

I. THE SHORAN RADIOPOSITIONING SYSTEM (continued)

tance rather than elapsed time. For example, using radio waves which have a velocity of approximately 186,000 miles per second, the scale of the time-interval measuring system is graduated so that, when the time interval required for a round trip of the signal is 1/1000 second, the scale reads 93 miles. (The total distance traveled by the radio signals in 1/1000 second is 186 miles. Since this is round trip distance, it must be halved to obtain the distance between mobile and base stations.) The Shoran dials are graduated in terms of statute miles rather than nautical miles.

The basic equipment units used to create the round-trip signal paths originating and terminating at the mobile station are shown in figure 1. This equipment consists of a signal source (labeled pulse generator in figure 1), a transmitter, receiver and indicator unit comprising the mobile station, and a receiver coupled to a transmitter at each base station.

Pulse signals originating at the mobile station are radiated from the mobile transmitter and received by one of the base stations. At this base station, the pulse is sent from the output of the receiver to the input of the transmitter, and is then retransmitted back to the mobile