

Observations of captive Siberian Cranes harnessed with back pack satellite transmitters

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In July 1994, replica Platform Transmitting Terminals (PTTs) were attached as backpacks to 2 adult male Siberian cranes (*Grus leucogeranus*) at the International Crane Foundation (ICF) to assess acclimation behaviors and harness durability for one year. Replica PTTs were also attached to three parent-reared ICF Siberian Crane juveniles to assess fit over a period of six months. These individuals are approximately 70 days old and estimated to be grown enough to carry the PTT. The Siberian Cranes stop growing at about 70 days. Data was collected on each individual during 30-minute observation periods using focal animal sampling. Each replica PTT unit was modeled after the Nippon Telegraph and Telephone Corporation PTT and weighed approximately 82.0 g. Each unit was attached to the crane using 1.4 cm wide Teflon ribbon in a "Figure-8" harness design as described by Nagendran *et al.* (1994). The transmitter was placed on the back of the crane from above the contour feathers, between the wings, and the two ends of the harness strand were passed behind the wing on each side.

After PTT and harness attachment both adult cranes exhibited acclimation behaviors such as preening the harness and antenna, and directing aggression towards the unit. New feather growth was observed around the units after 2 weeks suggesting that the birds had plucked out some feathers near the PTT during this acclimation phase. Adult #060026 preened the antenna for 36 days following attachment. The PTT and harness fell free of the bird due to breakage of the suture material after 386 days. Adult #060025 preened the antenna for 5 days following attachment and consistently directed aggression (grabbing and pulling) at the antenna during the first 3 days. The bird broke the antenna off the PTT sometime between 161 and 388 days after attachment.

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Each of the juvenile cranes experienced problems with the fit of the harness within 14 days of attachment. Two weeks after placement of the PTT on juvenile #060052, the bird had gained 0.6 kg. This growth resulted in harness constriction causing minor abrasions at the point where the harness crossed at the keel and under the suture point on the right shoulder. Two weeks following attachment, the harness on juvenile #060053 appeared too loose. The Teflon harness between the anterior flange and the keel was more loose than the initial fit. However, the bird had no problems and the PTT fell free of the bird 159-210 days after attachment. Two days after attachment to juvenile #060048, the harness slipped over the bird's right carpus preventing flight.

These results indicate that caution should be exercised when placing PTTs and harnesses on juvenile cranes. Care must be taken to fit the harness to allow for changes in body size and weight. We also found that fit becomes more loose within several days of attachment in both adult and juvenile cranes as the birds preen the harness down into the feathers. We found the measurement of "permitting 2-3 adult fingers to slide under the transmitter" too arbitrary. Adult finger width varied widely among researchers in this study. Determining a more standardized measurement may be useful for researchers when placing PTTs and harnesses on cranes. For example, Olsen et al. (1992) fitted adult birds with harnesses by inserting a 15 mm diameter rod between the PTT and the bird's back. This same method of measurement could be used and expanded to include a second measurement where the harness crosses at the bird's keel.

Literature Cited

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送信機を付けたソデグロツルの様態

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著者らは、人工衛星用送信機をソデグロツルに装着した際その送信機がどのようにツルに影響するの
か観察した。またその送信機がソデグロツルから受けた破損状況もあわせて観察したのでここに発表す

る。1994年7月に国際ツル財団で飼育されている成鳥2羽と幼鳥（ふ化後約70日）3羽にそれぞれ総重量約82gの送信機を装着し約一年間観察した。2羽の成鳥とも送信機周辺を気にする行動が観察された。1羽は36日間送信機のアンテナをつつく行動がみられ、386日後には送信機をつないだテフロン加工のナイロン製リボンの結び目が外れた。もう1羽は装着後5日間アンテナをつつく行動が頻繁に観察され、161日以後にアンテナを折ってしまった。幼鳥3羽にはそれぞれ異なる問題が観察された。1羽は、体重の増加によりリボンの結び目部分の羽毛が擦り切れ、もう1羽は右小翼兩部までリボンがずれてしまった。残りの1羽の送信機は159日以後に個体から外れた。これらの観察結果から、幼鳥に送信機を装着する際の注意と送信機自体の耐久性についての様々な調査が今後さらに必要と思われる。

キーワード：送信機，ソデグロヅル