

P-3-radarns konstruktion och prestanda

(Källa Christian Wolff och Militärwesen 07/72)

1. the P3A has got as display an A-scope only
2. the P3A can determinate an elevation angle
3. the range is greater than 150 km
4. accuracy in range: 1,5 km
 in azimuth: 4°
 in elevation: 1,5°

I only can suspect the following details:

If the display is an A-scope only, this radar cannot rotate quickly. It has to be assumed that the turn was manually carried out (like a direction finding equipment by radiomonitoring). Otherwise the given accuracy in azimuth isn't concurring with the poor antenna gain of a single pair of Yagi-antenna to be expected (see the picture).

The elevation angle was determined by a so called "Goniometer" in older russian VHF-radars (e.g. the "Knife Rest" series). For this the radar unit has got two antennae (or groups) one above the other. The phase difference between the antennae is the measure of the targets elevation angle. The Goniometer produces a standing wave of the received RF impulses on two slip rings fed by the two Yagi- antennae. Two simultaneously moving measuring contacts on the slip rings measures the voltage difference between the slip rings. This voltage difference gets the value zero in a certain position. The mechanical angle of this position corresponds to the elevation angle of the target. With a nomogram the elevation angle could be converted to a height value in connection with the measured range.

This easy principle may be used by the P3A too, I think. I hope, this historical extrapolation is permitted. This construction was definitely already available in the P-8, P-10 and P-12 VHF-radars.