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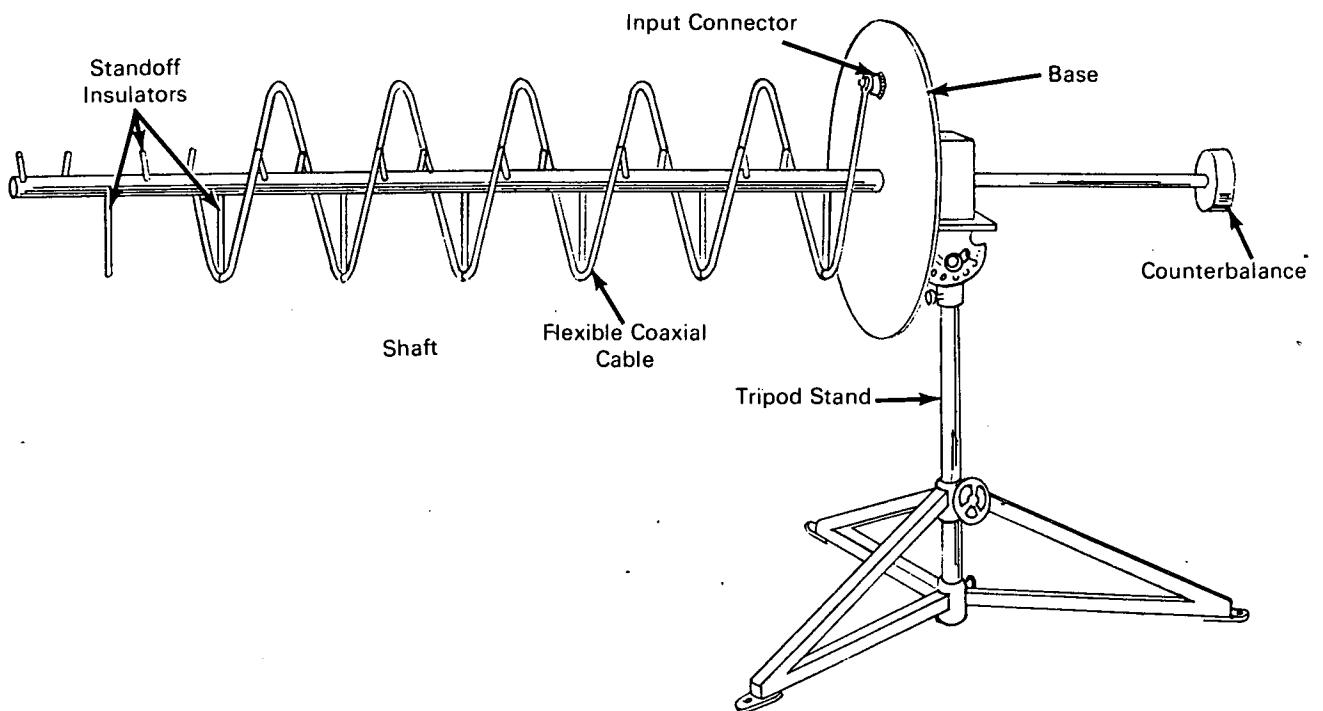
Brief 70-10016

# NASA TECH BRIEF



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## Economical Weatherproof Helical Antenna



### The problem:

To provide an inexpensive, weatherproof, helical antenna which requires minimum maintenance, and which can be easily transported and assembled.

### The solution:

Previously, helical antenna elements have been formed from soft copper tubing, shaped with a custom-machined mandrel. Antennas made by this technique are very expensive, and furthermore, are susceptible to corrosion. Both of these problems have been solved by using a semi-rigid coaxial cable to form the helical element.

### How it's done:

The helix of the weatherproof antenna illustrated above is made of a foam dielectric, heliax transmission line that has been shorted out at each end. The helix is formed by mounting the transmission line on standoff insulators, which are attached to the antenna shaft. By this technique, the helix can be formed with any diameter, pitch, or taper without requiring expensive tools or techniques. Because the p conductors are sealed in plastic, the resulting antenna element is highly corrosion resistant, and may be used at seacoast facilities or on range tracking ships with minimum maintenance.

(continued overleaf)

**Note:**

No additional documentation is available. Specific questions, however, may be directed to:

Technology Utilization Officer  
Kennedy Space Center  
Kennedy Space Center, Florida 32899  
Reference: B70-10016

**Patent status:**

This invention is owned by NASA, and a patent application has been filed. Royalty-free nonexclusive licenses for its commercial use will be granted by NASA. Inquiries concerning license rights should be made to NASA, Code GP, Washington, D.C. 20546.

Source: Herbert E Cribb  
Kennedy Space Center  
(XKS-08485)