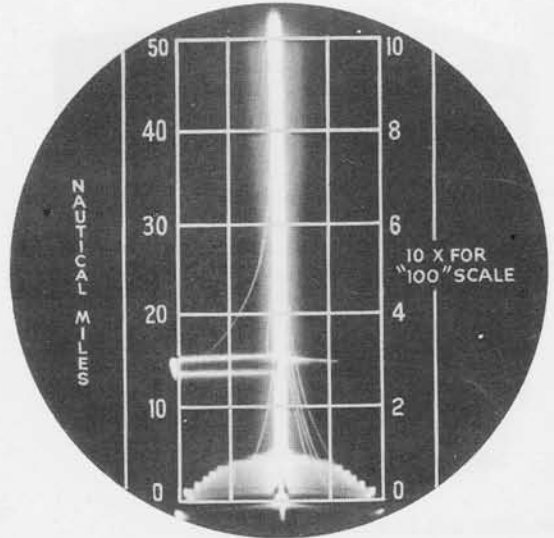


RadioSet *AN/APN-2 is an airborne radar interrogator-responder of the "Rebecca" type that will enable an aircraft to home on ground radar beacons of the "Eureka" type such as AN/PPN-1 and AN/PPN-2 and the heavier beacons, AN/TPN-1 and AN/TPN-2. It is used in conjunction with suitable beacons for night landing of parachute troops, landing of gliders and maintaining airborne supply operation to isolated positions.

In operation the Rebecca (*AN/APN-2) emits a pulse, "triggering" the Eureka (AN/PPN-1) and causing it to return a pulse. This returned pulse is received by the Rebecca in the aircraft and appears as a signal pip on the scope, thereby indicating range and direction of the beacon.

A form of communication between Rebecca and Eureka is also provided. The Eureka operator, while listening for triggering through his earphones, can send the Rebecca operator a coded message by depressing a key provided for that purpose. Such messages are read in the Rebecca indicator as a blinking of the signal pip. This type of communication, though slow, can be used to notify Rebecca planes of any last minute changes caused, for example, by change of wind direction or surprise enemy action.

Chief difference between Rebecca - Eureka and other beacon systems lies in the size and weight of the units. Rebecca is designed solely to interrogate an Eureka; it serves no other function and requires no other radar in the aircraft. Hence Rebecca can be installed in a troop carrier airplane at a cost in weight of only 85 pounds compared to an installed weight of 400-500 pounds for an ASV radar.



Scope records range vertically on three scales & azimuth horizontally right or left of centerline of beacon response signal above shows beacon 33 miles away & approx. 30° right.

As soon as an Eureka has been set up (usually it can be done in less than 10 minutes) it is ready to be triggered and to signal in return to incoming Rebecca equipped troop carriers.

Rebecca and Eureka must each use the proper frequency channel - i.e., Rebecca interrogates and Eureka is triggered on one frequency; Eureka responds and Rebecca receives the response on another frequency. This allows 20 different channels, enough to act as a safeguard against tapping by the enemy.

Radio Set *AN/APN-2 is designed to direct an airplane to within 200 yards of the ground beacon and will provide a good homing signal at a distance of 50 miles from transportable Beacon Transmitter-Receiver AN/TPN-3, and 80 miles from transportable Beacon Transmitter-Receiver AN/TPN-2.

Power requirements of the equipment are 185 watts at 80 or 115 volts, 400-2400 c.p.s. and 25 watts at 24 volts dc.

RadioSet *AN/APN-2Y is identical to *AN/APN-2 except for its voltage supply requirement of 12 volts dc.

Test equipment used in the maintenance of Radio Set *AN/APN-2 includes Squadron Test Equipment IE-56-A and Depot Test Equipment IE-45-A.

Army requirements as of 1 February 1945 were 5512 for the calendar year 1945.



(1) Indicator BC-929-A (2) Radio Control Box BC-1145-A
 Radio Receiver and Transmitter BC-800-A (not shown)
 July 1945

POWER INPUT	185 WATTS - 80/115V.AC 25 WATTS @ 24V. DC
POWER OUTPUT	500 WATTS (PEAK)
FREQUENCY	214-234 MC
TYPE OF SIGNAL	PULSE
RANGE	50 MI WITH AN/TPN-1 25 MI WITH AN/PPN-1 80 MI WITH AN/TPN-2
SENSITIVITY	20 MICROVOLTS

TUBE COMPLEMENT			
NO.	TYPE	NO.	TYPE
1	955	1	5U4G
3	956	1	2C26
6	6AC7	1	6V6GT/G
1	6SL7GT	1	6X5GT/G
3	6SN7GT	1	6G6G
3	6H6GT/G	1	3BPI
2	2X2		

*AN/APN-2

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Radio Receiver and Transmitter
*RT-1A/APN-2
on Mounting FT-416-A



Indicator BC-929-A
on Mounting FT-409-A



Visor



Remote Control
Device C-134/APN



Tuning Shaft MC-215



Tuning Adapter
MX-196/APN



Antenna
*AT-1/APN-2



Control Box
*C-3/APN-2
Mounting
FT-406-A



Antenna *AT-2/APN-2



RADIO SET *AN/APN-2

TOTAL WEIGHT 85 LBS.

Component	Nomenclature	Size	Weight
Radio Receiver and Transmitter	*RT-1/APN-2	13" x 12" x 9"	34 Lbs.
Radio Control Box	*C-3/APN-2	3" x 4" x 8"	2 Lbs.
Indicator	BC-929-A	9" x 9" x 16"	26 Lbs.
Antenna	*AT-2/APN (2 ea)	8"	5 Lbs.
Mounting	FT-409-A	9" x 16"	3 Lbs.
Mounting	FT-416-A	13" x 9"	3 Lbs.
Mounting	FT-406-A	4" x 8"	1 Lb.
Antenna	*AT-1/APN-2	8"	2 Lbs.
Remote Tuning Device	C-134/APN	4" x 3" x 3"	1 Lb.
Tuning Adapter	MX-196/APN	3" x 3" x 2"	1 Lb.
Tuning Shaft	MC-215		1 Lb.

and includes plugs, adapters, fuses and RF cable.
Section 4 - Graphic Survey

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