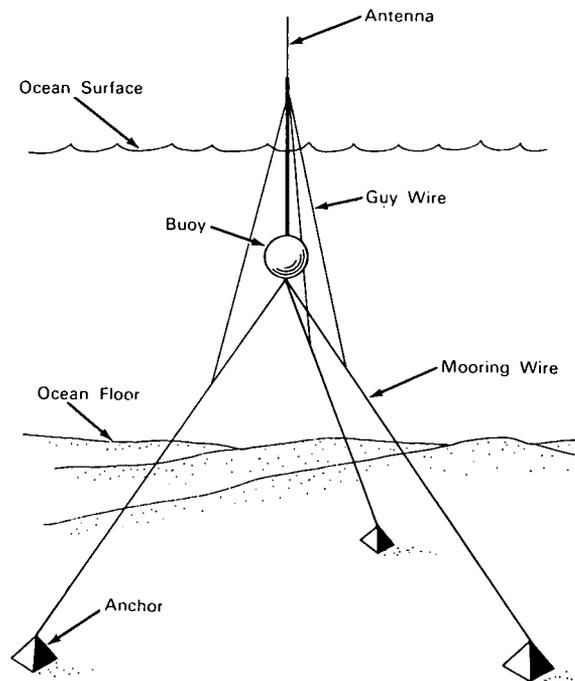


# NASA TECH BRIEF



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## Oceanborne Transponder Platform Has Good Stability



**The problem:** Determination of space vehicle range and orbit would be measurably aided if transponders on the world's oceans could be made as stable as those used for this purpose on earth mounts. Single-moored buoys are subject to high drag factors and thus do not give the accuracy of an earth-mounted device.

**The solution:** A subsurface transponder and above surface antenna secured by a three-point anchoring system.

**How it's done:** A buoy is held well below the ocean's surface by a three-point system of anchors and mooring lines. The buoy contains a transponder connected to an antenna that projects above the ocean surface. The antenna is held securely in place by a three-point guy-wire system secured to the mooring lines below the buoy. The complete system is designed with proper dimensions to accommodate the tidal environment in which it is placed. The mooring lines and guy wires are of high-tensile stainless steel and are step tapered to reduce weight.

(continued overleaf)

**Notes:**

1. The device could be used as a navigation aid, a telemetry relay station, or as a component of an oceanographic observation system.
2. Compared to alternate systems, such as sonar, that require reference systems to give operational position and drift, this system is relatively inexpensive.

3. Inquiries concerning this invention may be directed to:

Technology Utilization Officer  
Marshall Space Flight Center  
Huntsville, Alabama, 35812  
Reference: B65-10035

**Patent status:** NASA encourages the immediate commercial use of this invention. Inquiries about obtaining rights for its commercial use may be made to NASA, Code AGP, Washington, D.C., 20546.

Source: International Business Machines Corp.  
under contract to Marshall Space Flight Center  
(M-FS-171)