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Radio telemetry has facilitated investigations of movements, activities, and behavior of mobile and inconspicuous wildlife species. Despite advances in electronics, systems of radio attachment, especially for birds, have changed little. Brander (1968), Dunstan (1972), Boag et al. (1973), Dumke and Pils (1973), Wallestad and Schladweiler (1974), Maxson (1978), and others employed a body harness radio attachment developed largely in 1959 (Marshall and Kupa 1963). Williams et al. (1969) and Godfrey (1970) replaced harness body loops on their backpack radio mounts with wing loops but retained the basic harness concept. Although many investigators have had good results with harness-mounted radios, evidence suggests that harnessing birds to carry radio transmitters can alter behavior and impair survival (Hessler et al. 1970, Boag 1972, Greenwood and Sargeant 1973, Craighead and Dunstan 1976, Lance and Watson 1977). Problems with harness-mounted radios that may result in behavioral changes and decreased survival include skin irritation, restricted mobility, alteration of body contour and coloration, alteration of natural weight distribution, and perhaps undiscernible psychological effects. The sewn and glued backpack eliminates straps that can restrict movements, but still alters body contour, color, and weight distribution (Martin and Bider 1978). Nasal saddles and tail clips are the only truly alternative radio attachments available (Bray and Corner 1972, Swanson et al. 1976). The nasal saddle is useful only for specialized problems, and use of tail clip radios is complicated by the molt. To study movements of sharp-tailed grouse (*Pedioecetes phasianellus*), I designed a radio-collar that eliminates many drawbacks of other systems of radio attachment. It proved useful in sharp tailed grouse studies and should be broadly applicable to investigations of other birds that are similar in size. Assembly, attachment, and results of the 1st use of this radio-collar are reported here. Use of trade names does not imply endorsement of commercial products by the federal government.