I. THE SHORAN RADIOPOSITIONING SYSTEM

The Shoran system is a radar transponder type of radiopositioning system. The Shoran mobile station equipment measures the distance from its location to those of two fixed ground beacon stations. The position of the mobile unit is thus fixed at the intersection of the two circular distance or range arcs so determined. The position of the ground beacon stations or base stations is normally accurately known, so that the corresponding position of the mobile station can be accurately computed or determined by graphical methods. Should the position coordinates of the base stations not be accurately known, the mobile station may still be positioned relative to the baseline determined by the base station locations.

The Shoran mobile unit measures the distances of the two base stations by measuring the time required for pulses of radio signals to travel from the mobile station to each base station and return. The time intervals so measured are related to the corresponding distances by using the highly constant velocity characteristic of radio waves in air through the simple relationship.

Total distance covered = Elapsed time x velocity.

Because of this relationship, it is possible to graduate the indicating dials in the mobile unit in terms of dis-