

Boldstar Infrared Services Helps Zoo Staff with Ailing Elephant

Bowmanville Zoo Attraction Vance the Elephant (Article Below)



Pachyderm Leg Ailment Diagnosis with Infrared Thermography

Bowmanville Zoo, Bowmanville Ontario: Something just wasn't right with one of the Bowmanville Zoo's oldest attractions, Vance the pachyderm. Vance, a 29-year-old Asian elephant was exhibiting symptoms of leg troubles. Weighing in at almost 10,000 pounds and displaying majestic 5-foot tusks, Vance literally is one of the biggest attractions at the zoo. Zoo curators Wendy Korver and Michael Hackenberger had been noticing Vance reluctance to apply his full weight on his front right leg. It was unsure however exactly what part of Vance's large right leg was the problem. Irritation in either of the foot, knee or hip joints would all cause Vance to favor the leg as he was doing. An attempt to use infrared thermography inspection techniques as a method of pinpointing the location of Vance's leg woes was suggested. Knowing the exact location of irritated, inflamed tissue offers great advantages to the Zoo owners and veterinary staff in hopes of correcting the elephant's condition. Widely excepted in the equine field for diagnosis of various conditions in horses, infrared thermography is capable of detecting small surface temperature differences. By displaying the temperature differences as an image, thermography can zero in on inflamed and irritated tissue. On October 21, 2001 under overcast skies, an infrared thermal imager was turned on and pointed at Vance. Instantly it was noted that Vance's front right leg was indeed the problem and was seen "operating" at an elevated temperature. A closer look and a few adjustments of the imager's temperature ranges for better temperature resolution indicated the source of the troubles. Vance had a sore front right foot. Down at the base of the foot, on the right front side. Infrared images of the bottom of Vance's huge front feet were also taken to rule out any foreign object concerns such as a nail or sharp stick as the cause of the front foot irritation. The images of the bottoms of Vance's feet did not indicate any irritation and Vance's veterinary staff could concentrate on the front right foot condition. Further inspection of Vance's bulky frame also located a smaller irritation on Vance's rear right foot and front left shoulder. Both conditions are suspect linked to the front right foot condition and Vance's favoring of the leg over the recent past. Corrective action by the zoo's caretakers has been developed and put into action to help Vance's foot troubles. Thermography will be

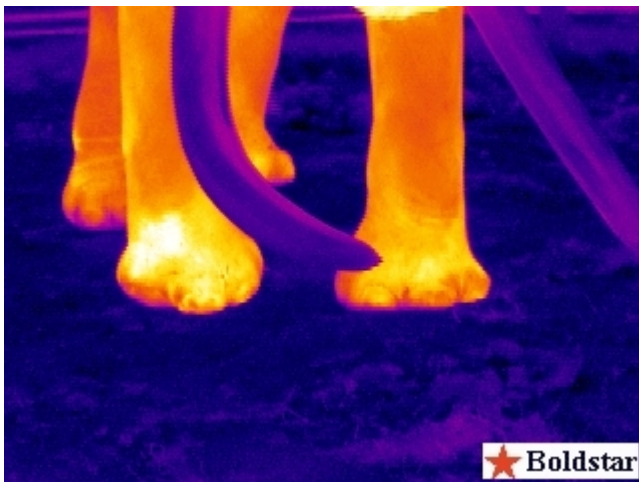
used in follow up examinations to study and prove the effectiveness of treatment.- Boldstar Infrared Services: www.boldstarinfrared.com

Update: Further inspection of the identified lower foot region found that Vance had a dislocated toe. The ailment was then treated normally and Vance is well on his way to recovery.

Infrared Images



elephant right side
- inflammation located in front right leg, specifically the lower foot area.



elephant front feet
- thermography proved excellent for comparing foot conditions. Here the front right foot is easily compared to the left foot. Problem area is the right lower foot area (white section)



front left hip
- elevated front left hip temperatures noted. Suspect cause: left hip and leg taking weight not supported due to front right foot problem.