

# UNCLASSIFIED

# CONFIDENTIAL

# AN/APN-19

Radar Beacon AN/APN-19, (Rosebud) is an airborne range coded beacon which is installed in fighters to enable Ground Radars AN/CPS-1, AN/CPS-6 and SCR-584 to identify and vector these airplanes at ranges greater than the ground radars normally can function with airplanes not so equipped. This equipment increases the range and reliability for close support bombing and photo-reconnaissance when used with modified SCR-584 radars.

The set is capable of being interrogated by radars having beacon functions and replying with a range coded signal permitting the beacon to be located in range and azimuth. A tunable 7 megacycle-bandwidth cavity is available when it is desired to eliminate all frequencies except those of one interrogating radar. Reply may be coded by three code pips, the spacing of which may be varied so that seven combinations are possible.

The equipment is similar to Radio Set AN/UPM-2 adapted for airborne operation. Antenna Assembly AS-172/AP, the horizontally polarized antenna designed for airborne operation, consists of a dual linear array of six dipoles for receiving and transmitting. Present indications show that for fighter planes, vertically polarized antennas are pre-

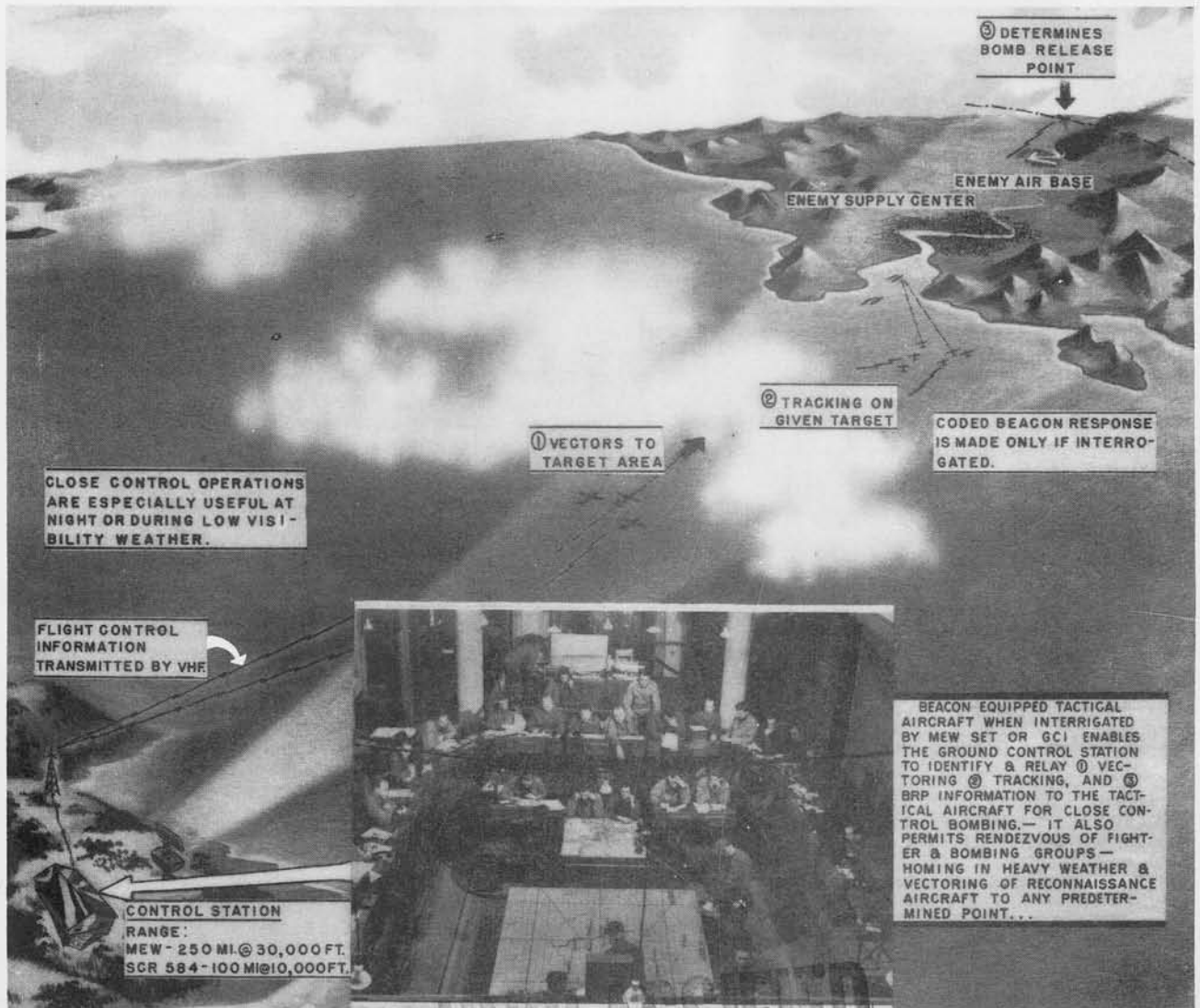
ferred as the vertically polarized dipoles will be only one and one-half inches long.

Test equipment required for maintenance and tuning includes Test Set TS-125/AP, Wavemeter TS-117/GP, Test Set TS-3A/AP, Signal Generator TS-155C/UP, Pressurizing Kit MK-20/UP, Multimeter TS-297/U, Oscilloscope TS-239/UP, Oscilloscope TS-34/AP, Voltage Divider TS-89(I)/AP, Multimeter TS-352/U, Dynamotor Test Set TS-414/U, and Tube Tester I-177.

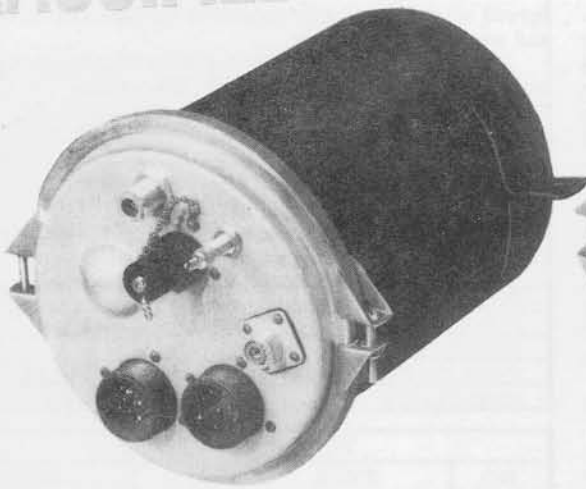
Army Air Forces requirements as of 1 February 1945 were 3273 for the calendar year 1945.

POWER INPUT	120 WATTS @ 28 VOLTS D-C
POWER OUTPUT	50 WATTS (PEAK)
FREQUENCY	2700-3400 MC
TYPE OF SIGNAL	RANGE CODED PULSES
SENSITIVITY	2 TO 5 x 10 <sup>-8</sup> WATTS

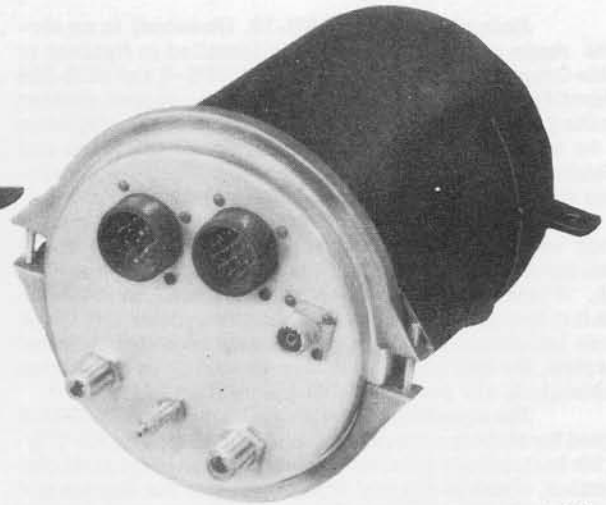
TUBE COMPLEMENT			
NO.	TYPE	NO.	TYPE
3	2D21	1	2C40
2	7F8	5	7F8



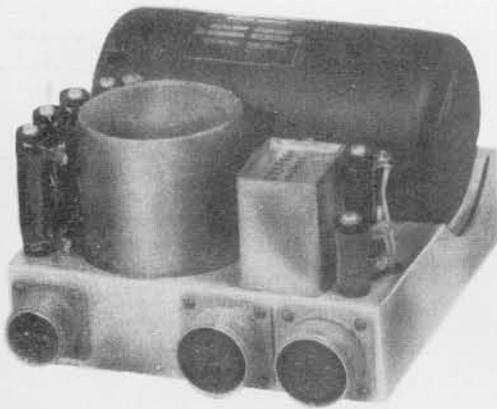
Radar Beacon AN/APN-19 installed in fighter or other light aircraft permits close control operations at much greater ranges than are possible with normal detection radar in that the aircraft contact is maintained with the control station by beacon pulse rather than with the weaker reflected pulse.



Radar Transmitter T-128/APN-19



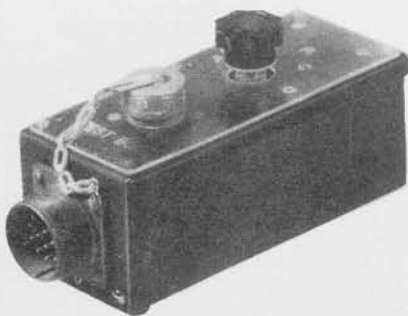
Radar Receiver R-149/APN-19



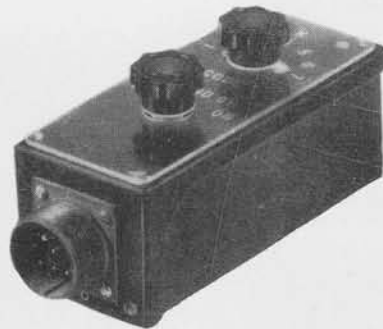
Dynamotor DY-30/APN-19



Antenna AT-104/APN-19



Control Box C-238/APN-19



Control Box C-239/APN-19

RADAR BEACON AN/APN-19

TOTAL WEIGHT 30 LBS.

Component	Nomenclature	Size	Weight
Control Box	C-238/APN-19	4" x 3" x 7"	*
Control Box	C-239/APN-19	4" x 4" x 5"	1 Lb.
Antenna	AT-104/APN-19	2" x 3" Diameter	*
Radar Transmitter	T-128/APN-19	9" x 7" Diameter	7 Lbs.
Radar Receiver	R-149/APN-19	9" x 7" Diameter	6 Lbs.
Dynamotor	DY-30/APN-19	5" x 8" x 7"	10 Lbs.

and includes plugs cable adapters etc.  
Section 4 - Graphic Survey