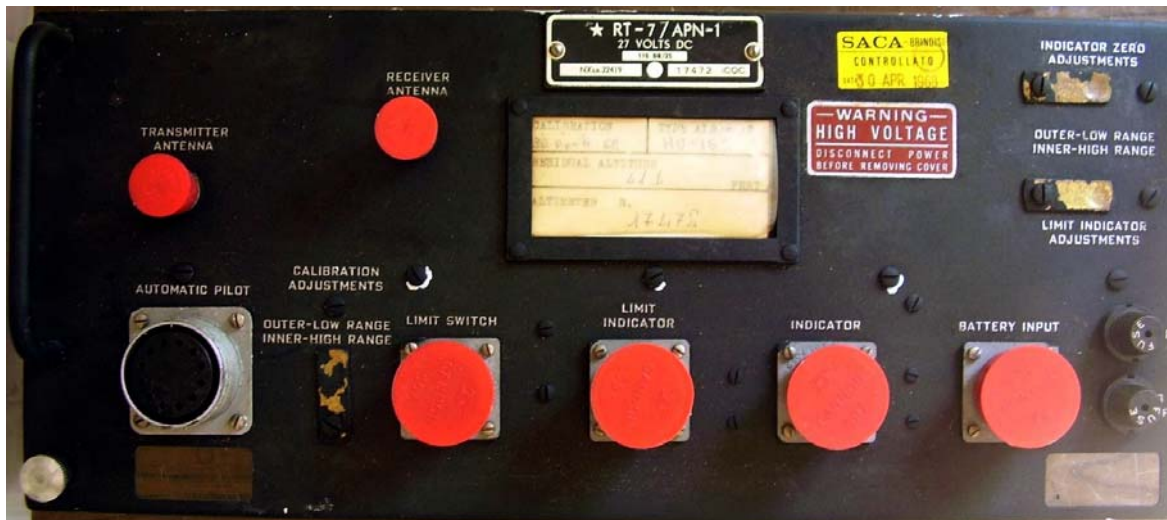
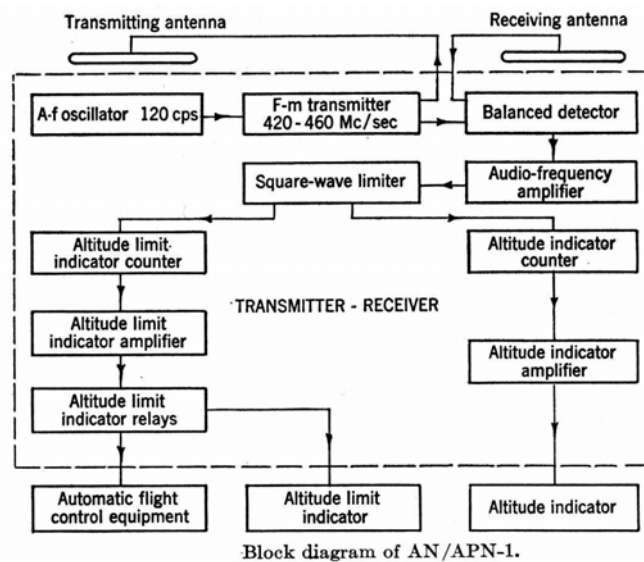


## RT- 7 / APN-1 - Frequency-Modulated Altimeter

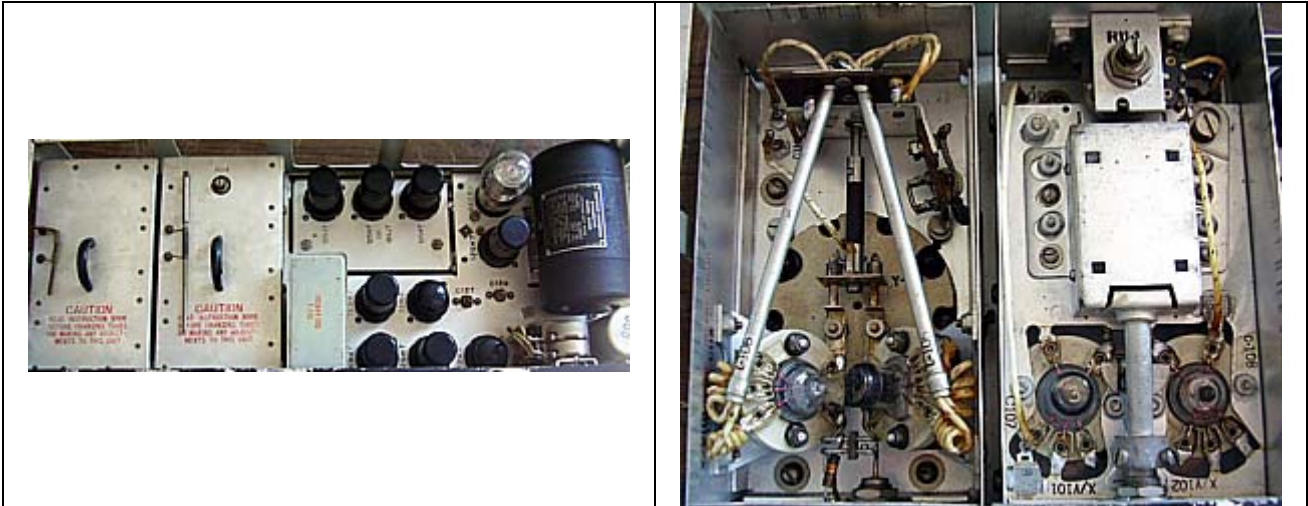


Click on images to enlarge.

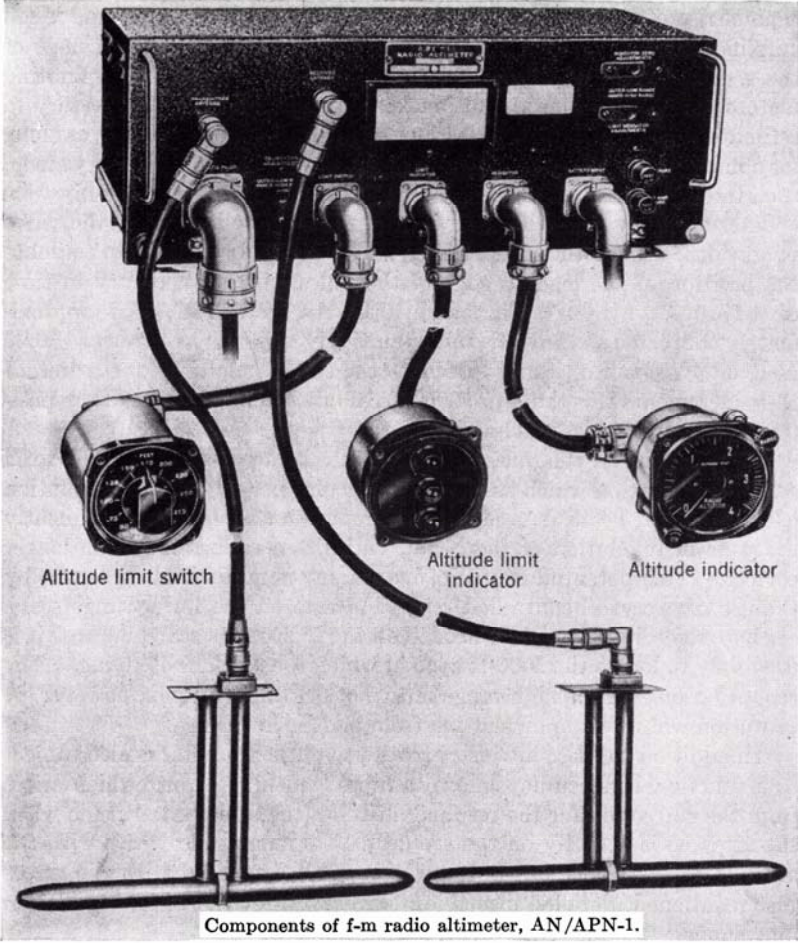
This FM-modulated radio altimeter was designed by RCA and became operative in 1943, during WWII. It is described in Volume II, 'Radar Aids to Navigation', of the MIT Radiation Lab. Series, 1947. Basically the transmitter frequency sweeps continuously between 420 and 400 MHz. Depending upon the selected range, 400 or 4,000 feet, sweep rate can be 40 or 4 MHz per second. Due to the delay introduced by the path from the transmitting antenna to ground and back to the receiving antenna, the altitude information is obtained directly comparing the frequency difference between the transmitter and the receiver. Here is the block diagram of the RT-7.



Both transmitting and receiving RF sections were based upon [955](#) acorn tubes. The sample in the photos was still in service in 1968, about 25 years later, according to the calibration label.



Left, inside view of the RT-7. Right, the UHF sections with covers removed. Click on images to enlarge.



Components of f-m radio altimeter, AN/APN-1.

APN-1 complete system view, showing indicators and antennas connected to RT-7. Click to enlarge.