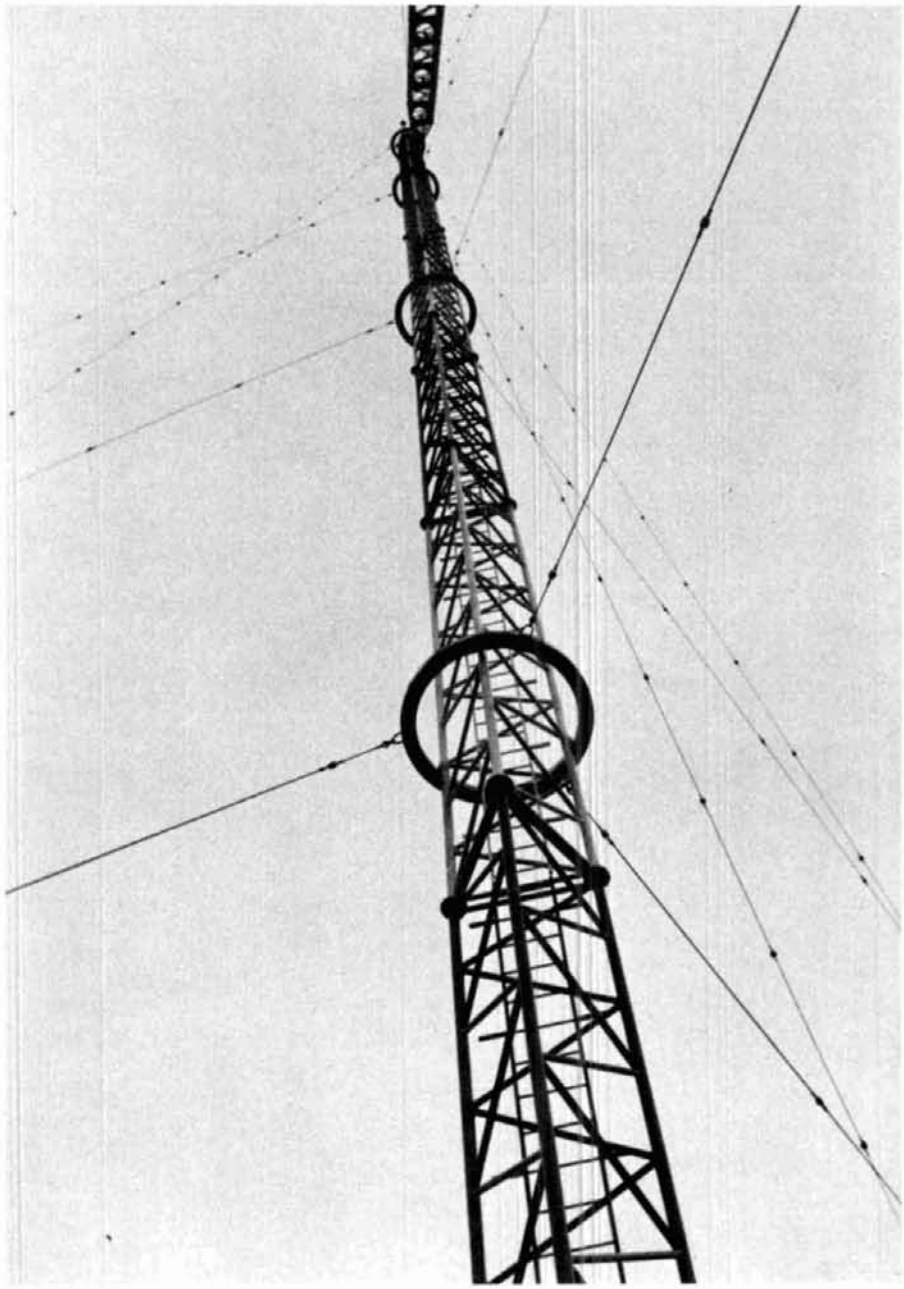

fig. 6. Slip-ring installation on tower of OH8OS. Would you care to climb the ladder to the top array? (Visible at top of picture is the arm of the crane ready to lift the antennas to their final positions on the tower.)

verticals on a mountain in northern Vermont. JA7NI, keep your ears open for this one!

You *can* be a topnotch 160-meter DXer with only a simple antenna. Bob, VE1YX, says, "No super-antenna here! I have a simple, coax-fed dipole, 60 feet high on a hilltop about 450 feet above sea level. So far, 135 countries — the best DX being VK6HD long path at 2100Z."

long-wave hams in Australia

Sixteen years ago, before WARC 79, the United States considered an Amateur band in the 160-190 kHz region. The idea had merit, but opposition arose because this was the range used by carrier current data transmissions on power lines and also by long-wave European broadcasting stations. Sadly, the idea was dropped before WARC 79 started.

Even so, John (VK3ACA) and Pet (VK3QI) pursued the idea with th Department of Communications Australia and, after a pause, they wer issued experimental licenses for lov frequency operation on 196 kHz (153 meters). John received the call sig AX3T35 and Peter became AX3T36. third Amateur, Dennis (VK3WV), joi ed them and got the call sign VL3 (**fig. 8**). The stations all ran about 10 watts input.

Antennas were a problem. AX3T3 used a 30-foot vertical with a hug base loading coil and an extensiv grounding system. He estimated h antenna efficiency was about 0.37 pe cent. Station VL3Y used a 135-foo wire, which wasn't much better. Eve with the poor antennas, the first cor tact was made in April, 1981. Cor tinued contacts between the three se tions showed that the propagatio range via ground wave was about 30 miles during daylight, and possib more during the hours of darkness.

AX3T35 is writing an article, sched uled to appear shortly in the journal o the Wireless Institute of Australia *Amateur Radio*, about the experience of the only three licensed low-fre quency ham staions in the worl (Good work, lads — I'll put a shrim on the barbie for you!)

an anti-jamming HF loop antenna

People other than Radio Amateu are interested in efficient and effectiv HF antennas. Radio Free Europe, i particular, tries in every way to com bat the Soviet jamming that plague their broadcasts. In this regard, the have published information on buildin a simple and inexpensive direction receiving antenna that can be helpfu in reducing jamming interference Details of this antenna are shown i (**fig. 9**.)

The antenna consists of a shielde loop made of coax cable (RG-58/U, o RG-59/U, for example). A smaller loo couples the tuned loop to the receive To hold the cables in the loop form a wooden support in the shape of cross is used. The coax is passe

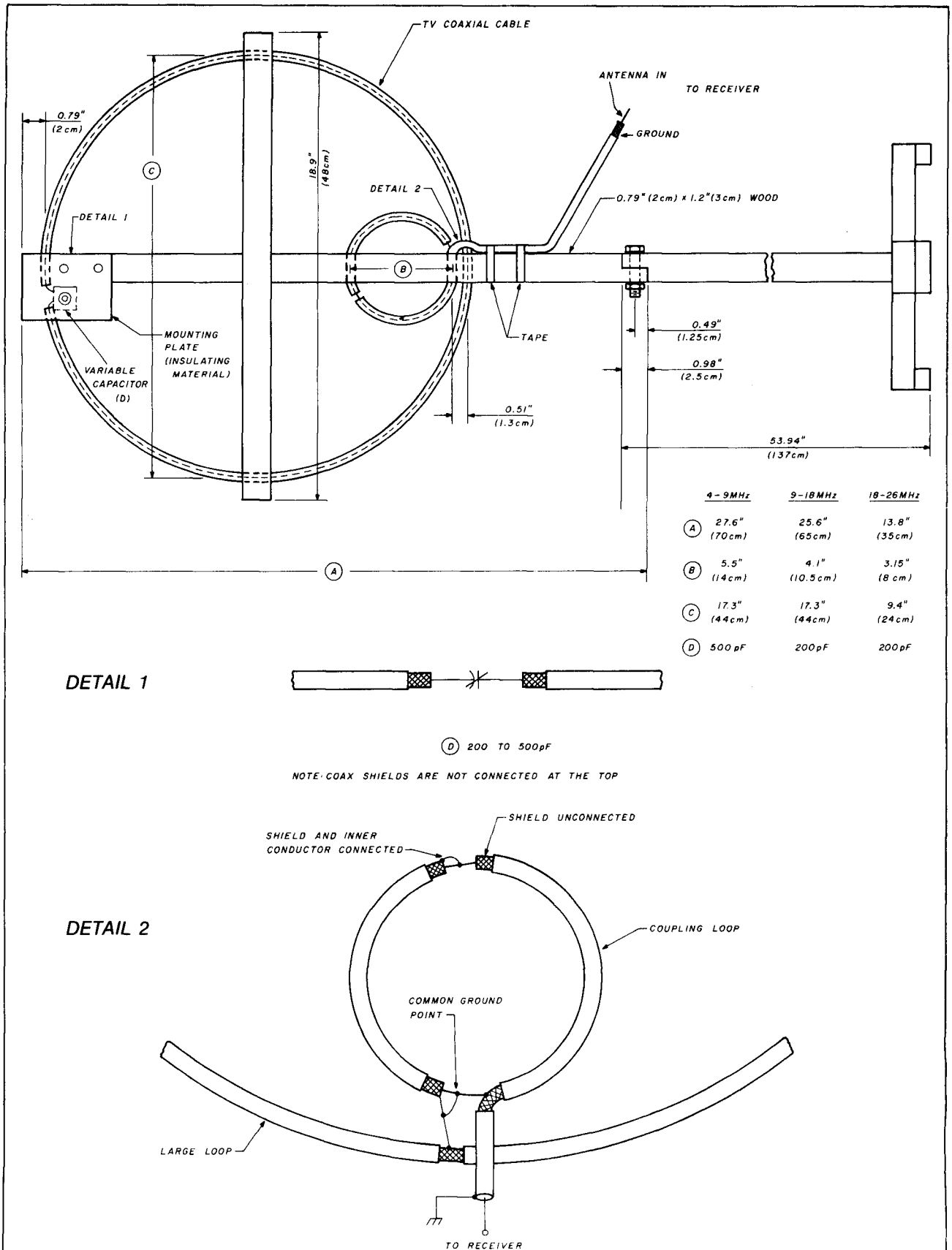

fig. 9. Receiving loop recommended by "Radio Free Europe." (Dimensions provided in centimeters.)

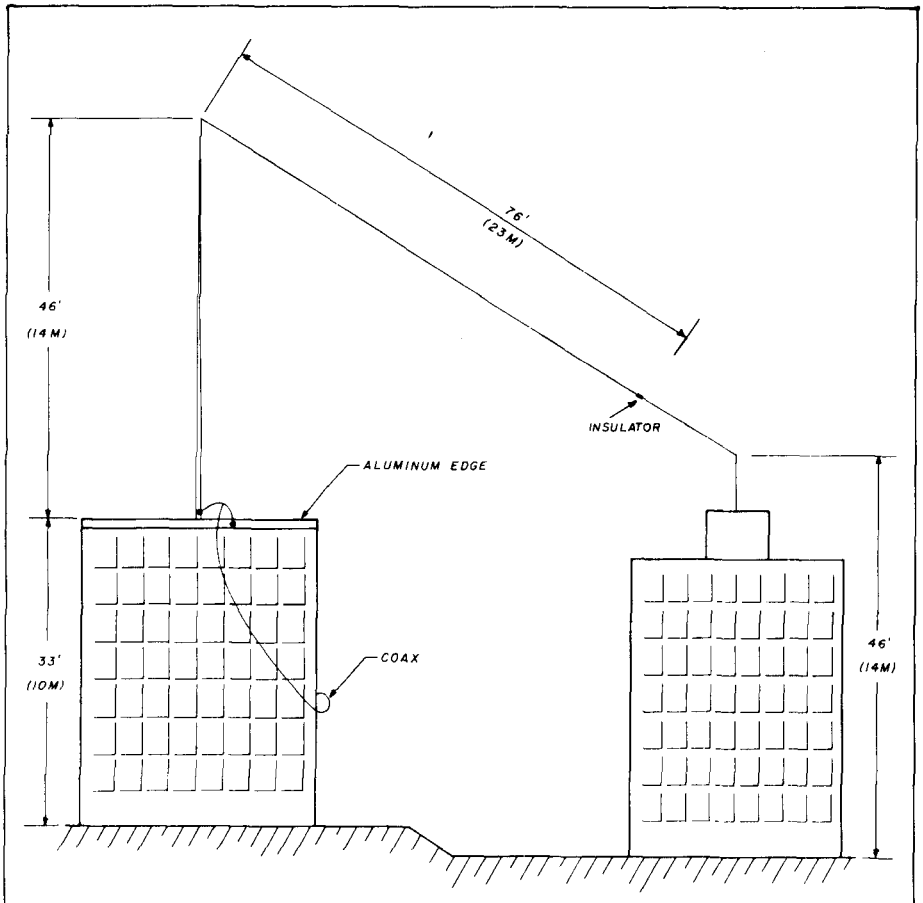

fig. 7. Apartment antenna of 160-meter DX operator Kuni, JA7NI, consists of top-loaded 46-foot (14 meter) mast atop a three-story apartment building. Shield of coax is grounded to aluminum roof trim.

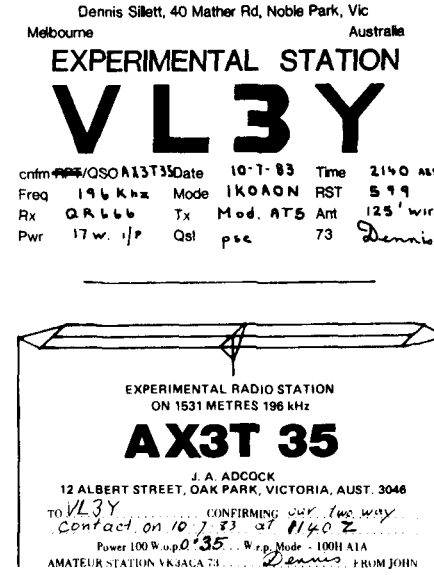

fig. 8. QSL cards of low-frequency experimental Amateur stations in Australia.

through appropriate holes in the structure. A variable capacitor at the open end of the loop tunes it to the required frequency. The coupling link matches the symmetrical, balanced loop to the unbalanced coax line to the receiver.

The vertical portion of the support structure is hinged to allow tilting the antenna for improvement of the rejection null. The antenna can be rotated horizontally to provide both azimuth and elevation alignment.

To cover the shortwave spectrum from 4 to 26 MHz, three loop sizes are required, as shown in **fig. 9**.

To use the loop antenna, receiver and antenna are tuned for maximum signal at the desired frequency. The antenna is then rotated and tilted to minimize the interfering signal. A reduction of 30-to-1 in jamming strength is predicted for short wave listeners, depending upon the location of the jamming station with respect to the desired station.

While Radio Amateurs may not use the loop for reduction of intentional jamming, this design may prove to be of benefit for operation in DX contests where it's helpful to null out loud local competition.

Because of the reduced pickup of the loop compared to a full-size antenna, it may be necessary to add a preamplifier between loop and receiver to bring signals up to full strength.

the new *Beam Antenna Handbook*

For the past two years I've been absent from the bands, devoting every moment of my spare time to completing, with Stu, W2LX, the extensive revision of the *Beam Antenna Handbook*. It was a lengthy job; the old text was ripped apart and new text prepared. New illustrations were added. New, up-to-date antenna dimensions, based upon recent computer studies conducted on Yagi arrays were cataloged. The result, after much hard work, is a completely new edition of *Beam*.*

The book includes new data on HF Yagi antennas (two to five elements), element spacing, and the effect of element taper. There's new information on erecting beams and general installation data as well. VHF long Yagis are covered, together with complete design tables for the home constructor. Complete English and metric dimensions are given for all antennas.

There's helpful information on feed systems and SWR measurements. A systematic test procedure is provided to help you determine whether your beam is operating properly. The information on checking the accuracy of your SWR meter is worth the price of admission!

Now that the book is ready, perhaps I'll have time to get on the air! Or will another project come along?

*Available from Ham Radio's Bookstore, Greenville, New Hampshire 03048, $9.95 plus $2.50 shipping and handling.

ham radio