

Radio Set *AN/APN-1 is an airborne frequency modulated radar altimeter designed for installation in aircraft to provide direct indication of altitude above terrain during flight.

This equipment is designed to emit, in a downward direction from the transmitter antenna, a radio frequency carrier which is frequency modulated at a rate of 120 cycles per second between the approximate limits of 420 and 460 mc on the low range (0-400 feet) and 443 to 447 mc on the high range (400-4000 feet). The earth's surface reflects some of this radiated carrier, and the reflected signal is received on a separate receiver antenna.

During the time interval required for the signal to travel to earth and return to the aircraft, the transmitter frequency will have changed. The combination of the received signal with a signal obtained directly from the transmitter will result, by process of detection, in an audio frequency signal the average frequency of which is proportional to the altitude of the aircraft above the ground.

This equipment provides a dual range indicator of 0-400 feet and 400-4000 feet; having an accuracy within plus or minus 6 feet on the 400-foot range and within plus or minus 80 feet on the 4000-foot range.

Radio Set *AN/APN-1A differs from *AN/APN-1 only in that it is equipped with a single-range indicator and a two-position external range switch is used to provide dual range altitude readings. Both sets may be used in con-

junction with an automatic pilot.

This equipment is designed for dc operation and consumes approximately 2.5 amperes with 27.5 volts delivered to the battery input receptacle of the transmitter-receiver. The input current at 27 volts is increased to approximately 2.7 amperes when a limit indicator is used.

The following test sets are required for the maintenance and tuning of *AN/APN-1: Test Set TS-10C/APN or Test Set TS-10B/APN; Test Set TS-16/APN; RCA 158 Oscilloscope; and Multimeter TS-352/U.

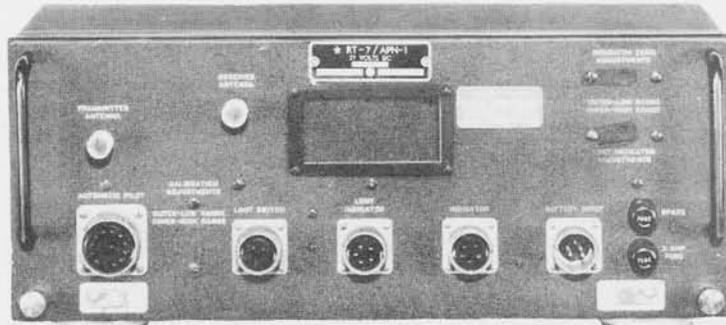
Requirements as of 1 February 1945 were 10,870 for the calendar year 1945.

POWER INPUT	73 WATTS
FREQUENCY	420-460 MC 442-446 MC
TYPE OF SIGNAL	FM
RANGE	0-400 FT. + 6 FT. 400-4000 FT. + 60 FT.
SWEEP RATE	120 CPS

TUBE COMPLEMENT			
NO.	TYPE	NO.	TYPE
2	12H6	2	955
3	12SJ7	2	9004
4	12SH7	1	OD3/VR-150



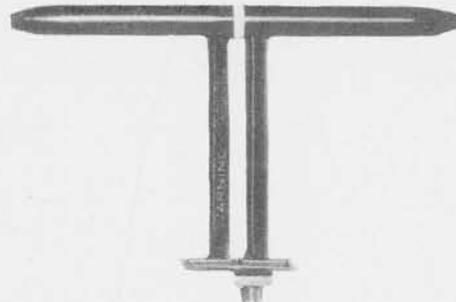
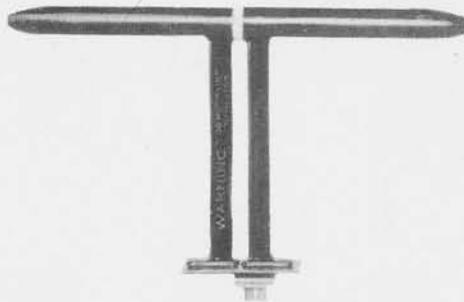
Altitude Limit Switch
SA-1/ARN-1



Transmitter Receiver RT-7/APN-1 On Mounting Base MT-14/ARN-1



Altitude Indicator
ID-14/ARN-1



Antenna AT-4/ARN-1

RADIO SET AN /APN-1

TOTAL WEIGHT 45 LBS.

Component	Nomenclature	Size	Weight
Transmitter-Receiver	*RT-7/APN-1	8" x 19" x 9"	19 Lbs.
Mounting Base	*MT-14/ARN-1	3" x 19" x 8"	2 Lbs.
Altitude Indicator	*ID-14/APN-1	4" x 4" x 6"	2 Lbs.
Altitude Limit Switch	*SA-1/ARN-1	6" x 4" DIAM	2 Lbs.
Antenna	*AT-4/ARN-1	8" x 12" x 2"	2 Lbs.
Lamp	LM-38 (3 EA)		

and includes plugs, cable marker tags, cable clamps, conductors, adapters, circuit breaker, indicators, misc. cable, and brackets.
July 1945