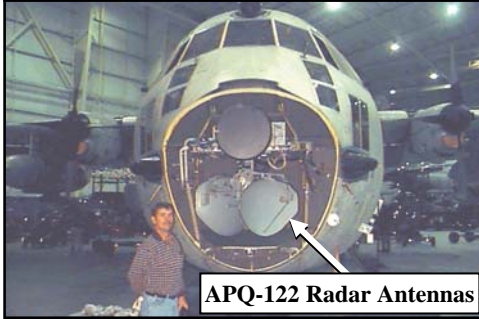
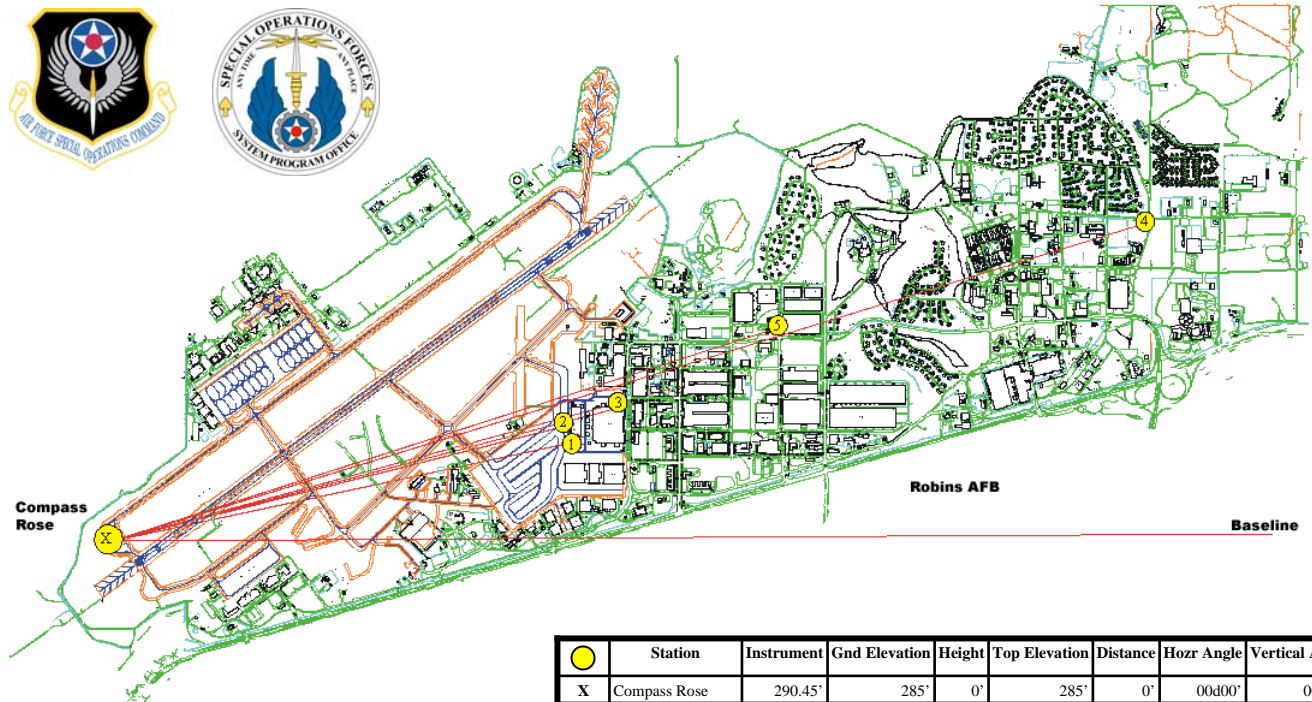


MC-130E PDM Cycle, “Cut 30 Days” Revised Radar BoreSight Alignment Procedures



APQ-122 Radar Antennas



Compass Rose

Robins AFB

Baseline

●	Station	Instrument	Gnd Elevation	Height	Top Elevation	Distance	Hoizr Angle	Vertical Angle
X	Compass Rose	290.45'	285'	0'	285'	0'	00d00'	00d00'
1	Ball Antenna	290.45'	273'	111'	384'	10,198'	12d18'	00d33'
2	B110 Antenna	290.45'	273'	109'	382'	10,147'	13d05'	00d32'
3	Water Tower 1	290.45'	299'	155'	454'	12354'	14d47'	00d47'
4	Water Tower 2	290.45'	287'	154'	441'	23046'	16d47'	00d23'
5	RRE Station	290.45'	300'	139'	439'	14878'	17d15'	00d35'

Problem:

- MC-130E Combat Talon I (CT I) Terrain Following (TF) Terrain Avoidance (TA) Radar (APQ-122) requires repeated flight tests for a successful Operation Check Flight (OCF).
- APQ-122 TF/TA Radar is a SOF unique legacy technology analog radar that is part of the aging aircraft issue.
- Program Depot Maintenance (PDM) had no radar ground checkout process. Forced to use aircraft as test bed and boresights radar during flight testing.

Solution:

- Established a Radar functional ground test to improve predictability of in-flight performance.
- Functional ground test conducted at Compass Rose with aircraft physically moved to test heading.
- Radar is boresighted then conducts performance checks against surveyed key structures.
- Solves and identifies radar performance problems on the ground verses in-flight.
- Eliminates “fly - fix - fly” mode.
- Cost effective and efficient “Cuts 30 days out of PDM Cycle”.



LUM Engineer: James Mosely

