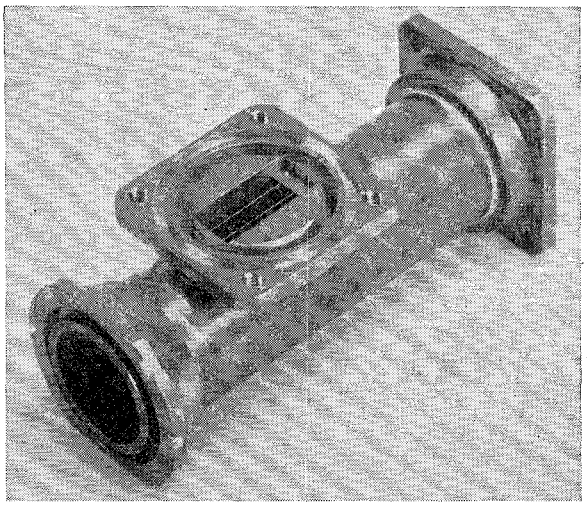

Fig. 4—Compact transducer.

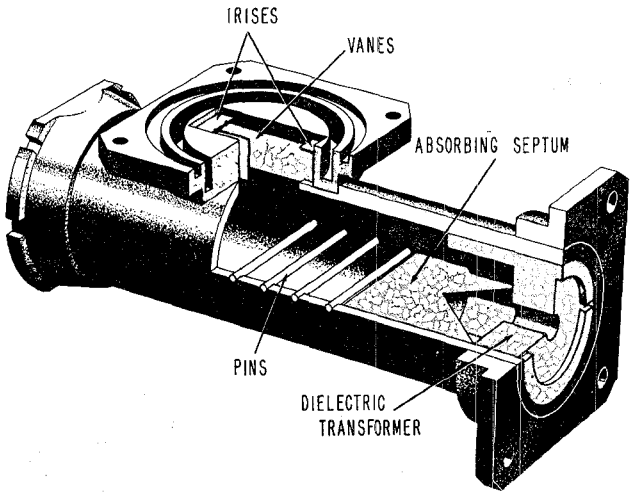

Fig. 5—Cutaway view of compact transducer.

described since development work was completed and the dimensions frozen at the time that the resonance was discovered.

With this modification the compact model now possesses electrical characteristics equal to those of the previous models. Input vswr to either rectangular arm is less than 1.15:1. Mode isolation is 50 db or greater over the band from 8,600 mc to 9,600 mc. The mechanical characteristics are far superior to the earlier versions, being of a more rugged construction and more economical to fabricate. Construction details are shown in Fig. 5. It can be seen from this view that the width of the vanes which form the wave filter was adjusted so that the matching iris would be in its proper position when seated on top of the vanes. Small slots cut in the narrow wall of the choke flange provide a convenient holding device while the vanes are being soldered. The critical dimensions which include the aperture size, the position of the pins with respect to the aperture and the position and size of the matching elements are indicated in Fig. 6.

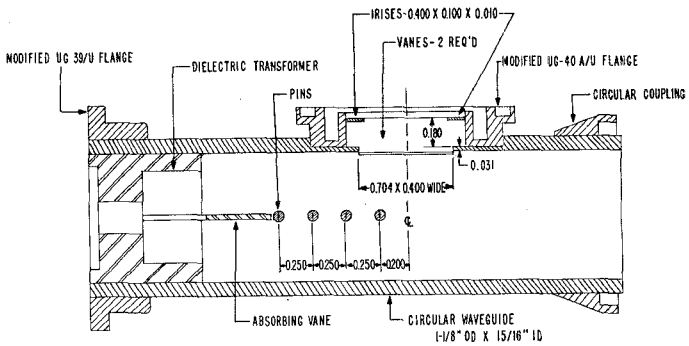

Fig. 6—Plan view of compact transducer showing critical dimensions.

Conclusion

The compact dual-mode transducer which has been developed exhibits a high order of isolation between channels with a low input vswr for the frequency range considered and provides an effective means for mode multiplexing in circular waveguide. The junction also offers utility in the design of circular waveguide ferrite devices, such as isolators, duplexers, and circulators. Kingdon has suggested several other applications for this type transducer including balanced mixers, circular or elliptical polarizers, rotary joints, a variable power splitting bridge, and a circular waveguide magic-*T*.

Acknowledgment

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Correction

Franklin S. Coale, author of the paper "A Switch Detector Circuit," which appeared on pages 59–61 of the December, 1955 issue of Transactions on Microwave Theory and Techniques, has requested that the following information, omitted in his manuscript, be published by the editors.

The work for the paper was accomplished while Mr. Coale was a member of the Sperry Gyroscope Company under an Air Force Contract.

P. J. Sferrazza, of Sperry, developed a band-pass crystal switch at 3300 mc which gave a dynamic switching of greater than 44 db over a 10 mc bandwidth.