REPORT to DETERMINE PHYSICAL CONDITION and SUITABILITY to PERFORM FOLLOWING INSPECTION of RINGLING BROTHERS and BARNUM & BAILEY CIRCUS (RBBBC) ELEPHANTS at the LOS ANGELES STAPLES CENTER the WEEK of JULY 11-17, 2012

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Summary-
A request was made by the City of Los Angeles Department of Animal Services to inspect nine female Asian elephants (*Elephas maximus*) to determine their physical condition and suitability to perform. Criteria utilized to make this evaluation were derived from the standards of the Association of Zoos and Aquariums (AZA), and policies of the American Veterinary Medical Association (AVMA). Additional criteria consisted of observations during the elephants' unloading procedure, examination of the rail cars in which the elephants were transported, visual inspection of the elephants on the afternoon following their arrival, review of historical medical records, comparison to behaviors noted from past performances of six of the nine elephants at a previous venue location in Charlotte, North Carolina in January 2011, and consideration for performance activities in which they would be engaged during the period of July 11-17, 2012 at the Staples Center. Consideration as well was given to conditions observed during the inspection process that are a result of the standard of care for these elephants that the relevant scientific community has concluded typically causes injury and harm. A review of the findings indicates that two of the elephants, Nichole and Karen, 36 and 43 years of age respectively are in a condition where it would be beneficial for them to be removed from performing altogether. According to available documentation, elephants Juliette, 20 years of age, Bonnie, 18 years of age, Kelly Ann, 16 years of age, Sara, 11 years of age, and Rudy, 10 years of age, all have a history of foot, toe nail, and musculoskeletal issues. It is reasonable to predict their health status will progressively worsen if the current standard of care is perpetuated. Their standard of care should be adjusted to reflect the methodologies now recognized as appropriate with regard to tethering or chaining practices, transport space, and species-typical biology and behavior. In addition an effort should be made to ameliorate the hard and unyielding surfaces on which they perform and are typically maintained. Otherwise they too should be removed from performing. Until that time, performances by these or any RBBBC elephants (including the remaining two young elephants Mable, 6 years of age and Sundara, nearly 4 years of age), it is not beneficial for them to engage in any rigorous or repetitive activity that includes climbing upon metal tubs or stools, turning on spindles, performing head stands, standing upon one another, sitting up on tubs or unyielding surfaces, standing up on their hind limbs, sitting upon one another, being mounted by another elephant or finally, being walked at other than a natural pace.

Methodology-
Methodology consisted of observations during the elephants' unloading procedure, examination of the rail cars in which the elephants were transported, review of video footage of the elephants' street walk to the Staples Center, visual inspection of the

elephants on the afternoon following their arrival, review of historical medical records and more current medical records of one of the elephants (Bonnie), comparison to past performances of six of the nine elephants, and observation of the elephants' first performance.

Findings-

Nine female Asian elephants were observed during a rail car unloading process. Prior to unloading, several of the elephants in the rail cars demonstrated stereotypic behavior. This manifested as exaggerated swaying from side to side for reasons that were unclear. Stereotypic behavior is repetitive meaningless activity, and it is reported that, "Nail cracks are usually the result of a repetitive movement that puts abnormal pressure on the nail. The environment of the elephant's enclosure can exacerbate this pressure. An example is the stereotypical 'rocking' elephant, where an elephant stands in one place on a hard surface and rocks back and forth. This puts abnormal pressure on the lateral toes of the front feet, eventually leading to nail cracks."[1] Four of the elephants, Sundara, Mable, Rudy, and Nichole were placed directly into a transport vehicle and taken to the Staples Center. The remaining five elephants were positioned in a line for a walk 3.2 miles thru the streets of Los Angeles during early morning hours (in darkness) to a temporary tent facility at Staples Center (where they were joined by the elephants transported by truck), tethered or chained in spaces that appeared to be comparable to that provided in the rail cars.

Following unloading all elephants appeared stiff, initially unsteady, and not exhibiting a full range of motion in their limbs. In observing the five elephants (Karen, Sara, Juliette, Bonnie, and Kelly) lined up and walking from the train, each initially demonstrated uneven gaits, weakened or uneven stride length, poor posture and balance indicating that they were experiencing varying degrees of lameness, soreness and pain. The elephants were unloaded after midnight following more than 24 hours tethered or chained in transit from their previous appearance location in Fresno, CA. An examination of the interior of the rail cars revealed one car (Fig. 1) measuring 9 feet and 8 inches in width by 78 feet in length, or just over 750 square feet. In this car five elephants had been tethered or chained, allowing each elephant approximately 150 square feet on average. In a second car one elephant, Kelly Ann, had been tethered or chained by herself in a space that measured 9 feet and 5 inches in width by 19 feet in length, or approximately 180 square feet. In a third car three elephants, Mable, Sundara and Bonnie were tethered or chained in a space measuring 9 feet and 5 inches by 29 feet or approximately 275 square feet allowing each elephant 90 square feet on average. Study of the standard of care for RBBBC Asian elephants revealed a touring schedule lasting up to a twelve months period of time where the elephants appear in forty or more cities, while being transported in severely restricted space on railway cars tethered by chains.[2] Elephants like those observed in Los Angeles travel for up to or over 50 days per year chained in railway cars while being transported between performance locations. When the elephants are not performing they are tethered or chained or maintained on unyielding asphalt or concrete surfaces, or chained on

wooden pallets in a temporary tent like that seen at the Staples Center. The AZA Standards for Elephant Management and Care minimum standards for indoor space recommend that at least 400 sq. ft. for a single animal, and approximately 800 sq. ft. for two animals and so on, be provided.[3] The rail car floors featured unyielding surfaces that as of the train's arrival in Los Angeles contained hay and saw dust contaminated with solid fecal waste and urine (Fig. 2). In the introduction to the veterinary text, The Elephant's Foot, Prevention and Care of Foot Conditions in Captive Asian and African Elephants (Csuti, 2001), which is based upon information presented at The First North American Conference on Elephant Foot Care and Pathology held in March, 1998, it is stated in the introduction that, "There is a general consensus that lack of exercise, long hours standing on hard substrates, and contamination resulting from standing in their own excreta are major contributors to elephant foot problems."[4] In a study by Brockett, R.C., et. al. at Zoo Atlanta the authors indicate, "Despite the many reasons for chaining elephants, much of the literature suggests that chaining limits activity, prevents natural interactions between animals, and may be detrimental to both psychological and physical health." [5]

The AVMA policy on Elephant Guides and Tethers states, "Tethers provide a means to temporarily limit an elephant's movement for elephant safety or human safety and well-being. They can be constructed of rope, chain, or nylon webbing, and their use and fit should not result in discomfort or skin injury. Forelimb tethers should be loose on the foot below the ankle joint, and fit snugly on the limb between the ankle and knee joints. Tether length should be sufficient to allow the elephant to easily lie down and rise. The AVMA only supports the use of tethers for the shortest time required for specific management purposes."[6]

The AVMA policy on Physical Restraint of Animals states, "Humane and safe physical restraint is the use of manual or mechanical means to limit some or all of an animal's normal voluntary movement for the purposes of examination, collection of samples, drug administration, therapy, or manipulation. The method used should provide the least restraint required to allow the specific procedure(s) to be performed properly, should minimize fear, pain, stress, and suffering for the animal, and should protect both the animal and personnel from harm."[7]

Regarding future elephant management care strategy the AZA Board of Directors on 12 August 2011 unanimously approved, "As soon as possible and no later than September 1, 2014, elephant care providers at AZA facilities with elephants shall not share the same unrestricted space with elephants, except for certain well-defined circumstances…"[8] What this means is that the AZA has adopted new guidelines that will require its members who maintain elephants to institute protective contact management schemes, thus eliminating free contact or direct contact management programs which rely upon physical dominance over elephants reinforced with discipline, and the use of the bull hook. The underlying reason for this change is for the safety of elephant care takers, and employees as well as the elephants.

Review of video recordings (http://vimeo.com/m/45507240) of the walk to the Staples Center from the rail cars revealed the elephants had increased their walking pace and demonstrated improved mobility. Due to night lighting conditions, glare from street lights, and the rapid walk, it was difficult to obtain an accurate assessment of each elephant from the video. However observations clearly seen on the video were consistent with observations noted at a previous performance location observing four of the nine elephants at the Staples Center (Nichole, Juliette, Kelly Ann, and Sara, and a fifth elephant named Irvin) on a street walk in Charlotte, North Carolina January 2011: The elephants were walked rapidly, not having an opportunity or interest to examine or explore their new environment. Each elephant, other than the lead elephant held the tail of the elephant in front with its trunk. This was inconsistent throughout the walk, as the elephants were not always able to maintain a close enough proximity between them. As was noted in the Charlotte, NC viewing experience although moving quickly, the elephants walked as if fatigued in what would be described as a sleepy daze, stupor, or trance (Fig. 3). They did not appear to demonstrate any interest in their new surroundings by looking around or smelling with their trunks. There was no notable tactile or vocal communication between elephants during the walk beyond tail holding, which is not known to be a species-typical behavior. The elephants in general seemed to require minimal if any correction in direction or activity while demonstrating rote behavior as they walked in line to a temporary holding tent at the Staples Center.

Later in the day a visual inspection of the elephants was performed at the Staples Center which included observation of the elephants' right and left sides, front and rear view, and observation of the feet, toe nails, and soles of each elephant. Following the visual inspection a brief review was completed of one of the elephants' (Bonnie) recent medical record. Due to time restrictions the balance of the elephants' recent medical records did not take place. Further access to review the elephants' medical records was refused by Feld Entertainment, Inc. which prohibited as well behavioral observations of the elephants following the opening night performance.

Findings noted during the visual inspection of the nine elephants revealed varying degrees of uneven sole wear in the rear foot soles as illustrated with Karen (Fig. 4a, b, & c), Juliette (Fig. 5a, b, & c), Nichole (Fig. 6a, b, & c), Kelly Ann (Fig. 7a) which included a left rear vertical toe nail crack (Fig. 7b) observed during the preshow performance and a right rear toe nail crack that extended beneath the toe nail nearly to the sole (Fig. 7c-arrow), Mable (Fig. 8a, b, & c), and Sundara (Fig. 9a, b, & c). Uneven sole wear can be the result of abnormal conformation, arthritis, stereotypic behavior, or previous injury. In discussing foot disorders involving the sole of the elephant, Fowler (2006) makes reference to stereotypic behavior, "If thinning of the sole is noticed watch the elephant's behavior. If closely observed, it may be determined that the elephant constantly turns in a specific location and in the same direction (stereotypic behavior). This causes excessive wear on a specific area of the sole."[9] Fowler further notes, "Another predisposing factor is conformational fault or an injury that causes the elephant to walk in such a manner as to produce excessive wear on a

segment of the slipper. An elephant may become habituated to pawing with one foot, which may wear a toe nail and the sole excessively. A shuffling gait brought about by arthritis may also produce uneven wear." On Nichole's right front foot (Fig. 10a) was a relatively deep, pared out toe nail crack that appeared to be under treatment to control a nail bed infection. On Nichole's left front sole (Fig. 10b) there was an application of Sole-Guard, a horse hoof care product developed for support of the unshod horse foot to create a protective coating that bonds to the foot. Bonnie had Sole-Guard protective compound applied to her right and left front soles (Fig. 11a, b & c), and a toe nail crack on a left rear toe nail (Fig. 11d-arrow).

Historical medical records of seven of the nine elephants specific to this inspection revealed that Bonnie has had sole lesions, toe nail cracks and lameness. Juliette has had chronic front and rear limb issues, lameness, toe nail cracks, and noted uncomfortable during hind leg stands. Kelly Anne has had toe nail cracks; lameness, and been stiff legged. Rudy has had toe nail cracks, incurred multiple lacerations and trauma running through support beams. Sara has had toe nail cracks, and chronic lameness since 2009.

Both Karen and Nichole were involved in the case, (Civ. No. 03-2006 (D.C.C.) American Society for the Prevention of Cruelty to Animals, et. al. v. Ringling Brothers and Barnum & Bailey Circus, et. al.) and a review of their medical history can be located at http://www.bornfreeusa.org/a1a6a4 exhibits.php Observations from this report concerning Karen indicate she has been with RBBBC since 1969. There are little or no medical records available for review prior to the mid-1990s. Karen has had severe lameness in her right rear limb and in 1997 was restricted from hind leg stands. She has had toe nail cracks and chronic nail bed abscesses. In 1999 the heels of her rear feet were worn down to pink tissue, and she was noted to drag her feet when walking. Once she slipped during rehearsal causing lameness and discomfort and was taken out of the show. She has been reluctant to perform some tricks that require hind limb strength, demonstrating residual pain from previous injury. Karen has had intermittent lameness in the right rear leg, assumed to be a pulled muscle. She has had intermittent lameness of the right hind leg, assumed to be arthritis. In addition to eye and dental problems, as recent as 2006 she has had toe nail cracks, and appears sore in her right hip, and noted to be uncomfortable.

Observations from the same report concerning Nichole indicate she has been with RBBBC since 1980. There are little or no medical records available for review prior to 1994. In 1999 Nicole was treated for possible tuberculosis. She has had toe nail cracks, chronic severe nail bed abscesses, and episodes of interdigital swelling, and a history of left front leg lameness, and noted to be extremely stiff legged. Nicole has had stiffness in her right hind leg causing her to go out of the show, thought to be caused from trauma of unknown origin, resulting in swinging her leg in an arc when she walks. Her right front leg has been stiff. Nichole has a history of chronic bedsore lesions on both sides of her face and left hip. Karen and most likely Nichole as well,

suffer from arthritis, which results in chronic pain, impaired limb function, and are in effect crippled, and given their age, it is reasonable to assume they most likely suffer as well from degenerative joint disease. They should be removed from performing.

The brief review during the current inspection of Bonnie's medical record indicates that she suffers from the same ongoing chronic foot problems observed for Karen and Nichole. It is therefore reasonable to conclude a review of the current medical records for Kelly Ann, Juliette, Sara, and Rudy, which was refused by Feld Entertainment, Inc. during the course of inspection, will reveal similar findings.

During observations of the first performance the behaviors exhibited by the elephants were forced and non-species typical for reasons that were not clear. The preshow performance of Kelly Ann was approximately eight to ten minutes. She was guided by a handler in a small intimate semicircular stage on one end of the arena floor. She painted with her trunk holding a small paint brush applying a variety of colors to art paper held on an easel. Just as was observed in Charlotte, NC (Fig. 12a) guidance by the handler with a bull hook was negligible (Fig. 12b). In Charlotte, Kelly Ann was observed to have a vertical crack on a toe nail of her right rear foot (Fig. 12c arrow). In both performance experiences Kelly Ann seemed uninterested in exploring her surroundings. Her brief appearance was completed without hesitation, and she seemed intent and mechanical in completing a choreographed routine. In observing her eyes I did not see her look at or focus on anything or exhibit species-typical behaviors during the preshow event. Kelly Ann's performance took place on the unyielding surface of the arena floor. It was unclear as to the purpose of the different behaviors exhibited during this preshow appearance.

The evening performance activities of the elephants noted on video recordings (http://www.petaav.com/4preview/RBBB_Circus_Opening_Night_Show_raw_preview.htm) at the Staples Center was similar to the performances observed in Charlotte, NC where elephants participated in non-species typical behaviors that were athletic, repetitive and fast paced, particularly when several elephants were performing in groups. These behaviors were potentially harmful due to the cumulative effect when performed time and time again, causing wear and tear on limb joints, and having the ability to exacerbate any prior injuries. When elephants were in groups they performed rapidly together circling counterclockwise in a ring (Fig. 13a), and counterclockwise while turning in place as individuals when timing appeared critical for each elephant to be at a specific spot at a specific time choreographed to music. The elephants climbed up on metal stools, always turning counter clockwise (Fig. 13b), climbing up on the back of another elephant with their front feet while standing on a stool (Fig. 13c), sitting down on their pelvic region on the arena floor or on a stool (Fig. 14a). When the elephants laid down it was always on their left side (Fig. 14b). In Charlotte, NC Nichole was noted standing on a stool, as did other elephants, with her four feet positioned unnaturally beneath her instead of squarely beneath her body (Fig. 14c). When using the spindle, the elephants appeared to always place their right front foot on the spindle

and rotate counterclockwise (Fig. 15a). As was noted in Charlotte, NC when the elephants worked in performances at a rapid pace (Fig. 15b) any lameness or stiffness, seen when walking slowly, was less noticeable, especially when several elephants were working together at the same time (Fig. 16).

Former RBBBC veterinarian, West, G., in his chapter on the musculoskeletal system in Biology, Medicine and Surgery of Elephants (Fowler and Mikota, 2006) noted, "Mechanical trauma due to repetitive loading stress on hard surfaces is probably a major factor in the development of joint disease."[10] In the veterinary text Diseases of Exotic Animals (Wallach, J.D. and Boever, W.J., 1983) the authors write, concerning orthopedics in equids, tapirs, elephants and hippopotamus, "Osteoarthritis occurs in older equine, zebra and pachyderm. The articular cartilage is usually destroyed, leaving a raw painful boney surface. Diagnosis is usually made by clinical signs and a history of reoccurring lameness that becomes reduced as the animal 'warms up.' "[11]

A recent United States Department of Agriculture inspection report in November, 2010 when RBBBC was a performing in Chicago indicated one of the elephants, Sara, nine years old at the time, was intermittently prescribed analgesics (including performance days) for chronic lameness or stiffness noted since early 2009.[12] This has been a practice consistently documented in RBBBC elephants' medical records where non-steroidal anti-inflammatory drugs (NSAIDS) are administered for analgesia and pain in order to facilitate performance. These medications, while providing relief for pain, also serve to mask the pain. The aim of any therapy should be to remove the inciting cause for pain, not simply to mask it. These factors call into question whether RBBBC elephants are receiving adequate veterinary care and are being caused to suffer. It was noted in the November, 2010 USDA report that, "The records (medical) show a lack of adequate diagnostics, treatment plans, and follow-up treatments necessary to provide adequate veterinary care." The same inspection report goes on to indicate, "The record for 8 year old Asian elephant Juliette with chronic stiffness/lameness requiring repeated treatment with analgesics, particularly prior to unloading from transport vehicle." Again with regards Juliette, the report goes on to state, "Record for 8 yr old Asian elephant Juliette with chronic stiffness/lameness requiring repeated treatment with analgesics."

Regarding the non species-typical behaviors observed during the walk to the Staples Center and during their performance: In a 2007 issue of the Journal of the American Veterinary Medical Association, the American Veterinary Medical Association's Animal Welfare Principles were published.[13] "The AVMA, as medical authority for the health and welfare of animals, offers the following eight integrated principles for developing and evaluating animal welfare policies, resolutions, and actions." One of these principles states, "Animals must be provided water, food, proper handling, health care, and an environment appropriate to their care and use, with species-typical biology and behavior.

Two additional AVMA Animal Welfare Principles state:

- Animals should be cared for in ways that minimize fear, pain, stress, and suffering.
- Procedures related to animal housing, management, care, and use should be continuously evaluated, and when indicated, refined, or replaced.

The inspection of the RBBBC elephants at the Staples Center appears consistent with observations made by West, G. in his chapter on the musculoskeletal system in Biology, Medicine and Surgery of Elephants (Fowler and Mikota 2006), in a discussion on examination of an elephant herd, where he writes, "Evaluation of the husbandry practices of an elephant herd is a critical part of the initial examination, and a comprehensive medical history is an important part of this initial assessment. A variety of questions regarding the herd medical history and husbandry practices should be asked, including the following. What is the incidence of lameness in the herd? Is the herd in a breeding situation? How are the animals housed and restrained? What are the exhibit substrates? Do the animals participate in demonstrations or shows? Are there appropriate opportunities for appropriate amounts of exercise or digging behavior? What is the size of the exhibit? What are the animals being fed? What are the body weights of individuals? And what are the ages of the individuals?

Conclusion-

The RBBBC elephants inspected suffer unneeded existing detrimental medical conditions and should not participate in forced, non species-typical behaviors that are repetitive rigorous physical activities under the current standard of care and living conditions. An effective standard of care is one that is primarily preventative.

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Appendices:

AZA Standards for Elephant Management and Care

AVMA policy on Elephant Guides and Tethers

AVMA policy on Physical Restraint of Animals

AVMA. policy on Animal Welfare Principles.

City of Los Angeles, Department of Animal Services Inspection Authorization Memorandum

Maximizing Occupational Safety of Elephant Care Professionals at AZA-accredited and AZA-certified Facilities

Thompson, Tracy. Nov 22, 2010. United States Department of Agriculture Animal and Plant Health Inspection Service, Inspection Report. Feld Entertainment, Inc. Routine Inspection.