12:01 AM	11/14/2005 6:30 AM	11/15/2005 8:30 AM	11/15/2005 11:00 AM	FEI 48786
11/21/2005	11/23/2005	St. Louis, MO	Tampa, FL	1,550 miles	76.00	66.00	10.50	11/21/05 1:00 PM - water animals 11/22/05 1:30 PM - water animals 11/23/05 11:30 AM - water animals	11/20/2005 11:00 PM	11/21/2005 5:30 AM	11/23/2005 11:30 PM	11/24/2005 4:00 AM	FEI 48785
		Total # of hours on the train:			**1148**								
		Total # of days on the train:			**47.83**								
		Average # of hours on the train per trip:			**28.00**								

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
1/3/2006	1/3/2006	Orlando, FL	Miami, FL	237 miles	20.00	10.00	10.00	none	1/3/06 12:01 AM	1/3/06 6:30 AM	1/3/06 5:00 PM	1/3/06 9:00 PM	FEI 48784
1/9/2006	1/9/2006	Tampa, FL	Orlando, FL	97 miles	16.00	4.00	11.00	none	1/9/06 12:01 AM	1/9/06 10:00 AM	1/9/06 2:30 PM	1/9/06 4:30 PM	FEI 48783
1/16/2006	1/16/2006	Orlando, FL	Jacksonville, FL	154 miles	13.00	1.00	11.50	none	1/16/06 12:01 AM	1/16/06 5:00 AM	1/16/06 6:30 AM	1/16/06 2:00 PM	FEI 48782
1/23/2006	1/24/2006	Jacksonville, FL	Birmingham, AL	478 miles	32.00	24.00	7.00	1/23/06 3:45 PM - water animals	1/23/06 12:01 AM	1/23/06 5:30 AM	1/24/06 6:15 AM	1/24/06 8:15 AM	FEI 48781
1/30/2006	1/31/2006	Birmingham, AL	Greenville, SC	318 miles	28.00	19.00	9.00	1/30/06 2:30 PM - water animals	1/30/06 12:01 AM	1/30/06 7:00 AM	1/31/06 2:00 AM	1/31/06 5:00 AM	FEI 48780
2/6/2006	2/6/2006	Greenville, SC	Greensboro, NC	203 miles	16.00	10.00	6.00	none	2/6/06 12:01 AM	2/6/06 4:30 AM	2/6/06 3:00 PM	2/6/06 5:00 PM	FEI 48779
2/12/2006	2/12/2006	Greensboro, NC	Richmond, VA	227 miles	16.00	10.00	5.50	none	2/13/06 12:01 AM	2/13/06 5:30 AM	2/13/06 4:00 PM	2/13/06 4:30 PM	FEI 48778
2/21/2006	2/21/2006	Richmond, VA	Norfolk, VA	185 miles	18.00	11.00	7.00	none	2/20/06 8:30 PM	2/21/06 1:00 AM	2/21/06 12:00 PM	2/21/06 3:00 PM	FEI 48777
2/27/2006	2/27/2006	Norfolk, VA	Hampton, VA	183 miles	15.00	7.00	8.00	2/27/06 12:01 PM - water animals	2/27/06 2:00 AM	2/27/06 10:00 AM	2/27/06 5:00 PM	2/27/06 6:00 PM	FEI 48776
3/6/2006	3/7/2006	Hampton, VA	East Rutherford, NJ	424 miles	33.00	21.00	12.00	3/6/06 5:30 PM - water animals	3/6/06 1:00 AM	3/6/06 7:00 AM	3/7/06 4:30 AM	3/7/06 10:30 AM	FEI 48775
3/13/2006	3/13/2006	East Rutherford, NJ	Uniondale, NY	40 miles	16.00	9.00	6.00	none	3/13/06 2:30 AM	3/13/06 7:00 AM	3/13/06 4:30 PM	3/13/06 6:30 PM	FEI 48774
3/20/2006	3/20/2006	Uniondale, NY	New York , NY	21 miles	11.00	2.00	8.00	none	3/20/06 2:00 AM	3/20/06 10:00 AM	3/20/06 12:15 PM	3/20/06 1:15 PM	FEI 48773
4/18/2006	4/19/2006	New York, NY	Philadelphia, PA	88 miles	18.00	12.00	6.00	4/18/06 - 2:00 PM - water animals	4/18/06 7:00 AM	4/18/06 11:00 AM	4/18/06 11:00 PM	4/19/06 1:00 AM	FEI 48772
5/1/2006	5/2/2006	Philadelphia, PA	Providence, RI	443 miles	29.00	21.00	7.00	5/1/06 11:00 AM - water animals	5/1/06 12:01 AM	5/1/06 5:00 AM	5/2/06 3:00 AM	5/2/06 6:00 AM	FEI 48771
5/8/2006	5/8/2006	Providence, RI	Hatrford, CT	116 miles	15.00	9.00	6.00	5/8/06 11:00 AM - water animals	5/8/2006 12:01 AM	5/8/2006 5:00 AM	5/8/2006 2:00 PM	5/8/2006 4:00 PM	FEI 48770
5/15/2006	5/16/2006	Hartford, CT	Trenton, NJ	228 miles	26.00	20.00	5.98	5/15/06 3:00 PM - water animals	5/15/2006 12:01 AM	5/15/2006 4:00 AM	5/16/2006 12:01 AM	5/16/2006 3:00 AM	FEI 48769
5/22/2006	5/22/2006	Trenton, NJ	Hershey, PA	123 miles	12.00	6.00	5.00	none	5/22/2006 2:00 AM	5/22/2006 6:00 AM	5/22/2006 1:00 PM	5/22/2006 3:00 PM	FEI 48768
5/29/2006	5/30/2006	Hershey, PA	Wilkes-Barre, PA	118 miles	11.00	9.00	1.00	none	5/29/2006 10:00 PM	5/29/2006 9:00 PM	5/30/2006 7:00 AM	5/30/2006 9:00 AM	FEI 48767
6/5/2006	6/7/2006	Wilkes-Barre, PA	Omaha, NE	1,315 miles	70.00	61.00	8.50	6/5/06 11:30 AM - water animals	6/5/2006 12:01 AM	6/5/2006 6:30 AM	6/7/2006 8:30 PM	6/7/2006 11:00 PM	FEI 48766
6/11/2006	6/13/2006	Omaha, NE	Colorado Springs, CO	554 miles	36.00	27.00	8.50	6/12/06 2:00 PM - water animals	6/11/2006 10:00 PM	6/12/2006 3:30 AM	6/13/2006 6:30 AM	6/13/2006 10:00 AM	FEI 48765
6/18/2006	6/21/2006	Colorado Springs, CO	Las Vegas, NV	1079 miles	53.00	47.00	5.00	6/19/06 12:45 PM - water animals 6/20/06 6:45 AM - water animals	6/18/2006 10:00 PM	6/19/2006 1:30 AM	6/21/2006 1:00 AM	6/21/2006 3:00 AM	FEI 48764
6/26/2006	6/28/2006	Las Vegas, NV	Tucson, AZ	710 miles	35.00	27.00	8.00	6/27/06 8:00 AM - water animals	6/26/2006 5:00 PM	6/26/2006 11:30 PM	6/28/2006 2:30 AM	6/28/2006 4:30 AM	FEI 48763
7/3/2006	7/4/2006	Tucson, AZ	Phoenix, AZ	120 miles	8.00	4.00	4.00	none	7/3/2006 7:30 PM	7/3/2006 9:30 PM	7/4/2006 2:00 AM	7/4/2006 4:00 AM	FEI 48762
7/10/2006	7/11/2006	Phoenix, AZ	Fresno, CA	608 miles	31.00	22.00	8.00	7/10/06 1:15 PM - water animals 6:15 PM - water animals	7/10/2006 12:01 AM	7/10/2006 7:00 AM	7/11/2006 5:15 AM	7/11/2006 7:15 AM	FEI 48761
7/17/2006	7/18/2006	Fresno, CA	Los Angeles, CA	371 miles	29.00	21.00	8.00	7/17/06 5:15 PM - water animals	7/17/2006 1:00 AM	7/17/2006 6:30 AM	7/18/2006 3:30 AM	7/18/2006 6:30 AM	FEI 48760
7/24/2006	7/24/2006	Los Angeles, CA	Anaheim, CA	21 miles	11.00	2.00	8.02	none	7/24/2006 1:00 AM	7/24/2006 7:30 AM	7/24/2006 10:00 AM	7/24/2006 12:01 PM	FEI 48759
8/7/2006	8/7/2006	Anaheim, CA	San Diego, CA	103 miles	17.00	6.00	11.00	none	8/7/2006 5:00 AM	8/7/2006 3:30 PM	8/7/2006 9:30 PM	8/7/2006 10:30 PM	FEI 48758
8/14/2006	8/15/2006	San Diego, CA	Oakland, CA	702 miles	39.00	27.00	10.50	8/14/06 2:00 PM - water animals	8/14/2006 1:00 AM	8/14/2006 9:30 AM	8/15/2006 1:30 PM	8/15/2006 4:00 PM	FEI 48757
8/20/2006	8/20/2006	Oakland, CA	San Jose, CA	42 miles	12.00	5.00	6.02	none	8/20/2006 12:01 AM	8/20/2006 6:00 AM	8/20/2006 11:00 AM	8/20/2006 12:01 PM	FEI 48756

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
8/28/2006	8/28/2006	San Jose, CA	Stockton, CA	85 miles	12.00	7.00	4.48	none	8/28/2006 2:00 AM	8/28/2006 4:30 AM	8/28/2006 12:01 PM	8/28/2006 2:30 PM	FEI 48755
9/4/2006	9/6/2006	Stockton, CA	Everett, WA	933 miles	58.00	51.00	6.75	9/4/06 2:00 PM - water animals 9/5/06 8:00 AM - water animals	9/4/2006 1:00 AM	9/4/2006 5:00 AM	9/6/2006 8:15 AM	9/6/2006 11:00 AM	FEI 48754
9/11/2006	9/11/2006	Everett, WA	Portland, OR	208 miles	20.00	10.00	9.00	9/11/06 11:30 water animals	9/11/2006 12:01 AM	9/11/2006 6:30 AM	9/11/2006 5:30 PM	9/11/2006 8:30 PM	FEI 48753
9/18/2006	9/19/2006	Portland, OR	Sacramento, CA	628 miles	42.00	34.00	6.50	9/18/06 12:01 PM - water animals 9/19/06 8:30 AM - water animals	9/18/2006 2:00 AM	9/18/2006 7:00 AM	9/19/2006 5:30 PM	9/19/2006 8:00 PM	FEI 48752
9/25/2006	9/26/2006	Sacramento, cA	Salt Lake City, UT	731 miles	36.00	30.00	5.98	9/25/06 2:30 PM - water animals	9/25/2006 12:01 AM	9/25/2006 6:00 AM	9/26/2006 12:01 PM	9/26/2006 1:00 PM	FEI 48751
10/2/2006	10/3/2006	Salt Lake City, UT	Denver, CO	631 miles	32.00	25.00	6.00	10/01/06 12:01 PM - water animals	10/2/2006 12:01 AM	10/2/2006 5:00 AM	10/3/2006 7:00 AM	10/3/2006 9:00 AM	FEI 48750
10/16/2006	10/19/2006	Denver, CO	Cleveland, OH	1,448 miles	71.00	62.00	9.00	10/16/06 12:00 PM - water animals 10/16/06 8:00 PM - fill water tanks **10/17/06 11:15 AM - REST ANIMALS*** 10/18/06 10:00 PM - water animals	10/16/2006 12:01 AM	10/16/2006 7:30 AM	10/19/2006 2:00 AM	10/19/2006 4:00 AM	FEI 48749
10/30/2006	10/31/2006	Cleveland, OH	Rosemont, IL	357 miles	26.00	16.00	9.48	10/30/06 1:30 PM - water animals	10/30/2006 1:00 AM	10/30/2006 7:30 AM	10/31/2006 12:01 AM	10/31/2006 3:30 AM	FEI 48748
11/12/2006	11/13/2006	Rosemont, IL	Chicago, IL	19 miles	12.00	0.00	11.00	none	11/12/2006 8:30 PM	11/13/2006 8:00 AM	11/13/2006 9:00 AM	11/13/2006 9:00 AM	FEI 48747
11/27/2006	11/28/2006	Chicago, IL	Columbus, OH	394 miles	32.00	25.00	7.00	11/27/06 1:00 PM - water animals 10:00 PM - water animals	11/27/2006 3:30 AM	11/27/2006 9:00 AM	11/28/2006 10:15 AM	11/28/2006 12:15 PM	FEI 48746
12/4/2006	12/6/2006	Columbus, OH	Orlando, FL	1,425 miles	71.00	63.00	7.50	12/04/06 4:15 PM - water animals 12/05/06 7:45 PM - water animals 12/06/06 11:40 AM - water animals	12/3/2006 10:00 PM	12/4/2006 2:00 AM	12/6/2006 5:30 PM	12/6/2006 9:00 PM	FEI 48745
* The animals were off the train for 4 hours. The number of hours in the total time on the train column is not consecutive. The elephants were on the train for approx. 35.15 hours prior to the rest and 34.30 hours after the rest.													
		Total # of hours on the train:			**1098**								
		Total # of days on the train:			**45.75**								
		Average # of hours on train per trip:			**27.45**								

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
1/3/2007	1/3/2007	Orlando, FL	Miami, FL	237 miles	21.00	11.00	10.00	none	1/3/08 3:00 AM	1/3/08 9:30 AM	1/3/08 9:00 PM	1/4/08 1:00 AM	FEI 48744
1/16/2007	1/17/2007	Miami, FL	Columbia, SC	645 miles	34.00	24.00	8.50	1/16/07 5:30 PM - water animals	1/16/07 1:00 AM	1/16/07 7:30 AM	1/17/07 8:30 AM	1/17/07 11:00 AM	FEI 48743
1/22/2007	1/23/2007	Columbia, SC	Nashville, TN	576 miles	32.00	24.00	7.00	1/22/07 11:30 AM - water supplied	1/22/07 1:00 AM	1/22/07 6:30 AM	1/23/07 7:30 AM	1/23/07 9:30 AM	FEI 48742
1/29/2007	1/30/2007	Nashville, TN	North Charleston, SC	600 miles	39.00	30.00	8.50	1/29/07 1:00 PM - water supplied	1/29/07 1:00 AM	1/29/07 6:00 AM	1/30/07 1:00 PM	1/30/07 4:30 PM	FEI 48741
2/5/2007	2/5/2007	North Charleston, SC	Raleigh, NC	281 miles	22.00	13.00	9.00	2/05/07 11:30 AM - water supplied	2/4/07 9:00 PM	2/5/07 3:00 AM	2/5/07 4:30 PM	2/5/07 7:30 PM	FEI 48740
2/12/2007	2/13/2007	Raleigh, NC	Atlanta, GA	421 miles	29.00	18.00	11.50	2/12/07 1:00 PM - water animals	2/12/07 1:00 AM	2/12/07 8:00 AM	2/13/07 2:00 AM	2/13/07 6:30 AM	FEI 48739
2/20/2007	2/20/2007	Atlanta, GA	Knoxville, TN	237 miles	21.00	10.00	11.00	2/20/07 1:15 PM - water supplied	2/20/07 12:01 AM	2/20/07 8:15 AM	2/20/07 7:00 PM	2/20/07 10:00 PM	FEI 48739
2/26/2007	2/26/2007	Knoxville, TN	Cincinnati, OH	334 miles	25.00	14.00	10.50	2/26/07 11:00 AM - water animals 2/26/07 4:45 PM - water animals	2/26/07 1:00 AM	2/26/07 8:00 AM	2/26/07 10:30 PM	2/27/07 2:00 AM	FEI 48737
3/5/2007	3/6/2007	Cincinnati, OH	Baltimore, MD	690 miles	40.00	30.00	10.00	3/5/2007 2:00 PM - water supplied 3/6/07 11:15 AM - water supplied	3/5/07 1:00 AM	3/5/07 8:30 AM	3/6/07 2:30 PM	3/6/07 5:30 PM	FEI 48736
3/19/2007	3/19/2007	Baltimore, MD	Washington, DC	35 miles	4.00	1.00	2.00	none	3/19/07 1:00 AM	3/19/07 2:00 AM	3/19/07 4:00 AM	3/19/07 5:00 AM	FEI 48735
4/16/2007	4/17/2007	Washington, DC	Charleston, WV	470 miles	33.00	27.00	5.25	4/16/7 10:15 AM - water animals	4/16/07 4:00 AM	4/16/07 8:45 AM	4/17/07 12:15 PM	4/17/07 1:30 PM	FEI 48733
4/30/2007	4/30/2007	Albany, NY	Worcecster, MA	152 miles	15.00	8.00	7.50	none	4/30/07 1:30 AM	4/30/07 7:00 AM	4/30/07 3:00 PM	4/30/07 5:30 PM	FEI 48731
5/7/2007	5/7/2007	Worcester, MA	Rochester, NY	401 miles	19.00	12.00	6.50	5/07/07 12:00 PM - water supplied	5/7/07 2:00 AM	5/7/07 7:00 AM	5/7/07 7:30 PM	5/7/07 10:00 PM	FEI 48730
5/14/2007	5/17/2007	Rochester, NY	Little Rock, AR	1212 miles	60.00	51.00	8.48	5/14/07 2:00 PM - water animals **5/14/07 11:30 PM - REST ANIMALS*** 5/16/07 11:00 AM - water supplied	5/14/2007 1:00 AM	5/14/2007 7:00 AM	5/17/2007 12:01 AM	5/17/2007 2:30 AM	FEI 48729
6/4/2007	6/6/2007	Little Rock, AR	Lafayette, LA	432 miles	48.00	27.00	19.98	6/5/07 10:30 AM - water supplied	6/4/2007 3:00 AM	6/4/2007 8:45 PM	6/6/2007 12:01 AM	6/6/2007 3:00 AM	FEI 48728
6/11/2007	6/12/2007	Lafayette, LA	Pensacola, FL	400 miles	39.00	27.00	11.50	6/11/2007 9:00 AM- water supplied	6/10/2007 7:00 PM	6/11/2007 3:00 AM	6/12/2007 6:30 AM	6/12/2007 10:00 AM	FEI 48727
6/18/2007	6/18/2007	Pensacola, FL	New Orleans, LA	244 miles	19.00	11.00	8.00	6/18/07 7:00 AM- water supplied	6/17/2007 10:00 PM	6/18/2007 3:00 AM	6/18/2007 2:30 PM	6/18/2007 5:30 PM	FEI 48726
6/25/2007	6/26/2007	New Orleans, LA	Austin, TX	549 miles	37.00	14.00	23.48	6/25/07 4:30 PM- water animals	6/25/2007 1:00 AM	6/25/2007 10:00 AM	6/26/2007 12:01 AM	6/26/2007 2:30 PM	FEI 48725
7/2/2007	7/2/2007	Austin, TX	San Antonio, TX	82 miles	15.00	6.00	8.50	none	7/2/2007 12:01 AM	7/2/2007 6:30 AM	7/2/2007 1:30 PM	7/2/2007 4:00 PM	FEI 48724
7/9/2007	7/9/2007	San Antonio, TX	Houston, TX	188 miles	17.00	9.00	7.25	none	7/8/2007 9:00 PM	7/9/2007 4:00 AM	7/9/2007 1:15 PM	7/9/2007 2:30 PM	FEI 48723
7/23/2007	7/24/2007	Houston, TX	Corpus Christi, TX	249 miles	25.00	15.00	10.00	none	7/23/2007 1:00 AM	7/23/2007 8:00 AM	7/23/2007 11:00 PM	7/24/2007 2:00 AM	FEI 48722
7/30/2007	7/31/2007	Corpus Christi, TX	Dallas, TX	538 miles	37.00	27.00	9.00	7/30/03 12:30 PM - water supplied	7/30/2007 1:00 AM	7/30/2007 7:30 AM	7/31/2007 11:30 AM	7/31/2007 2:30 PM	FEI 48721
8/13/2007	8/13/2007	Dallas, TX	Fort Worth, TX	32 miles	9.00	1.00	6.50	none	8/13/2007 2:30 AM	8/13/2007 8:00 AM	8/13/2007 10:00 AM	8/13/2007 11:30 AM	FEI 48720
8/20/2007	8/22/2007	Fort Worth, TX	Lexington, KY	1,229 miles	57.00	50.00	6.00	**8/21/07 8:00 AM - REST ANIMALS****	8/20/2007 12:01 AM	8/20/2007 5:00 AM	8/22/2007 1:30 PM	8/22/2007 3:30 PM	FEI 48719
8/27/2007	8/28/2007	Lexington, KY	Moline, IL	703 miles	44.00	35.00	8.50	8/27/07 2:30 PM - water animals	8/27/2007 1:00 AM	8/27/2007 7:00 AM	8/28/2007 6:30 PM	8/28/2007 9:00 PM	FEI 48718
9/4/2007	9/4/2007	Moline, IL	Kansas City, MO	316 miles	21.00	15.00	6.00	9/4/07 10:45 AM - water animals	9/3/2007 8:00 PM	9/4/2007 1:00 AM	9/4/2007 4:00 PM	9/4/2007 6:00 PM	FEI 48717
9/10/2007	9/11/2007	Kansas City, MO	Grand Rapids, MI	664 miles	39.00	31.00	8.00	9/10/07 12:01 AM - water supplied	9/10/2007 1:00 AM	9/10/2007 7:00 AM	9/11/2007 2:00 PM	9/11/2007 4:00 PM	FEI 48716
9/24/2007	9/25/2007	Indianapolis, IN	Des Moines, IA	498 miles	39.00	29.00	9.00	9/24/07 12:01 AM - water supplied	9/24/2007 12:00 AM	9/24/2007 7:30 AM	9/25/2007 1:00 PM	9/25/2007 3:00 PM	FEI 48714

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
10/1/2007	10/3/2007	Des Moines, IA	Boston, MA	1,334 miles	69.00	62.00	7.50	10/01/07 1:00 PM - water supplied 10/03/07 11:30 AM - water supplied	10/1/2007 1:00 AM	10/1/2007 6:00 AM	10/3/2007 8:00 PM	10/3/2007 10:30 PM	FEI 48713
10/15/2007	10/15/2007	Boston, MA	Manchester, NH	113 miles	23.00	15.00	7.50	10/15/07 1:15 PM - water supplied	10/15/2007 12:00 AM	10/15/2007 5:00 AM	10/15/2007 9:00 PM	10/15/2007 11:30 PM	FEI 48712
10/22/2007	10/23/2007	Manchester, NH	Bridgeport, CT	233 miles	26.00	23.00	2.00	10/22/07 3:00 PM - water supplied	10/21/2007 10:00 PM	10/21/2007 11:30 PM	10/22/2007 11:00 PM	10/23/2007 12:00 AM	FEI 48711
10/29/2007	10/30/2007	Bridgeport, CT	Pittsburgh, PA	750 miles	39.00	35.00	3.48	10/29/07 3:00 PM - water animals	10/29/2007 12:00 AM	10/29/2007 1:00 AM	10/30/2007 12:01 PM	10/30/2007 3:30 PM	FEI 48710
11/5/2007	11/6/2007	Pittsburgh, PA	St. Louis, MO	623 miles	33.00	23.00	9.00	11/05/07 2:15 PM - water animals	11/5/2007 12:00 AM	11/5/2007 7:00 AM	11/6/2007 6:00 AM	11/6/2007 9:00 AM	FEI 48709
11/12/2007	11/13/2007	St. Louis, MO	Auburn Hills, MI	574 miles	35.00	29.00	6.25	11/12/07 3:30 PM - water supplied	11/11/2007 9:00 PM	11/12/2007 2:00 AM	11/13/2007 7:30 AM	11/13/2007 8:45 AM	FEI 48708
11/19/2007	11/21/2007	Auburn Hills, MI	Tampa, FL	1,313 miles	76.00	68.00	7.02	11/19/07 11:00 AM - water animals 11/21/07 3:00 PM - water animals	11/19/2007 12:01 AM	11/19/2007 3:00 AM	11/21/2007 11:59 PM	11/22/2007 5:00 AM	FEI 48707
11/31/2007	12/31/2007	Tampa, FL	Tampa, FL	3 miles	18.00	0.00	18.50	none	12/30/2007 8:00 PM	12/31/2007 2:00 PM	12/31/2007 2:30 PM	12/31/2007 3:00 PM	FEI 48706
** The animals were of the train for 13.5 hours. The number of hours in the total time on the train column is not consecutive. The elephants were on the train for approx. 22.5 hours prior to the rest and 37.5 hours after the rest.													
* The animals were off the train for 6 hours. The number of hours in the total time on the train column is not consecutive. The elephants were on the train for approx. 32 hours prior to the rest and 23.5 hours after the rest.													
		Total # of hours on the train:			**1159**								
		Total # of days on the train:			**48.29**								
		Average # of hours on the train per trip:			**32.19**								

Departure Date	Arrival Date	Departure Location	Arrival Location	Distance	Total Time on Train (in hrs)	Total Time Traveling (in hrs)	Stationary time on train (in hrs)	Breaks	Loaded Animals	Left Location	Arrived	Cars Spotted	Bates
1/7/2008	1/7/2008	Tampa, FL	Orlando, FL	97 miles	16.00	4.00	11.00	none	1/7/08 12:01 AM	1/7/08 10:00 AM	1/7/08 2:30 PM	1/7/08 4:30 PM	FEI 48705
1/14/2008	1/14/2008	Orlando, FL	Jacksonville, FL	154 miles	15.00	6.00	9.00	none	1/14/08 12:01 AM	1/14/08 6:30 AM	1/14/08 1:00 PM	1/14/08 4:00 PM	FEI 48704
1/21/2008	1/22/2008	Jacksonville, FL	Birmingham, AL	478 miles	33.00	25.00	8	1/21/08 12:01 PM - water animals 1/21/08 5:15 PM - water animals	1/21/08 12:01 AM	1/21/08 7:00 AM	1/22/08 8:00 AM	1/22/08 10:00 AM	FEI 48703
1/28/2008	1/29/2008	Birmingham, AL	Greenville, SC	318 miles	28.00	20.00	7.5	1/28/08 1:30 PM - water animals	1/28/08 12:01 AM	1/28/08 6:00 AM	1/29/08 2:00 AM	1/29/08 4:30 AM	FEI 48702
2/3/2008	2/4/2008	Greenville, SC	Greensboro, NC	203 miles	16.00	9.00	5.5	none	2/3/08 11:00 PM	2/4/08 3:00 AM	2/4/08 1:00 PM	2/4/08 3:30 PM	FEI 48701
			Total # of hours on the train:		**108**								
			Total # of days on the train:		**4.50**								
			Average # of days on the train per trip:		**21.60**								

ATTACHMENT C

J. William Misiura
Director Transportation
Domestic

06/06/04 BLUE UNIT SCHEDULE-TRANSPORTATION ORDER

DEPARTURE: Monday June 10, 2002 — 57 Cars
FROM STATION: WILKES-BARRE, PA — 4135 Tons
ROUTE: L&S WILKES-BARRE CP HARRISBURG NS KANSAS CITY BNSF — 5044 Feet
TO STATION: **OKLAHOMA CITY, OK** — 1629 Miles

REDACTED

The circus trainmaster is Gene Pettus
Please monitor the progress of the Circus Train to assure crews are available.
The Circus Train is to run ahead of schedule if possible and not held for departure times scheduled below.

	Last Show at WILKES-BARRE, PA	EDT	17:00	Sun 06/09/02
L&S	Train loaded and ready for switching.		00:01	Mon 06/10/02
	CIRCUS TRAINMASTER WILL PROVIDE SWITCHING			
	INSTRUCTIONS, AND CONFIRM DEPARTURE TIME			
L&S	Switching completed-Deliver to CP-CP to supply rear end device.		04:00	Mon 06/10/02
CP	Depart WILKES-BARRE, PA		05:00	Mon 06/10/02
CP	Arrive Harrisburg (Rockville-CP Wye), PA Deliver to NS		10:00	Mon 06/10/02
NS	Depart Harrisburg, PA		10:30	Mon 06/10/02
NS	Arrive Altoona, PA Crew Change Water Animals-head 4 cars		14:30	Mon 06/10/02
NS	Depart Altoona, PA		15:30	Mon 06/10/02
NS	Arrive Pittsburgh, PA Crew Change		20:30	Mon 06/10/02
NS	Depart Pittsburgh, PA		20:45	Mon 06/10/02
NS	Arrive Cleveland, OH Crew Change		00:45	Tue 06/11/02
NS	Depart Cleveland, OH		01:00	Tue 06/11/02
NS	Arrive New Haven, IN Crew Change	EDT	09:00	Tue 06/11/02
	Rest animals-Train on Wabash #3			
NS	Depart New Haven, IN	CDT	15:00	Tue 06/11/02
NS	Arrive Peru, IN Water animals-Head 4 cars		17:00	Tue 06/11/02
NS	Depart Peru, IN		17:15	Tue 06/11/02
NS	Arrive Decatur, IL Crew Change		23:00	Tue 06/11/02
NS	Depart Decatur, IL		23:15	Tue 06/11/02
NS	Arrive Moberly, MO Crew Change		06:45	Wed 06/12/02
NS	Depart Moberly, MO		07:00	Wed 06/12/02
NS	Arrive Kansas City, MO Deliver to BNSF Water Animals-Head 4 cars		14:00	Wed 06/12/02
BNSF	Depart Kansas City, MO		15:00	Wed 06/12/02
BNSF	Arrive Arkansas City, KS Crew Change		22:00	Wed 06/12/02
BNSF	Depart Arkansas City, KS		22:15	Wed 06/12/02
BNSF	Arrive OKLAHOMA CITY, OK		04:00	Thu 06/13/02
BNSF	Spot Coaches ***LOCK AND BLUE FLAG STORAGE TRACKS***		05:00	Thu 06/13/02
BNSF	All Cars Spotted ***LOCK AND BLUE FLAG STORAGE TRACKS***	CDT	06:00	Thu 06/13/02
	Circus Opening OKLAHOMA CITY, OK First Show		19:30	Fri 06/14/02

The above schedule is essential to assure adequate set up time prior to the first show. If operating problems occur, please notify:
BILL MISIURA, Director Transportation Domestic
or JOE DEMIKE, Transportation Manager

REDACTED

NOTE TO RAILROAD OPERATING SUPERVISORS & TRAIN CREWS:

* Monitor circus radio at all times for operational and emergency communications.
* Use 90 pounds of trainline pressure. Allow extra time to COMPLETELY CHARGE passenger cars before making brake test. The air brakes are set for direct release. Locomotive brake cut out valve to be operated in "Freight" position.
* Water and electric lines must be disconnected by Circus Trainmaster or Circus Electrician BEFORE any cuts are made.
* Maximum speed is 60 MPH. Train is to run ahead of schedule if early and is not to be held for departure times.
* CONTROL SLACK DURING SWITCHING AND ROAD OPERATIONS AS ALL COACHES ARE OCCUPIED.

FELD 0004073

REDACTED

J. William Misiura
Director Transportation
Domestic

06/06/04 # BLUE UNIT SCHEDULE-TRANSPORTATION ORDER

DEPARTURE: Monday June 17, 2002 — 57 Cars
FROM STATION: OKLAHOMA CITY, OK — 4135 Tons
ROUTE: BNSF BARSTOW UP — 5044 Feet
TO STATION: **LAS VEGAS, NV** **REDACTED** — 1647 Miles

The circus trainmaster is Gene Pettus
Please monitor the progress of the Circus Train to assure crews are available.
The Circus Train is to run ahead of schedule if possible and not held for departure times scheduled below.

	Last Show at OKLAHOMA CITY, OK	CDT	17:30	Sun 06/16/02
BNSF	Train loaded and ready for switching. CIRCUS TRAINMASTER WILL PROVIDE SWITCHING INSTRUCTIONS, AND CONFIRM DEPARTURE TIME		00:01	Mon 06/17/02
BNSF	Switching completed-Railroad to supply rear end device.		04:30	Mon 06/17/02
BNSF	Depart OKLAHOMA CITY, OK		05:30	Mon 06/17/02
BNSF	Arrive Perry, OK Train will reverse direction		08:00	Mon 06/17/02
BNSF	Depart Perry, OK		09:00	Mon 06/17/02
BNSF	Arrive Enid, OK Crew Change Water Animals-Head 4 cars-Our tanks		11:15	Mon 06/17/02
BNSF	Depart Enid. OK		12:15	Mon 06/17/02
BNSF	Arrive Amarillo, TX Crew Change-Water Animals-Head 4 cars		20:30	Mon 06/17/02
BNSF	Depart Amarillo, TX		21:00	Mon 06/17/02
BNSF	Arrive Clovis, NM Crew Change	CDT	00:01	Tue 06/18/02
BNSF	Depart Clovis, NM	MDT	23:15	Mon 06/17/02
BNSF	Arrive Becker, NM Rest animals-Service train		05:30	Tue 06/18/02
BNSF	Depart Becker, NM		11:30	Tue 06/18/02
BNSF	Arrive Belen, NM Crew Change		12:01	Tue 06/18/02
BNSF	Depart Belen, NM		12:15	Tue 06/18/02
BNSF	Arrive Winslow, AZ Crew Change Water animals-Our Tanks		18:30	Tue 06/18/02
BNSF	Depart Winslow, AZ		19:00	Tue 06/18/02
BNSF	Arrive Needles, CA Crew Change Water Animals-Our Tanks	MDT	04:15	Wed 06/19/02
BNSF	Depart Needles, CA	PDT	03:45	Wed 06/19/02
BNSF	Arrive Barstow, CA Turn train-Deliver to UP-Fill Stock car water tanks		08:45	Wed 06/19/02
UP	Depart Barstow, CA		10:45	Wed 06/19/02
UP	Arrive LAS VEGAS, NV		18:00	Wed 06/19/02
UP	Spot Coaches ***LOCK AND BLUE FLAG STORAGE TRACKS***		19:00	Wed 06/19/02
UP	All Cars Spotted ***LOCK AND BLUE FLAG STORAGE TRACKS***	PDT	21:00	Wed 06/19/02
	Circus Opening LAS VEGAS, NV First Show		19:30	Thu 06/20/02

NOTES: **Arizona observes MST, however BNSF operates through Arizona on Daylight Savings Time.**
At all water stops, circus personnel will be on the ground at the head 4 and rear 17 cars.

The above schedule is essential to assure adequate set up time prior to the first show. If operating problems occur, please notify:
BILL MISIURA, Director Transportation Domestic
or JOE DEMIKE, Transportation Manager **REDACTED**

NOTE TO RAILROAD OPERATING SUPERVISORS & TRAIN CREWS:

* Monitor circus radio at all times for operational and emergency communications.
* Use 90 pounds of trainline pressure. Allow extra time to COMPLETELY CHARGE passenger cars before making brake test. The air brakes are set for direct release. Locomotive brake cut out valve to be operated in "Freight" position.
* Water and electric lines must be disconnected by Circus Trainmaster or Circus Electrician BEFORE any cuts are made.
* Maximum speed is 60 MPH. Train is to run ahead of schedule if early and is not to be held for departure times.
* CONTROL SLACK DURING SWITCHING AND ROAD OPERATIONS AS ALL COACHES ARE OCCUPIED.

FELD 0003815

REDACTED

J. William Misiura
Director Transportation
Domestic

06/02/04 BLUE UNIT SCHEDULE-TRANSPORTATION ORDER

DEPARTURE: Monday June 14, 2004 — 58 Cars
FROM STATION: WILKES-BARRE, PA — 4200 Tons
ROUTE: L&S WILKES-BARRE CP HARRISBURG NS KANSAS CITY BNSF Wichita Falls WTJR — 5139 Feet
TO STATION: **WICHITA FALLS, TX** — 1,961 Miles

REDACTED

The circus trainmaster is Gene Pettus
Please monitor the progress of the Circus Train to assure crews are available.
The Circus Train is to run ahead of schedule if possible and not held for departure times scheduled below.

	Last Show at WILKES-BARRE, PA	EDT	17:00	Sun 06/13/04
L&S	Train loaded and ready for switching.		00:01	Mon 06/14/04
	CIRCUS TRAINMASTER WILL PROVIDE SWITCHING			
	INSTRUCTIONS, AND CONFIRM DEPARTURE TIME			
L&S	Switching completed-Deliver to CP-CP to supply rear end device.		04:00	Mon 06/14/04
CP	Depart WILKES-BARRE, PA		05:00	Mon 06/14/04
CP	Arrive Harrisburg (Rockville-CP Wye), PA Deliver to NS		10:00	Mon 06/14/04
NS	Depart Harrisburg, PA		10:30	Mon 06/14/04
NS	Arrive Altoona, PA Crew Change Water Animals-head 4 cars		14:30	Mon 06/14/04
	Circus personnel on the ground at the head 4 and rear 18 cars			
NS	Depart Altoona, PA		15:30	Mon 06/14/04
NS	Arrive Conway, PA Crew Change		20:30	Mon 06/14/04
NS	Depart Conway, PA		20:45	Mon 06/14/04
NS	Arrive Cleveland, OH Crew Change		00:45	Tue 06/15/04
NS	Depart Cleveland, OH		01:00	Tue 06/15/04
NS	Arrive Bellevue, OH Crew Change		04:00	Tue 06/15/04
NS	Depart Bellevue, OH		04:15	Tue 06/15/04
NS	Arrive New Haven, IN Crew Change Water Animals-Head 4 cars	EDT	09:00	Tue 06/15/04
	Rest animals-Train on Wabash #3 Circus personnel on the ground at the head 4 and rear 18 cars			
NS	Depart New Haven, IN	CDT	13:00	Tue 06/15/04
NS	Arrive Peru, IN Crew Change		15:00	Tue 06/15/04
NS	Depart Peru, IN		15:15	Tue 06/15/04
NS	Arrive Decatur, IL Crew Change		21:00	Tue 06/15/04
NS	Depart Decatur, IL		21:15	Tue 06/15/04
NS	Arrive Moberly, MO Crew Change		04:45	Wed 06/16/04
NS	Depart Moberly, MO		05:00	Wed 06/16/04
NS	Arrive Kansas City, MO Deliver to BNSF Water Animals-Head 4 cars		12:01	Wed 06/16/04
	Circus personnel on the ground at the head 4 and rear 18 cars			
BNSF	Depart Kansas City, MO		13:00	Wed 06/16/04
BNSF	Arrive Arkansas City, KS Crew Change		20:00	Wed 06/16/04
BNSF	Depart Arkansas City, KS		20:15	Wed 06/16/04
BNSF	Arrive Alliance, TX Crew Change		04:00	Thu 06/17/04
BNSF	Depart Alliance, TX		04:15	Thu 06/17/04
BNSF	Arrive Wichita Falls, TX Deliver coaches to WTJR		09:15	Thu 06/17/04
WTJR	Spot Coaches ***LOCK AND BLUE FLAG STORAGE TRACKS***		11:00	Thu 06/17/04
BNSF	All Cars Spotted ***LOCK AND BLUE FLAG STORAGE TRACKS***	CDT	11:59	Thu 06/17/04
	Circus Opening WICHITA FALLS, TX First Show		19:30	Fri 06/18/04

The above schedule is essential to assure adequate set up time prior to the first show. If operating problems occur, please notify:
BILL MISIURA, Director Transportation Domestic
or JOE DEMIKE, Transportation Manager

REDACTED

NOTE TO RAILROAD OPERATING SUPERVISORS & TRAIN CREWS:

* Monitor circus radio at all times for operational and emergency communications.
* Use 90 pounds of trainline pressure. Allow extra time to COMPLETELY CHARGE passenger cars before making brake test. The air brakes are set for direct release. Locomotive brake cut out valve to be operated in "Freight" position.
* Water and electric lines must be disconnected by Circus Trainmaster or Circus Electrician BEFORE any cuts are made.
* Maximum speed is 60 MPH. Train is to run ahead of schedule if early and is not to be held for departure times.
* CONTROL SLACK DURING SWITCHING AND ROAD OPERATIONS AS ALL COACHES ARE OCCUPIED.

FELD 0004065

REDACTED

J. William Misiura
Director Transportation
Domestic

01/23/08 BLUE UNIT SCHEDULE-TRANSPORTATION ORDER

DEPARTURE: Monday October 18, 2004 — 58 Cars
FROM STATION: DENVER, CO — 4200 Tons
ROUTE: UP CHICAGO CSXT — 5139 Feet
TO STATION: **CLEVELAND, OH** — 1,448 Miles

The circus trainmaster is Gene Pettus Cell

Please monitor the progress of the Circus Train to assure crews are available.

The Circus Train is to run ahead of schedule if possible and not held for departure times scheduled below.

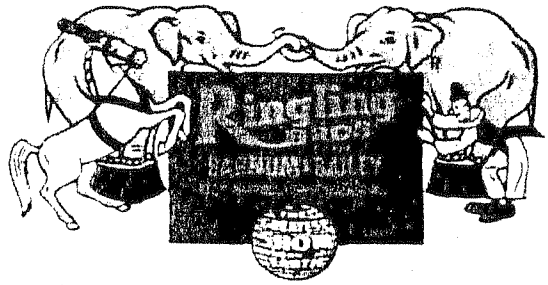
	Last Show at DENVER, CO	MDT	19:30	Sun 10/17/04
UP	Train loaded and ready for switching.		00:01	Mon 10/18/04
	CIRCUS TRAINMASTER WILL PROVIDE SWITCHING INSTRUCTIONS, AND CONFIRM DEPARTURE TIME			
UP	Switching completed-Railroad to supply rear end device.		06:30	Mon 10/18/04
UP	Depart Denver, CO		07:30	Mon 10/18/04
UP	Arrive Cheyenne, WY Crew Change-Water Animals-our tanks		12:00	Mon 10/18/04
	Circus personnel on the ground at the head 4 and rear 17 cars.			
UP	Depart Cheyenne, WY		13:00	Mon 10/18/04
UP	Arrive North Platte, NE Crew Change Fill water tanks-Head 4 cars	MDT	20:00	Mon 10/18/04
UP	Depart North Platte, NE	CDT	22:00	Mon 10/18/04
UP	Arrive Fremont, NE Crew Change		03:30	Tue 10/19/04
UP	Depart Fremont, NE		03:45	Tue 10/19/04
UP	Arrive Boone, IA Crew Change		10:30	Tue 10/19/04
UP	Depart Boone, IA		10:45	Tue 10/19/04
UP	Arrive East Ames Yard-Animal Rest Stop		11:15	Tue 10/19/04
	Circus personnel on the ground at the head 4 and rear 17 cars.			
UP	Depart East Ames Yard		18:00	Tue 10/19/04
UP	Arrive Clinton, IA Crew Change		23:00	Tue 10/19/04
UP	Depart Clinton, IA		23:15	Tue 10/19/04
UP	Arrive Chicago, IL Deliver to CSXT	CDT	04:00	Wed 10/20/04
CSXT	Depart Chicago, IL	EDT	07:00	Wed 10/20/04
CSXT	Arrive Garrett, IN Crew Change		15:00	Wed 10/20/04
	Circus personnel on the ground at the head 4 and rear 17 cars.			
CSXT	Depart Garrett, IN		16:00	Wed 10/20/04
CSXT	Arrive Williard, OH Crew Change Water Animals-Head 4 cars		22:00	Wed 10/20/04
CSXT	Depart Williard, OH		22:15	Wed 10/20/04
CSXT	Arrive Cleveland, OH		02:00	Thu 10/21/04
CSXT	Spot Coaches ***LOCK AND BLUE FLAG STORAGE TRACKS***		03:00	Thu 10/21/04
CSXT	All Cars Spotted ***LOCK AND BLUE FLAG STORAGE TRACKS***	EDT	04:00	Thu 10/21/04
	Circus Opening CLEVELAND, OH First Show		19:30	Fri 10/22/04

The above schedule is essential to assure adequate set up time prior to the first show. If operating problems occur, please notify:
BILL MISIURA, Director Transportation Domestic Work (941) 721-1240 Cell bmisiura@feldinc.com
or JOE DEMIKE, Transportation Manager Work (941) 721-1242 Cell jdemike@feldinc.com

NOTE TO RAILROAD OPERATING SUPERVISORS & TRAIN CREWS:

* Monitor circus radio at all times for operational and emergency communications.
* Use 90 pounds of trainline pressure. Allow extra time to COMPLETELY CHARGE passenger cars before making brake test. The air brakes are set for direct release. Locomotive brake cut out valve to be operated in "Freight" position.
* Water and electric lines must be disconnected by Circus Trainmaster or Circus Electrician BEFORE any cuts are made.
* Maximum speed is 60 MPH. Train is to run ahead of schedule if early and is not to be held for departure times.
* CONTROL SLACK DURING SWITCHING AND ROAD OPERATIONS AS ALL COACHES ARE OCCUPIED.

FEI 48667



J. William Misiura
Director Transportation
Domestic

01/23/08 BLUE UNIT SCHEDULE-TRANSPORTATION ORDER

DEPARTURE: Monday October 16, 2006 — 59 Cars
FROM STATION: DENVER, CO — 4280 Tons
ROUTE: UP CHICAGO CSXT — 5225 Feet
TO STATION: **CLEVELAND, OH** — 1,448 Miles

The circus trainmaster is Alex Kettles Cell
Please monitor the progress of the Circus Train to assure crews are available.
The Circus Train is to run ahead of schedule if possible and not held for departure times scheduled below.

	Last Show at DENVER, CO	MDT	19:30	Sun 10/15/06
UP	Train loaded and ready for switching.		00:01	Mon 10/16/06
	CIRCUS TRAINMASTER WILL PROVIDE SWITCHING INSTRUCTIONS, AND CONFIRM DEPARTURE TIME			
UP	Switching completed-Railroad to supply rear end device.		06:30	Mon 10/16/06
UP	Depart Denver, CO		07:30	Mon 10/16/06
UP	Arrive Cheyenne, WY Crew Change-Water Animals-our tanks		12:00	Mon 10/16/06
	Circus personnel on the ground at the head 4 and rear 17 cars.			
UP	Depart Cheyenne, WY		12:30	Mon 10/16/06
UP	Arrive North Platte, NE Crew Change Fill water tanks-Head 4 cars	MDT	20:00	Mon 10/16/06
UP	Depart North Platte, NE	CDT	22:00	Mon 10/16/06
UP	Arrive Fremont, NE Crew Change		03:30	Tue 10/17/06
UP	Depart Fremont, NE		03:45	Tue 10/17/06
UP	Arrive Boone, IA Crew Change		10:30	Tue 10/17/06
UP	Depart Boone, IA		10:45	Tue 10/17/06
UP	Arrive East Ames Yard-Animal Rest Stop-Spot train on track next to the road		11:15	Tue 10/17/06
	Circus personnel working on the ground along the circus train.			
UP	Depart East Ames Yard		15:30	Tue 10/17/06
UP	Arrive Clinton, IA Crew Change		21:00	Tue 10/17/06
UP	Depart Clinton, IA		21:15	Tue 10/17/06
UP	Arrive Chicago, IL Barr Yard - Deliver to CSXT	CDT	02:00	Wed 10/18/06
CSXT	Depart Chicago, IL Barr Yard	EDT	04:00	Wed 10/18/06
CSXT	Arrive Garrett, IN Crew Change		14:00	Wed 10/18/06
	Water supplied by tanks on stock cars. Circus personnel working on the ground along the circus train.			
CSXT	Depart Garrett, IN		14:30	Wed 10/18/06
CSXT	Arrive Willard, OH Crew Change Water Animals-Head 4 cars		22:00	Wed 10/18/06
CSXT	Depart Willard, OH		22:15	Wed 10/18/06
CSXT	Arrive Cleveland, OH		02:00	Thu 10/19/06
	CSXT Cleveland Terminal to arrange for NS pilots to reach 26th Street Yard			
CSXT	Spot Coaches ***LOCK AND BLUE FLAG STORAGE TRACKS***		03:00	Thu 10/19/06
CSXT	All Cars Spotted ***LOCK AND BLUE FLAG STORAGE TRACKS***	EDT	04:00	Thu 10/19/06
	Circus Opening CLEVELAND, OH	First Show	19:30	Fri 10/20/06

The above schedule is essential to assure adequate set up time prior to the first show. If operating problems occur, please notify:
BILL MISIURA, Director Transportation Domestic Work (941) 721-1240 Cell misiura@feldinc.com
or JOE DEMIKE, Transportation Manager Work (941) 721-1242 Cell jdemike@feldinc.com

FEI 48749

NOTE TO RAILROAD OPERATING SUPERVISORS & TRAIN CREWS:

* Monitor circus radio at all times for operational and emergency communications.
* Use 90 pounds of trainline pressure. Allow extra time to COMPLETELY CHARGE passenger cars before making brake test. The air brakes are set for direct release. Locomotive brake cut out valve to be operated in "Freight" position.
* Water and electric lines must be disconnected by Circus Trainmaster or Circus Electrician BEFORE any cuts are made.
* Maximum speed is 60 MPH. Train is to run ahead of schedule if early and is not to be held for departure times.
* CONTROL SLACK DURING SWITCHING AND ROAD OPERATIONS AS ALL COACHES ARE OCCUPIED.

J. William Misiura
Director Transportation
Domestic

01/23/08

BLUE UNIT SCHEDULE-TRANSPORTATION ORDER

DEPARTURE: Monday August 20, 2007
FROM STATION: FT. WORTH, TX
ROUTE: BNSF MEMPHIS CSXT PATIO RJCC
TO STATION: **LEXINGTON, KY**

60 Cars
4335 Tons
5319 Feet
1229 Miles

The circus trainmaster is Alex Kettles Cell

Please monitor the progress of the Circus Train to assure crews are available.

The Circus Train is to run ahead of schedule if possible and not held for departure times scheduled below.

BNSF	Equipment spotted for loading before (or as arranged with Circus Trainmaster)		11:00	Sun 08/19/07
	Last Show at FT. WORTH, TX	CDT	18:30	Sun 08/19/07
BNSF	Train loaded and ready for switching.		00:01	Mon 08/20/07
	CIRCUS TRAINMASTER WILL PROVIDE SWITCHING			
	INSTRUCTIONS, AND CONFIRM DEPARTURE TIME			
BNSF	Switching completed-Railroad to supply rear end device.		04:00	Mon 08/20/07
BNSF	Depart FT. WORTH, TX		05:00	Mon 08/20/07
BNSF	Arrive Gainesville, TX Crew Change		06:30	Mon 08/20/07
BNSF	Depart Gainesville, TX		06:45	Mon 08/20/07
BNSF	Arrive Tulsa, OK Crew Change		17:00	Mon 08/20/07
BNSF	Depart Tulsa, OK		17:15	Mon 08/20/07
BNSF	Arrive Springfield, MO Crew Change		23:15	Mon 08/20/07
BNSF	Depart Springfield, MO		23:30	Mon 08/20/07
BNSF	Arrive St. Louis, MO	CDT	08:00	Tue 08/21/07
	Water head 4 cars & Animal Rest Stop (6 hours)			
TRRA	BNSF to CSX Interchange		14:00	Tue 08/21/07
CSXT	Depart St. Louis, MO		16:00	Tue 08/21/07
CSXT	Arrive Avon, IN Crew Change 1,000 mile inspection	EDT	01:00	Wed 08/22/07
CSXT	Depart Avon, IN		01:15	Wed 08/22/07
CSXT	Arrive Cincinnati, OH Crew Change		06:30	Wed 08/22/07
CSXT	Depart Cincinnati, OH		06:45	Wed 08/22/07
CSXT	Arrive Patio, KY Deliver to RJCC Train will reverse direction		10:45	Wed 08/22/07
RJCC	Depart Patio, KY		11:45	Wed 08/22/07
RJCC	Arrive LEXINGTON, KY		13:30	Wed 08/22/07
RJCC	Spot Coaches ***LOCK AND BLUE FLAG STORAGE TRACKS***		14:30	Wed 08/22/07
RJCC	All Cars Spotted ***LOCK AND BLUE FLAG STORAGE TRACKS***	EDT	15:30	Wed 08/22/07
	Circus Opening LEXINGTON, KY First Show		19:00	Thu 08/23/07

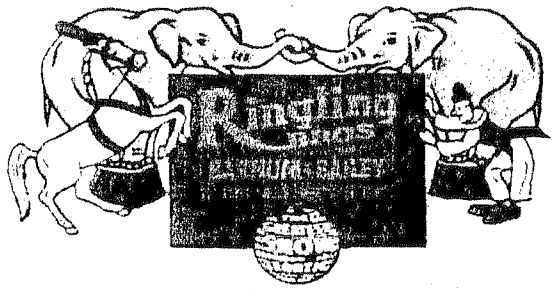
The above schedule is essential to assure adequate set up time prior to the first show. If operating problems occur, please notify:
BILL MISIURA, Director Transportation Domestic Work (941) 721-1240 Cell omisiura@feldinc.com
or JOE DEMIKE, Transportation Manager Work (941) 721-1242 Cell demike@feldinc.com

FEI 48719

NOTE TO RAILROAD OPERATING SUPERVISORS & TRAIN CREWS:

* Monitor circus radio at all times for operational and emergency communications.
* Use 90 pounds of trainline pressure. Allow extra time to COMPLETELY CHARGE passenger cars before making brake test. The air brakes are set for direct release. Locomotive brake cut out valve to be operated in "Freight" position.
* Water and electric lines must be disconnected by Circus Trainmaster or Circus Electrician BEFORE any cuts are made.
* Maximum speed is 60 MPH. Train is to run ahead of schedule if early and is not to be held for departure times.
* CONTROL SLACK DURING SWITCHING AND ROAD OPERATIONS AS ALL COACHES ARE OCCUPIED.

1313 17th STREET EAST-PALMETTO, FLORIDA 34221 (941) 721-1240 FAX (941) 722-1349



J. William Misiura
Director Transportation
Domestic

01/23/08 # BLUE UNIT SCHEDULE-TRANSPORTATION ORDER

DEPARTURE: Monday May 14, 2007
FROM STATION: ROCHESTER, NY
ROUTE: RSR ROCHESTER CSXT MEMPHIS UP
TO STATION: **LITTLE ROCK, AR**

60 Cars
4335 Tons
5319 Feet
1212 Miles

The circus trainmaster is Alex Kettles Cell

Please monitor the progress of the Circus Train to assure crews are available.

The Circus Train is to run ahead of schedule if possible and not held for departure times scheduled below.

RSR	Equipment spotted for loading before (or as arranged with Circus Trainmaster)		11:00	Sun 05/13/07
	Last Show at ROCHESTER, NY	EDT	17:00	Sun 05/13/07
RSR	Train loaded and ready for switching.		01:00	Mon 05/14/07
	CIRCUS TRAINMASTER WILL PROVIDE SWITCHING			
	INSTRUCTIONS, AND CONFIRM DEPARTURE TIME			
RSR	Switching completed-Deliver to CSXT-CSXT to supply rear end device.		06:00	Mon 05/14/07
CSXT	Depart ROCHESTER, NY		07:00	Mon 05/14/07
CSXT	Arrive Buffalo, NY Crew Change		09:15	Mon 05/14/07
CSXT	Depart Buffalo, NY		09:30	Mon 05/14/07
CSXT	Arrive Cleveland, OH Crew Change-Water Animals Head 4 cars		14:00	Mon 05/14/07
	Water supplied by tanks on stock cars			
	Circus personnel working on the ground along the circus train.			
CSXT	Depart Cleveland, OH		14:30	Mon 05/14/07
CSXT	Arrive Indianapolis, IN		23:30	Mon 05/14/07
	Spot train at Hawthorn Yard, rest animals			
CSXT	Depart Indianapolis, IN		13:00	Tue 05/15/07
CSXT	Arrive Evansville, IN Crew Change		22:00	Tue 05/15/07
CSXT	Depart Evansville, IN		22:15	Tue 05/15/07
CSXT	Arrive Nashville, TN Crew Change		06:30	Wed 05/16/07
CSXT	Depart Nashville, TN		06:45	Wed 05/16/07
CSXT	Arrive Bruceton, TN Crew Change		11:00	Wed 05/16/07
	Water supplied by tanks on stock cars			
	Circus personnel working on the ground along the circus train.			
CSXT	Depart Bruceton, TN		11:30	Wed 05/16/07
CSXT	Arrive Memphis, TN Deliver to UP	EDT	17:30	Wed 05/16/07
UP	Depart Memphis, TN	CDT	18:00	Wed 05/16/07
UP	Arrive LITTLE ROCK, AR		00:01	Thu 05/17/07
UP	Spot Coaches ***LOCK AND BLUE FLAG STORAGE TRACKS***		01:30	Thu 05/17/07
UP	All Cars Spotted ***LOCK AND BLUE FLAG STORAGE TRACKS***	CDT	02:30	Thu 05/17/07

The above schedule is essential to assure adequate set up time prior to the first show. If operating problems occur, please notify:
BILL MISIURA, Director Transportation Domestic Work (941) 721-1240 Cell bmisiura@feldinc.com
or JOE DEMIKE, Transportation Manager Work (941) 721-1242 Cell jdemike@feldinc.com

FEI 48729

NOTE TO RAILROAD OPERATING SUPERVISORS & TRAIN CREWS:

* Monitor circus radio at all times for operational and emergency communications.
* Use 90 pounds of trainline pressure. Allow extra time to COMPLETELY CHARGE passenger cars before making brake test. The air brakes are set for direct release. Locomotive brake cut out valve to be operated in "Freight" position.
* Water and electric lines must be disconnected by Circus Trainmaster or Circus Electrician BEFORE any cuts are made.
* Maximum speed is 60 MPH. Train is to run ahead of schedule if early and is not to be held for departure times.
* CONTROL SLACK DURING SWITCHING AND ROAD OPERATIONS AS ALL COACHES ARE OCCUPIED.