

00 SITUATION:

~~US BATTLE GROUP IN THE MIDDLE EAST REQUIRE~~
~~EARLY WARNING OF SOVIET BACKLINES AND SURFACE PLATFORMS~~

00 NEEDED:

LONG RANGE SENSOR.

00 RECOMMENDED SOLUTION (NEAR TERM):

~~DEPLOY AN HF-OTH RADAR.~~

HIGH-FREQUENCY, OVER-THE-HORIZON RADAR

- MATURE TECHNOLOGY
- SURVEYS LARGE AREAS FOR MODERATE INVESTMENT
- EXISTING HARDWARE AND SOFTWARE COULD BE USED

Options:

• Utilize OTH-R RED assets

• [REDACTED]

• [REDACTED]

• New OTH-R equipment

• Equipment available about July 1981

• Automatic scan 50° within 60° sector

• Installations at prepared, aircraft 3 to 6 months (tiger team)

• Estimated cost: \$22M

• Good performance

CONUS OTH-B EXPERIMENTAL RADAR SYSTEM (ERS)

- FM-CW WAVEFORM.
- TWO SITES SEPARATED BY ABOUT 92 NMI.
- RELATIVE POSITION ACCURACIES: RG: 1-3 NMI, BR: 0.5°.
- ERS AUTOMATIC SCAN PATTERN IS LIMITED TO 30° COVERAGE SELECTABLE WITHIN THE 60° ANTENNA COVERAGE.
- MINOR PROCESSING MODIFICATIONS SHOULD ALLOW ± 45° OFF-AXIS OPS FOR 90° SECTOR.
- ADDITIONAL PROCESSING HARDWARE WOULD BE REQUIRED FOR AUTO SCAN OVER 90° BARRIER.

TABLE II (C)

PERSIAN GULF RADAR SURVEILLANCE ALTERNATIVES (C)

Alternative Number	Source for Equipment	Eqipt. Avail.	Components	Time Required for Installation	Operability	Rel. Perform.	Deg. Cov.	Rough Cost
1	R&D Assets	Now	Old, some obsolete	12 months	Manual scan	Minimum	60°	\$20M
2	ERS	1 yr.	Modern	3 to 6 mos.	Automatic scan	Good	60°	\$22M
3	ERS(I)	1 yr.	Modern	6 to 9 mos.	Automatic scan	Good	90°	\$30M
4	New Equipment	2 yrs.	Modern	12 to 15 months	Automatic scan	Better	60° 90°	\$63M \$95M

CONFIDENTIAL

MOVE TO NEW ERS

• EQUIPMENT AVAILABLE JULY 81

PROVISO: MODIFICATIONS AND NEW HARDWARE ORDERED SOON

• AUTOMATIC SCAN OF 90° SECTOR

• DEVELOP ERS IMPROVEMENT

(SOFTWARE MODIFICATIONS /
EXPAND PROCESSING HARDWARE

• INSTALLATION: 6 TO 9 MONTHS

• ESTIMATED COST: \$30M

NEW OTH-R EQUIPMENT

- ⑧ EQUIPMENT AVAILABLE - 2 YEARS FROM CONTRACT
- ⑧ AUTOMATIC SCAN OF 90° SECTOR
- ⑧ INSTALLATION: 12 TO 15 MONTHS
- ⑧ ESTIMATED COST: \$95M (\$63M FOR 60°)
- ⑧ GOOD PERFORMANCE AND MAINTAINABILITY

AN OPERATIONAL OTH RADAR BASED ON THE ERS DESIGN BUT CAPABLE OF AUTO SCAN OF 60° SECTOR WOULD COST ABOUT \$63M TO ACQUIRE.

(NEW HARDWARE)

TRANSMITTERS	\$10M
RECEIVERS	9M
OPERATIONS/COMPUTERS	10M
FACILITIES (INC. INST.)	9M
CHANGES TO ERS DESIGN	5M
SITE PREPARATION	6M
PRIME POWER (DIESEL)	3M
ASSOCIATED GOVERNMENT COSTS...	<u>11M</u>
	\$63M

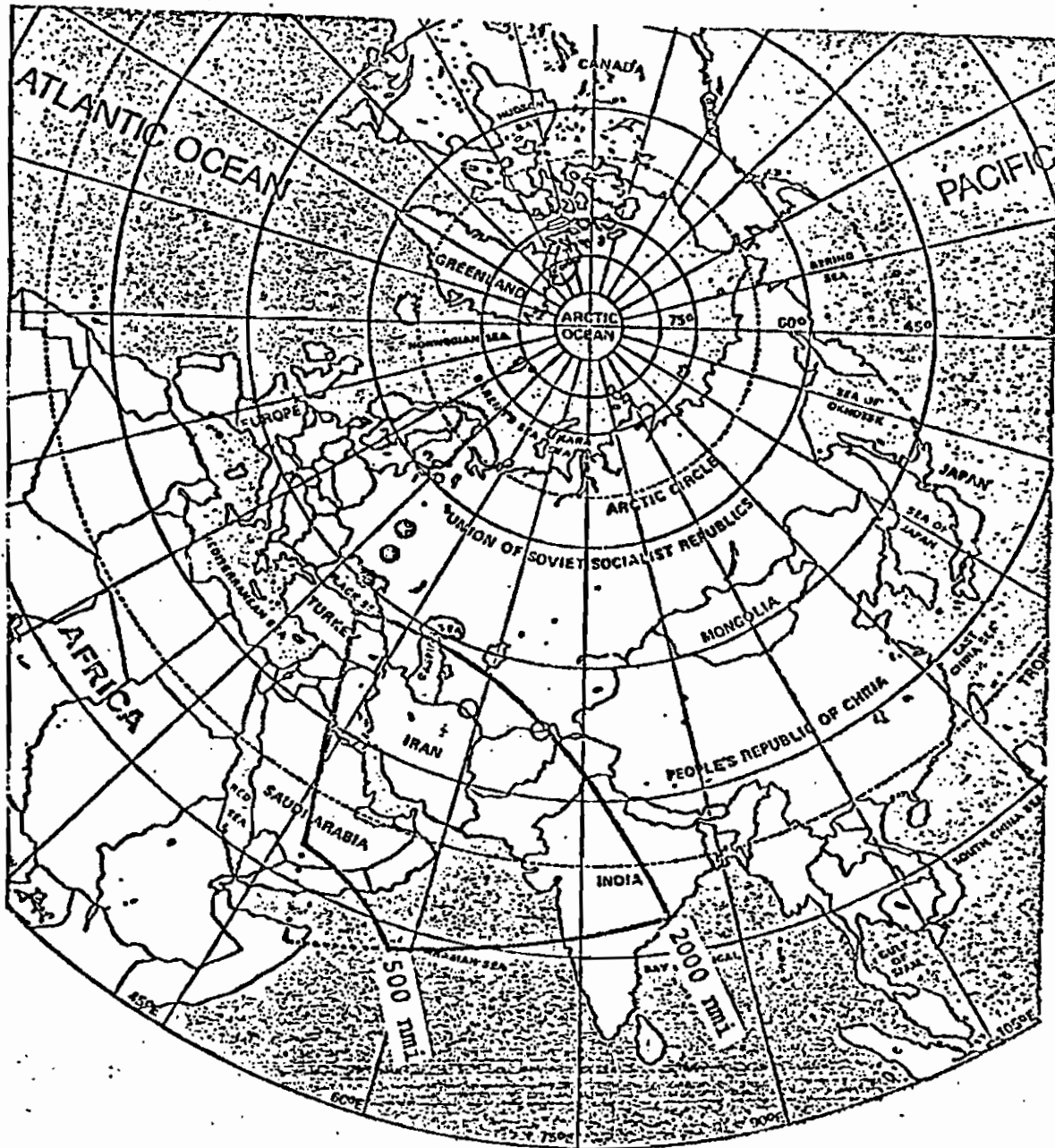
OPTION SELECTION

~~SECRET~~

•• Another radar installation of PRS has been considered for various mid-east locations.

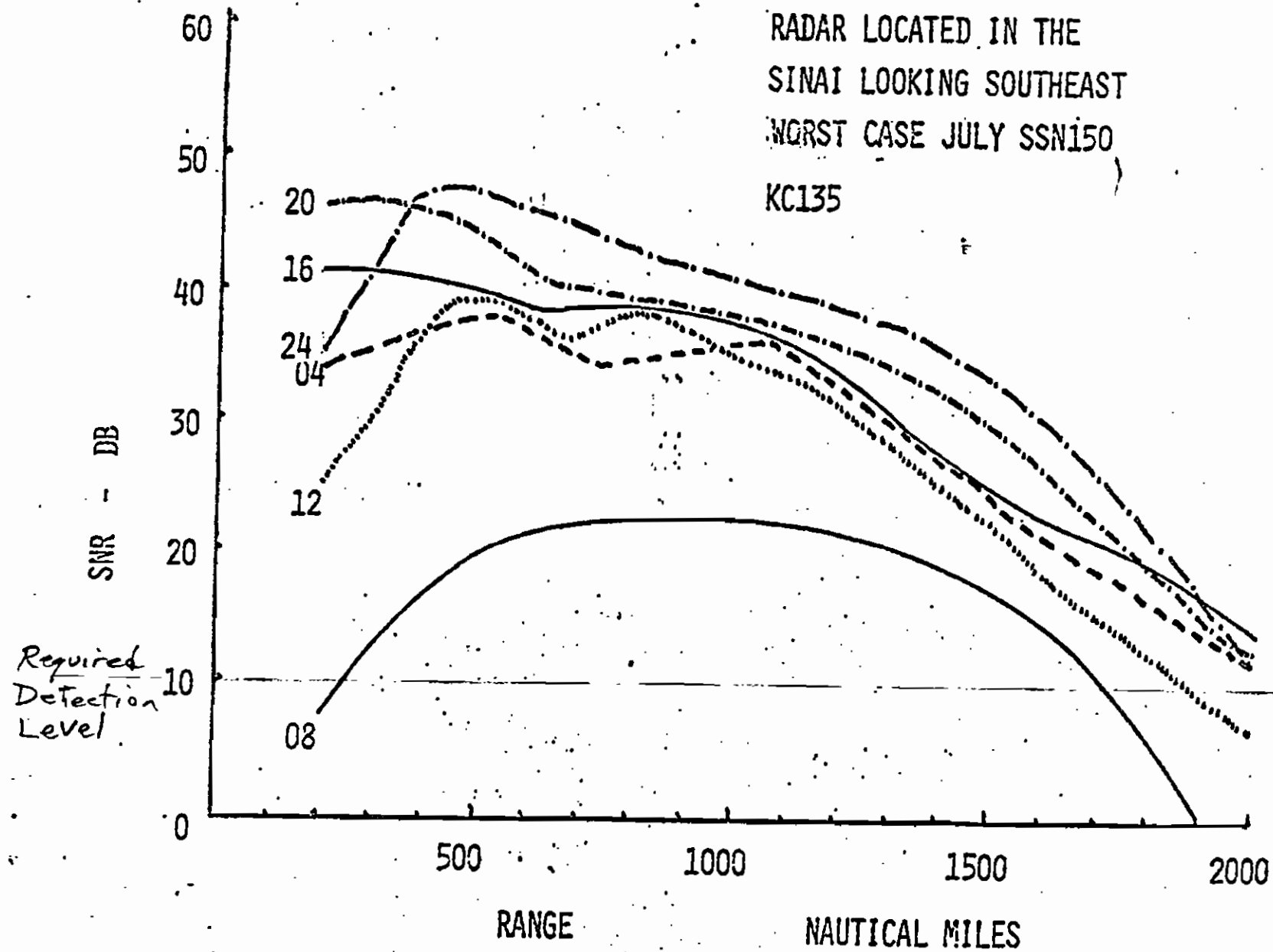
• Radar located in the Sinai looking Eastward.

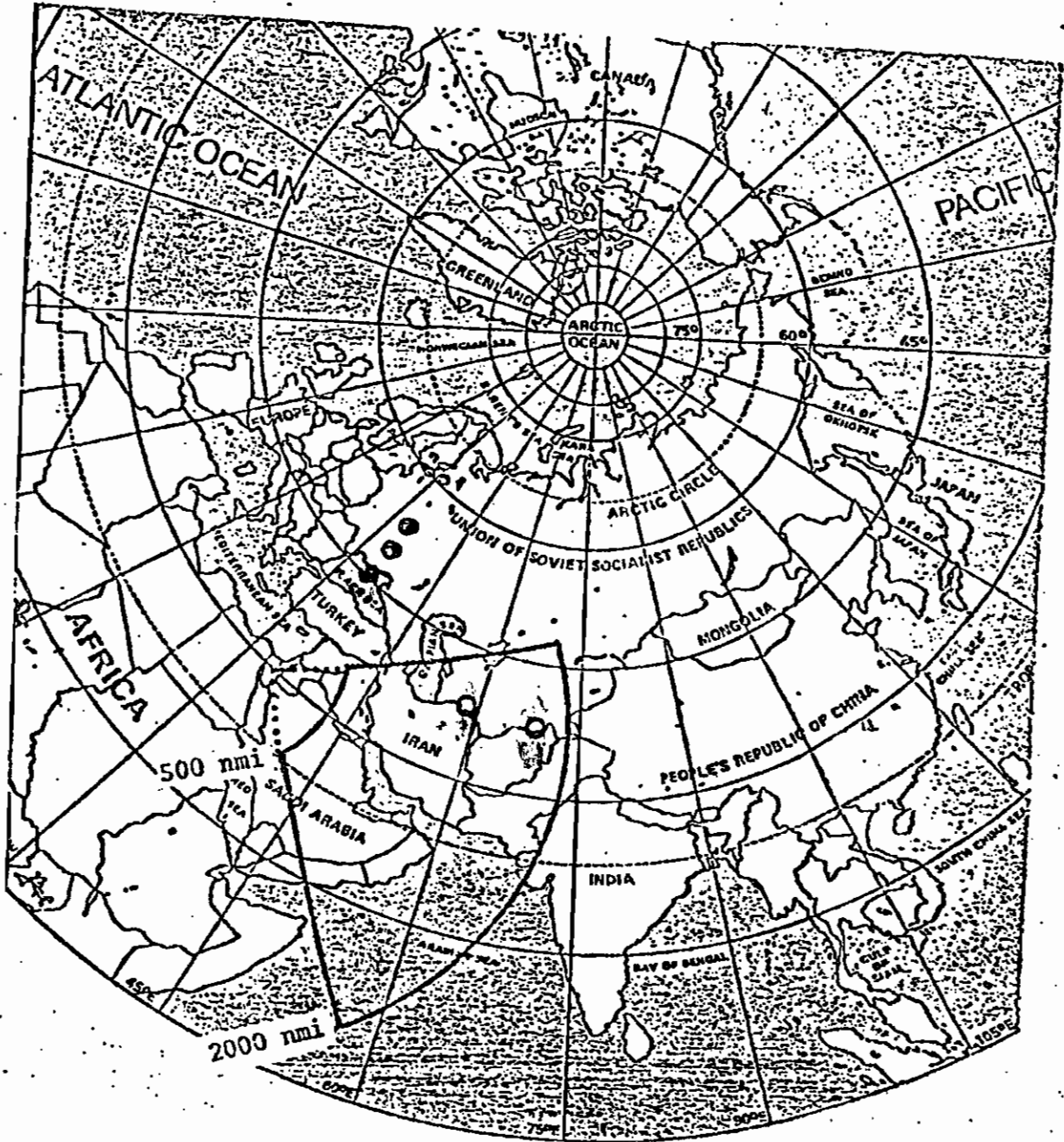
• Radar located in Somalia looking Northeast.



- Backfire airbases
- Backfire capable airbases

Figure 2. (S) Radar surveillance of the Persian Gulf provided by one 90° OTH radar module located in Somalia. (S)





- ⊙ Backfire airbases
- ⊙ Backfire capable airbases

Figure 1. (S) Radar Surveillance of the Persian Gulf area provided by one 90° OTH radar module. (S)

SUMMARY

RE-ORGANIZATION TECHNOLOGY FOR THE EARLY/CHILDREN PROBLEMS FOR

USING GROUPS IN THE EARLY YEARS

CONTRIBUTION TO THE EARLY CHILDREN PROBLEMS

TRAINING CAPABILITY FOR THE EARLY CHILDREN PROBLEMS