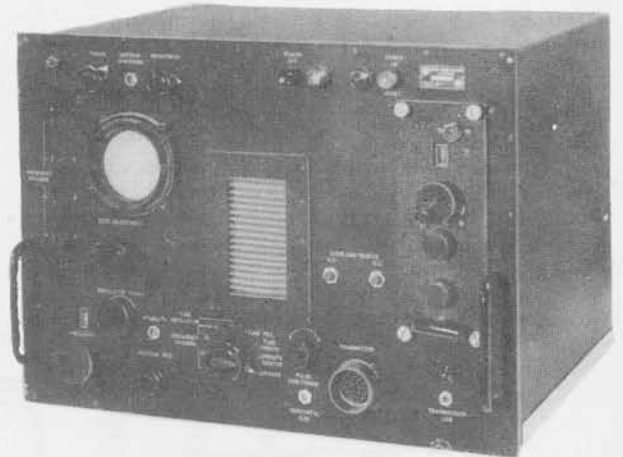


Radio Set AN/CPN-2 is the ground portion of the precision aircraft navigational system known as Shoran which employs radar ranging and beacon principles. This system is used for precision navigation, permitting positioning of aircraft within 75 feet of any point in the range of the system.

Shoran consists of one aircraft equipment (AN/APN-3) and two identical ground station equipments (AN/CPN-2). The AN/CPN-2's provide signals which are utilized by the aircraft equipment (AN/APN-3) to measure the distance from the aircraft to each of the two AN/CPN-2 ground stations. In practice one performs the "rate" duties while the other acts as the "drift" station. The "drift" station is the one which provides the course or arc flown by the navigator. The "rate" station provides the intersecting or bombing point. These indications depend on the plane's receiver-indicator system, i.e., a ground station may be a "rate" station for one airplane and a "drift" station for another. A maximum of 20 airborne equipments can use a single pair of ground beacons simultaneously. (For further details on the operation of Shoran refer to Radio Set AN/APN-3.)



Monitor ID-18/CPN-2

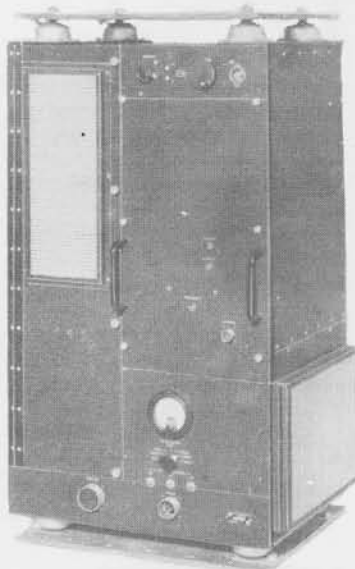
The following major components of AN/CPN-2 perform the functions indicated:

**Transmitter;** when interrogated by AN/APN-3 this unit responds by transmitting a pulsed signal at the proper rf frequency.

**Monitor;** this component contains the rf receiver unit for receiving the signals from AN/APN-3. It also incorporates a network for controlling the overall delay of the station, and a master timing unit used as a reference standard for the airborne timer. An oscilloscope is provided for checking the delay and a wavemeter is included for checking the frequency of the rf receiver.

Shoran may be used as an aid in photographic reconnaissance, aerial mapping for establishing a bombing line, dropping paratroopers and supplies over a pre-selected point, and for precision navigation of aircraft and of ships to the ground stations.

Additional test equipment used in the maintenance of Radio Set AN/CPN-2 includes Voltmeters IS-185 and IS-189, and Power Meter TS-305/UP.



Radio Transmitter T-12/CPN-2

POWER INPUT	1200 WATTS, 115 VOLTS, 400 CPS; 400 WATTS, 24 VOLTS, D.C.
POWER OUTPUT	30 KW (PEAK)
FREQUENCY	290 TO 330 MCS (TRANSMITTER), 220 to 330 MCS (RECEIVER)
TYPE OF SIGNAL	PULSE
PULSE LENGTH	0.55 MICROSECONDS
PRF	930 TO 9300 CPS
RANGE	AIRCRAFT AT 40,000', 280 MILES
OPERATORS	TWO

TUBE COMPLEMENT			
NO.	TYPE	NO.	TYPE
5	3E29	2	705 A
1	5X3GT	1	6E5
13	6AC7	7	6AG5
3	6AG7	1	2X2
3	5R4GY	1	3BP1
5	6H6	2	6V6GT/G
6	6J6	1	OD3/VR-150
9	6SN7GT		



Radio set AN/CPN-2 should be placed on the highest terrain available and away from surrounding hills or buildings.

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Complete installation of Vehicular Mounting Kit for Radio Set AN/CPN-2.

## RADIO SET AN/CPN-2

TOTAL WEIGHT 1163 LBS

Component	Nomenclature	Size	Weight
Transmitter	T-12/CPN-2	26" x 20" x 41"	209 Lbs.
Monitor	ID-18/CPN-2 with receiver	26" x 20" x 22"	98 Lbs.
Antenna Mast & Reflector	AN-28/CPN-2	12" x 9" x 144"	191 Lbs.
Antenna Bed			78 Lbs.
Mast Accessories		19" x 44" x 14"	195 Lbs.
2 Homelite Power Type HRU-AD	PU-4/CPN-2	17" x 35" x 21"	140 Lbs.
2 Gas Cans in case packed for shipment		13" x 14" x 29"	49 Lbs. (Ea.)

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