

TACAN Air Navigation Station. FAC: 1341

CATCODE: 134465

OPR: AFFSA

OCR: AFNIC, AF/A3O, AFCEC/COS

1.1. Description. A TACAN is a short range, UHF, line-of-sight air navigation system that provides continuous, accurate slant-range distance and bearing information. The information is presented to the pilot in two dimensions, distance and bearing, to and from a selected ground station. The TACAN station theoretically produces an infinite number of signals similar to the spokes of a wheel.

1.2. Requirements Determination. TACAN stations may be used as either terminal or enroute aids. The maximum service range is approximately 360 km (195 nautical miles) at high altitude. Therefore, the installation may be on or off base. When used as a terminal aid, the TACAN should be installed on base adjacent to the runway, as close to the runway centerline as criteria specified in UFC 3-260-01 permits. For an on- base installation, the maximum angle of convergence between the runway centerline and TACAN final approach course is 30 degrees at a point 900 m (3,000 ft) from the runway threshold. See AFI 32-1044 for additional guidance.

1.3. Scope Determination.

1.3.1. **Fixed TACAN Air Navigation Station (AN/FRN-45).** The AN/FRN-45 Solid State TACAN modification replaces the outmoded tube-type TACANs. House them in the existing TACAN buildings. They also utilize the existing backup power generators and the existing antenna and tower structure. The AN/FRN-45 TACAN is designated to provide the same service with solid state reliability.

1.3.2. **Mobile TACAN Stations (AN/TRN-48 and AN/TRN-41).** The AN/TRN-26 is a highly mobile TACAN system. It is designed on the building block concept for quick reaction TACAN service at locations where weight and cube are critical. The AN/TRN-26 has the capability to be housed in a mobile van or operate freestanding for short durations, when under field conditions. It has the capability to operate with commercial power or generator power. When properly sited, it is designed to provide the same service as a fixed based TACAN.

1.3.3. The AN/TRN-41 is a light-weight air-dropable TACAN set to be used by Air Force combat control teams as a navigational aid (NAVAID) for aircraft operating in contingency or forward areas. It operates without hardstand or shelter. It is intended to be used in VMC (Visual Meteorological Conditions) and is not equipped with the monitors required for use during Instrument Flight Rules (IFR) weather conditions.

1.4. Dimensions. See UFC 3-260-01.

1.5. Design Considerations. See UFC 3-260-01.