

12. Radar survey and identification equipment. a. There is a universal requirement for a secure and reliable means of accomplishing positive instantaneous mutual identification between air and ground troops, and a means of accurately determining the positions of specific ground combat units or special personnel, such as forward observers and patrols. Ground units should be equipped with suitable micro-wave radar beacons, which can be interrogated by the surveillance radars installed in friendly aircraft. The beacon response displayed on the airborne radar should give the pilot an accurate indication of the location of the ground beacon. If this is carried a step farther by the incorporation of security devices and codes in the beacon, Identification Friend or Foe (IFF), and even identification of particular units can be realized. Conversely, if friendly aircraft carry "secure" coded beacons, their location and identity can be similarly determined by ground troops equipped with suitable "interrogators" or ground radars.

b. To date the bulk and weight of beacon equipment, and the fact that all beacons and radars do not operate in the same part of frequency spectrum, has precluded the adoption of a satisfactory universal system for identifying and determining the position of ground units. Coordination between the Army Ground Forces and the Army Air Forces will be necessary to secure a single frequency band on which airborne surveillance radars and ground force beacon equipment can be integrated.

c. Once equipped with coded beacons, ground forces, by the employment of suitably sited ground radars or "interrogators", as discussed in subparagraph 7 b, above, can secure intelligence on the location of front line units, transmit this information to

a ground operations center, where the information can be plotted on a map or otherwise displayed, thereby presenting to the ground commander, pictorially, the disposition of all forward elements of his command. The ground beacons must be small, lightweight, and simple to operate, and they must be suitable for man-pack or vehicular installation.

d. In this connection, this type of beacon operating in conjunction with field artillery radar equipment should be a logical means of accomplishing the artillery survey and liaison aircraft navigation referred to in paragraph 5 b, above.

Military characteristics are set forth in Inclosure No. 20-T. See also Annex "S", Survey, Observation, and Metro Equipment.

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