

STICK NESTS ON A BUILDING AND TRANSMISSION TOWERS USED FOR NESTING BY LARGE FALCONS IN UTAH

Stephen T. Bunnell¹, Clayton M. White¹, Don Paul², and S. Dwight Bunnell³

ABSTRACT.—Large falcons (genus *Falco*) do not build their own nests and, in North America at least, usually nest on high cliffs. Occasionally they nest in abandoned stick nests built by another large bird on the cliff. In Asia and particularly South Africa, they sometimes nest in stick nests on electrical power transmission towers. This use of electric transmission towers was recently (1980) reported for the Prairie Falcon (*Falco mexicanus*) in North America but is unknown, except for 1 anecdotically documented use of an “electric-power pole” at the turn of century in California, for the Peregrine Falcon (*Falco peregrinus*) in North America. Here we report such nesting of the peregrine in North America and additional tower nestings for the Prairie Falcon.

Key words: *electric transmission towers, Peregrine Falcon nesting, Prairie Falcon nesting, Falco peregrinus, Falco mexicanus.*

Several species of raptors, primarily the *buteos* (*Buteo* sp.), ospreys (*Pandion*) and eagles (*Aquila*), and also the Common Raven (*Corvus corax*), use electric power transmission towers as nesting platforms and substrates (Steenhof et al. 1993, Blue 1996). Most of these species, however, build their own stick nests on towers. Frequency of use of towers varies from region to region and may, in part, have to do with learning within a local population that such structures are appropriate for nesting. Frequently, newly erected transmission lines cross regions where historically a species was absent as breeders, for there were no structures for nest sites, and thus use of such towers may then allow that species to move into an area locally and exploit a previously unused food source (White and Tanner-White 1988). Use of such situations thus confers a selective advantage to individual pairs. Although falcons do not build their own nests, they frequently use stick nests, generally on cliffs, that were abandoned by the original builders.

Nesting by large falcons in abandoned stick nests of other birds on electric power transmission structures is not uncommon in the eastern hemisphere. As an array of examples, stick nests on power transmission poles are used (rarely) by the Black Falcon (*Falco subniger*) in Australia (Marchant and Higgins 1993, del Hoyo et al. 1994), more frequently by the

Saker Falcon (*Falco cherrug*) in Mongolia (Ellis et al. 1995) and the Ukraine (del Hoyo et al. 1994, S. Sorokin and V. Flint personal communications) and Laggar Falcon (*Falco jugger*) in India (Rishad Maoroji unpublished manuscript), and commonly by the Lanner Falcon (*Falco biarmicus*) in South Africa (Tarboton and Allan 1984). In the latter study, of 157 nesting Lanner Falcon pairs in the former Transvaal Province, 22.3% used stick nests on transmission towers and 1.3% used stick nests on buildings. In stark contrast, however, in North America the use of this combination of stick nest and transmission tower or building is very rare; in fact, there are no published reports, to our knowledge, of Peregrine Falcon (*Falco peregrinus*) using stick nests on transmission towers for nesting. There is, however, a record early in this century from California of a peregrine nest on a “platform on an electric-power pole,” but it was not documented adequately enough in the literature to interpret what “platform” meant (R.M. Bond in letter to Hickey and Anderson 1969:18). The peregrine nest on Osprey (*Pandion haliaetus*) nests on 7-m-tall navigation guidance towers on Pacific coastal Baja California (J.B. Platt personal communication) “approximates” the hack tower discussed below. There are, however, at least 2 recently published records of the Prairie Falcon (*Falco mexicanus*) using transmission towers, 1 in New Mexico

¹Department of Zoology, Brigham Young University, Provo, UT 84602.

²Utah Division of Wildlife Resources, 515 East 5300 South, Ogden, UT 84403.

³Utah Division of Wildlife Resources, 1596 West North Temple, Salt Lake City, UT 84116.

(Blue 1996) and 1 in Nevada (Roppe et al. 1989). In mid-latitude North America both species, particularly the peregrine, typically nest in inaccessible locations on cliff faces that are usually in excess of about 16 m (ca 50 ft). On a cosmopolitan basis, however, the peregrine shows considerable flexibility in the use of different nesting substrata, even nesting on the ground.

Throughout the early 1970s and early 1980s the Utah Division of Wildlife Resources (UDWR) erected several structures around the edge of the Great Salt Lake (GSL) from which to release (hack) Peregrine Falcons in a reestablishment program. These structures were about 7 m tall with a platform approximately 2×2 m in size on which a nesting box was placed. Young released from the towers were bred in captivity by The Peregrine Fund. They had black anodized U.S. Fish and Wildlife Service (USFWS) bands placed on the left leg (LL) and either plastic colored bands or colored aluminum bands with characters (letters and/or numbers) on the right leg (RL). Peregrines returned to the towers as adults and began breeding on them 4 yr after the initial releases. Young produced on the towers had a silver aluminum USFWS band placed on the RL and, in some cases (after 1990), a black anodized, coded band on the LL. There was no evidence, through at least 1994, that falcons from the towers (either initially released there or raised there as young) reoccupied nesting cliffs that were historically used on the nearby mountains, some of which are as close as 10 km. The peregrines, however, seemed to prefer, and perhaps even compete for, towers or other similar structures.

During the early 1980s the GSL underwent an unprecedented rise in water level from 4203' ASL to a historical high of 4212' ASL, which approximately doubled its surface area. Most towers and buildings otherwise around the lakeshore were surrounded by water and therefore secure from human intrusion.

BUILDING-NESTING PEREGRINE FALCONS

In 1988 Paul received reports of a pair of peregrines defending the vicinity of the historic Bear River Clubhouse (used by a duck hunting club). The clubhouse had been surrounded by a dike to protect it from waters of

the GSL and was surrounded by a vast shallow lake for approximately 3 km to the nearest land. The house was the only structure left standing after several years of flooding and shear ice; thus, it and surrounding trees had become a veritable mecca for birds. Paul confirmed the reports on 4 April 1988. Permission was obtained to place a nesting box, about 2/3 the size of a hack box, on the roof of the 2-story clubhouse in hopes that the falcons would use it. On 14 April the pair was still in the area, but it could not be determined whether they were using the nest box. On 5 May the site was again visited, and the female peregrine flew from the southwest corner of the building and perched nearby, protesting loudly. It was at this time that band information was obtained for both birds (female: LL black anodized band, RL green band; male: RL dark band—indicating that both were raised at hack boxes and the female was from The Peregrine Fund). After the agitated falcons quieted down, the female disappeared on the west side of the building. There, 2 wings of the clubhouse come together to form a narrow passage. On investigation, the female flushed from a raven's nest built on top of an electrical circuitry box, about 2.5 m above ground and shaded by the eaves of the building at the end of the passage. The nest contained a clutch of 4 eggs. Three young (2 males, 1 female) were hatched and eventually fledged. One male and the female are known to have survived to dispersal. The other male disappeared somewhat earlier but is assumed also to have dispersed. All young were leg-banded prior to fledging. The nearest artificial nesting tower was some 32 km S at the Harold Crane Wildlife Management Area.

TRANSMISSION-TOWER-NESTING PEREGRINES

Another Peregrine Falcon nest was located on a 340-Kv electric power transmission tower immediately adjacent to the Farmington Bay Waterfowl Management Area (FBWMA) on the eastern shore of the GSL, Davis County. Falcons were initially observed by SDB and a group of 11 other biologists from the UDWR on 19 May 1994 when the male flew near the nest in which the female was incubating. This and all subsequent observations were made from the ground using binoculars and spotting scopes. The falcons were using a raven's nest

built at the intersection of the main part of the tower and the middle cross section (useable photos are not available, but see figure in Roope et al. 1989 and Fig. 1 herein for approximate nest placement). We believe the ravens that built the nest may have been forced from it by the peregrines because a pair of ravens were attempting to build a nest on the next nearest transmission tower but were continually harassed by the peregrines. Since ravens typically have young nearly ready to fledge by mid-May, it is unlikely that the ravens would have newly moved into the area, especially to attempt building a nest so close to peregrines. Due to the location of the peregrine nest, the contents could not easily be seen except from an aircraft, so the initial number of eggs or young was unknown. A lone, large, downy nestling (ca 14 d old) was first observed in the nest on 26 June. The nest appeared to be very exposed most of the day to sun, wind, and rain. The female was seen frequently shading the nestling with her drooped wings during the hottest part of the day. In the absence of the female the nestling showed signs of heat stress. We last saw the young in the nest 26 July; it had fledged by 30 July. We judged it to be a female based on size.

Both adult birds had leg bands. The male had a black band (LL) and a red band (RL). The female had a black band (LL) and an aluminum band (RL). Based on the band configuration, the female was probably hatched at 1 of 7 nesting hack towers located around the GSL. The male may have been released by The Peregrine Fund as part of the reintroduction program. Several attempts to trap the adults to determine band numbers were unsuccessful because of the location of the tower relative to marshlands and appropriate locations to place a trap.

The nearest established nesting hack tower used by peregrines was at the Ambassador Gun Club about 11–12 km away. It was occupied by a pair of Barn Owls (*Tyto alba*) that same year (1994). As soon as the young owls were discovered, they were removed from the nesting box and placed in another nearby owl nest, but no peregrines attempted to nest in the box. We initially thought the pair of falcons using the stick nest on the power transmission tower was the same pair that had used the Ambassador hack tower in the past and had simply been prevented from nesting there

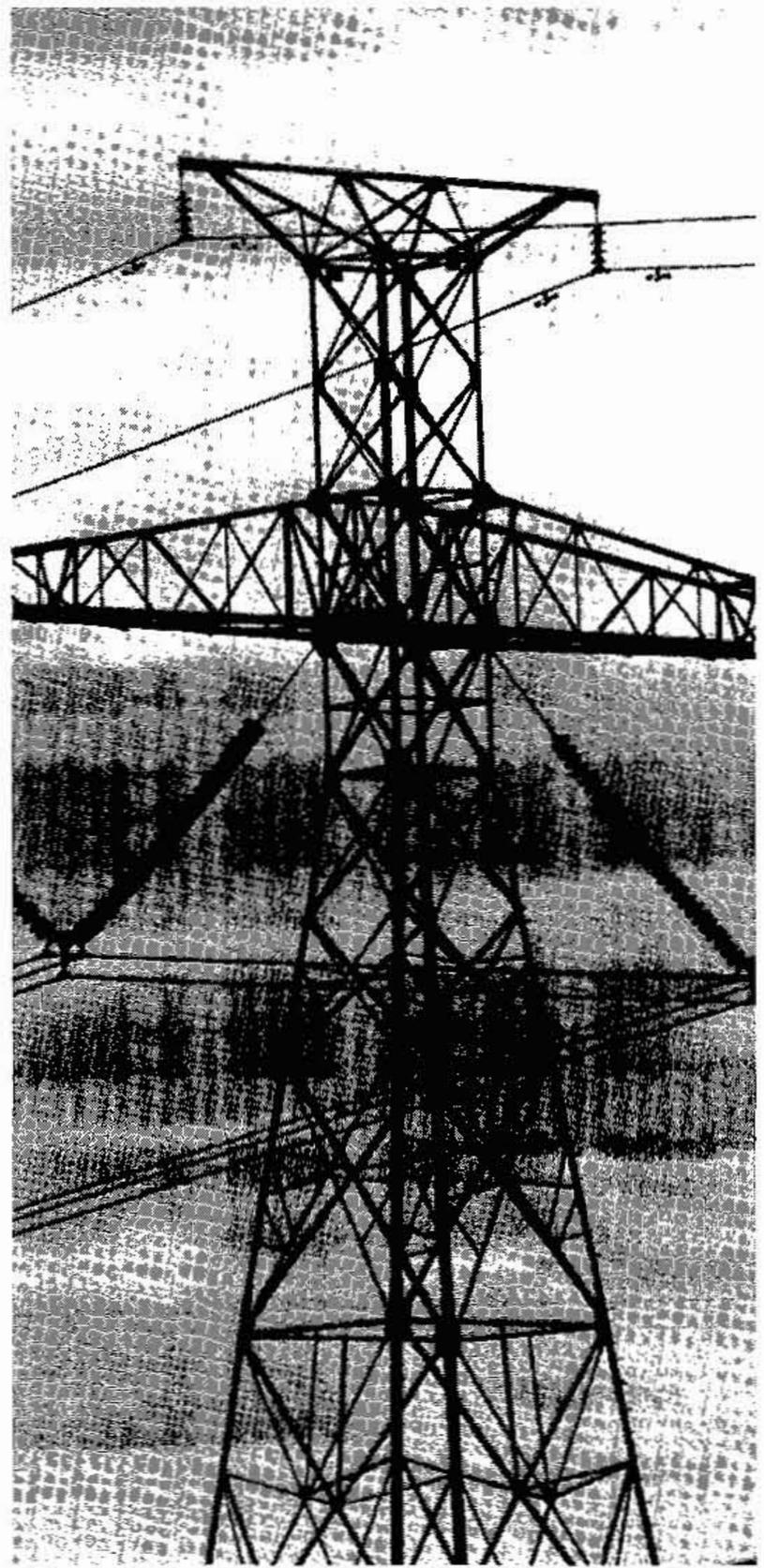


Fig. 1. Nest placement of the raven's nest used by the Prairie Falcon. Nest was in the center cross arm; the adult falcon can be seen standing on the edge of the nest. The placement is similar to that of the nests used by Peregrine Falcons near the GSL in 1994.

by the presence of the early nesting Barn Owls. However, another pair of falcons was present in the Ambassador Club area and seen occasionally on the tower (R. Walters personal communications).

To encourage the pair to return to the same transmission tower area, we had hoped to place a nesting hack box on or near the same transmission tower, but were unsuccessful. The falcons were not observed trying to reoccupy the nest in 1995 even though a single female was

there in early spring and a pair of ravens nested in the same nest in 1995.

In 1996 a pair of peregrines occupied the Ambassador Club nest hack tower and produced 3 young (males). The adult female was unbanded, and the male had no band on RL but we could not be certain about LL. During this same time Justin Dolling, superintendent of the FBWMA, found a pair of peregrines in May nesting in a raven's nest on the 1st horizontal bar of the 4th transmission tower about 0.8 km S of the FBWMA transmission tower used in 1994. Paul saw 2 young (ca 3 wk old) in the nest on 21 June, 2 were there on 7 July, and on 16 July the adults were seen with 1 female fledgling. The adult female had a black anodized aluminum band (LL) and a regular aluminum USFWS band (RL). The adult male was unbanded. The female could have been the same female that nested on the transmission tower in 1994 based on the band configuration. The males, however, were different birds because the 1994 male was banded.

In 1997 presumably the same pair (based on bands or lack of them) was back at the same transmission tower as in 1996; they occupied a different location on the tower, but it also was a raven's nest. The female was still incubating at the time this went to press.

TRANSMISSION-TOWER-NESTING PRAIRIE FALCONS

In mid-May 1994, Mark Allman, a falconer from Provo, and 2 colleagues found a pair of Prairie Falcons nesting in a raven's nest on a transmission tower on lines coming from the Intermountain Power Plant about 16 km NW of Delta, Millard County, Utah (Figs. 1, 2). The falcons defended the nest and tower. Allman was unable to return to the nest to determine its success. When we checked the area in September, we found a few molted Prairie Falcon feathers and some regurgitated pellets, like those cast from Prairie Falcons, below at least 1 other tower with raven nests farther west along the line, suggesting that perhaps a 2nd pair of falcons may also have used that stretch of transmission towers.

DISCUSSION

The use of stick nests on transmission towers by Peregrine Falcons represents a more significant behavioral shift for them than for



Fig. 2. View of the Prairie Falcon on the nest edge.

Prairie Falcons that traditionally use deserted stick nests on cliffs. This behavior by peregrines is most likely a result of the use of hack towers in the reintroduction effort, the frequency and availability of raven's nests on power transmission towers, and the lack of "acceptable" cliff sites along the shores of the GSL; there are, however, abundant cliffs, some used historically by peregrines for nesting, 5–10 km E of GSL. Of interest is the fact that all but 1 of the Peregrine Falcons nesting on the transmission towers or buildings were from previous artificial nesting situations. The unbanded male at the transmission tower in 1996 and 1997 may have been produced from a normal cliff-nesting situation. If so, the fact that it would occupy a transmission tower and a raven's nest on the tower attests to the species' ecological amplitude in

nesting. Alternatively, that male may simply have been raised at a hack tower that contained a stick at some more distant unknown release location outside of Utah where the young had not been banded.

Addendum: Peregrines were recently reported using similar pylon situations in Holland (1993) and Germany (1995) in Newsletter 23/24, 1996, World Working Group of Birds of Prey and Owls, B-U Meyburg, editor, Berlin, Germany.

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