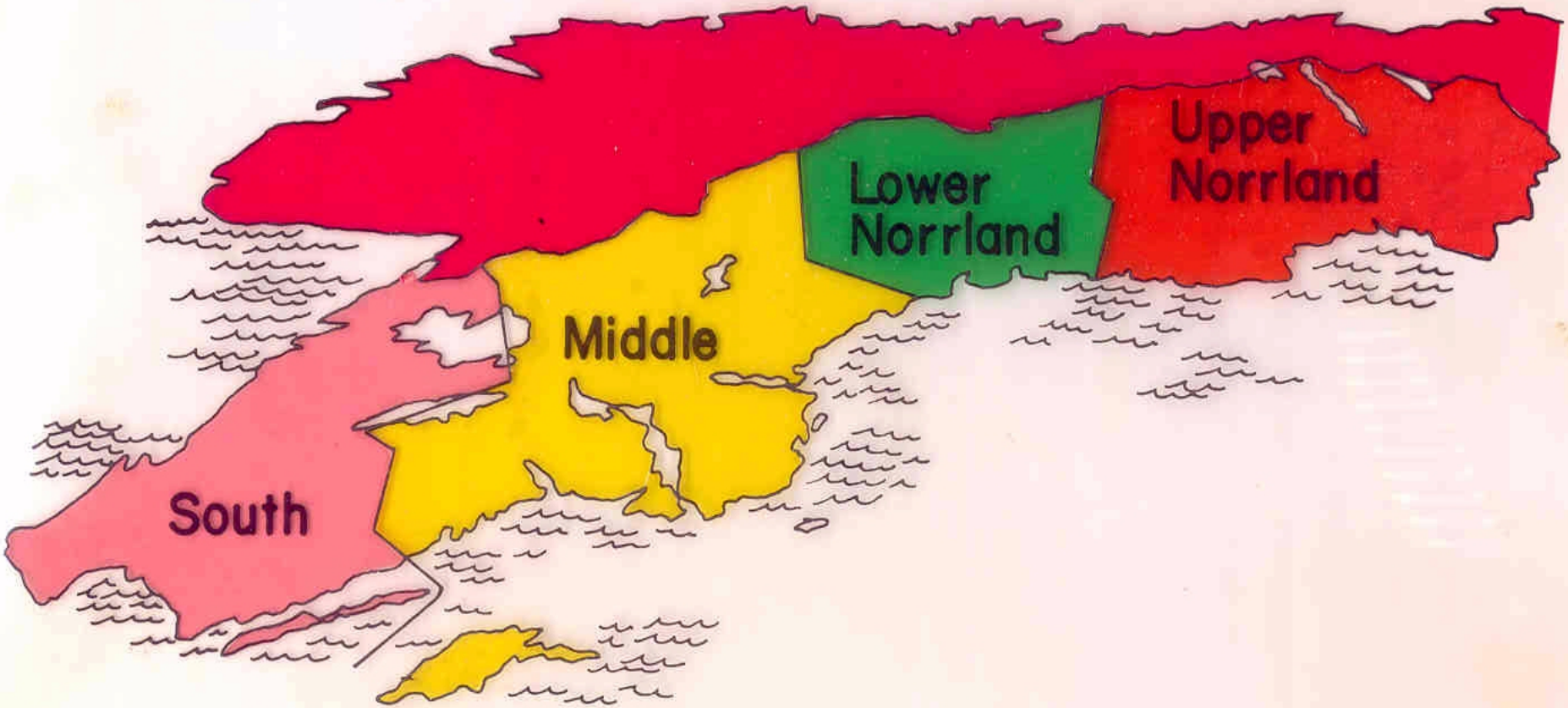
COMMAND

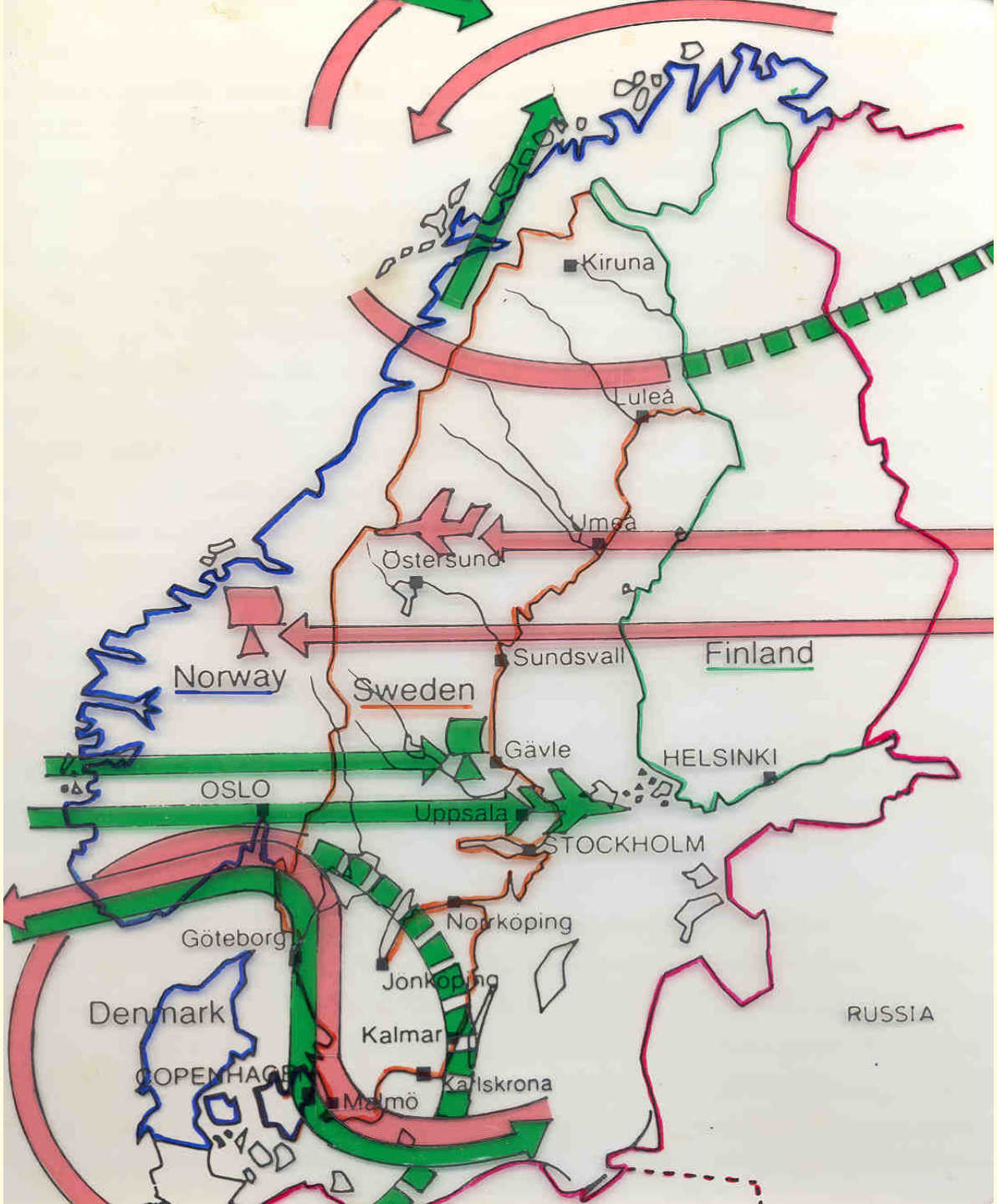
- Decide on Strategies
- Mission Planning
- Establish Priorities
- Allocate Resources

CONTROL

- Surveillance
- Direct Weapons to Targets

Air Defence Sector




Kiruna
Luleå
Umeå
Östersund
Sundsvall
Finland
Norway
Sweden
Gävle
HELSINKI
OSLO
Uppsala
STOCKHOLM
Norrköping
Göteborg
Jonköping
Denmark
Kalmar
RUSSIA
COPENHAGEN
Karlskrona
Malmö

Comparison of Population & Area

Country	Population	Area (sq. km)
W Germany	61.6 m	248,630
Holland	14.2 m	33,811
Belgium	9.9 m	30,513
Austria	7.5 m	83,853
Switzerland	6.3 m	41,288
Total :	99.5 m	438,095
Sweden	8.3 m	486,661

Incidents Reported in 1982

- Border violations 28
- Number of detections of unidentified aircraft 1,113
- Number of scrambles of fighter interceptors 293
- Number of scrambles of aircraft for identification 259

SWEDISH FIGHTER ORBAT

	Squadrons	Aircraft
1. Interceptors		200
DRAKEN	10	
VIGGEN	2	
2. Ground Attack		150
VIGGEN	5.5	
SAAB 105	5.0	
3. Recce		
VIGGEN & SAAB 105	6	80
Total :	28.5	430

MANPOWER OF SWEDISH AIRFORCE IN 1982/83

Regular Officers	4, 150
Civilians	4, 250
	8, 400
Active N S	4, 560
Reserve Co Cdr	1, 100
Reserve Platoon Cdr	100
Reserve Civil Mil Offrs	200
Reservists	55, 490
	61, 450
Total :	69, 850

Swedish Airforce Missions

1. Surveillance of airspace around and over Sweden.

2. Air Defence.

3. Strategic and Tactical Recce.

4. Ground Attack.

5. Warning for Civil Defence.

STRIL = Control System For Combat

World War Two :

- Pilots given maps showing Army AAA.

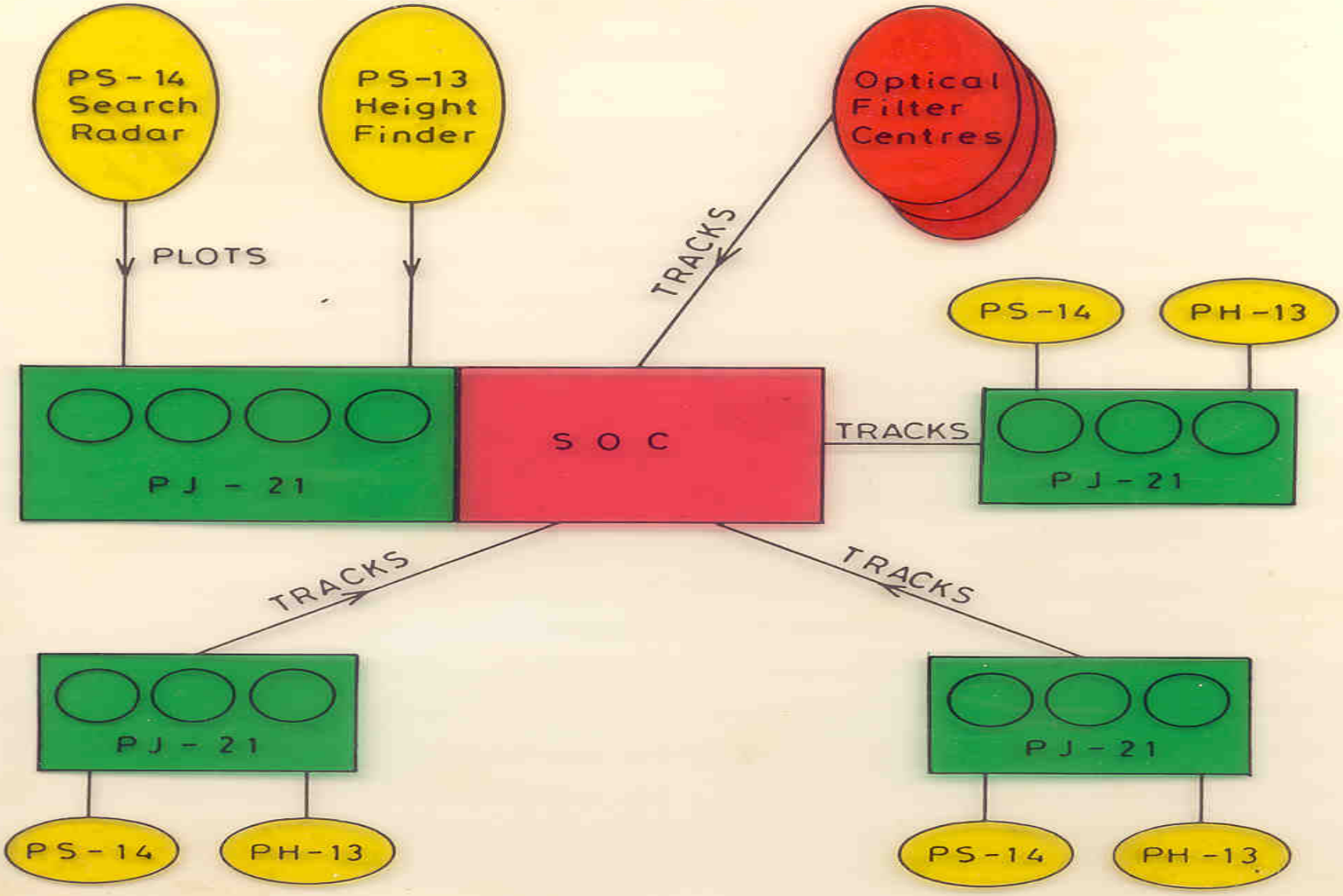
- Army air observers report sightings to optical filter centres.

- Reports are plotted on a map.

- AAA units are alerted by telephone of enemy.

- Air Observer Corp was transferred to Airforce with introduction of radio in aircraft and subsequent ground control.

STRIL-50


PS-14 Search Radar
PS-13 Height Finder
Optical Filter Centres
PLOTS
TRACKS
PS-14
PH-13
PJ-21
SOC
TRACKS
PJ-21
TRACKS
TRACKS
PJ-21
PJ-21
PS-14
PH-13
PS-14
PH-13

Advances In 1950 -1955

- Able to remote radar picture by broadband and narrow band links.

- Computer can be used to automate some SOC functions.

STRIL-60 OPERATIONAL REQUIREMENTS (1958)

- Centralised Command at SOC.
- Centralised Contol at SOC.
- Computer aided target tracking.

- Computer aided intercept control.
- Digital command to fighter.
- Radars with good ECCM.
- Radar system to be survivable.

STRIL SENSORS

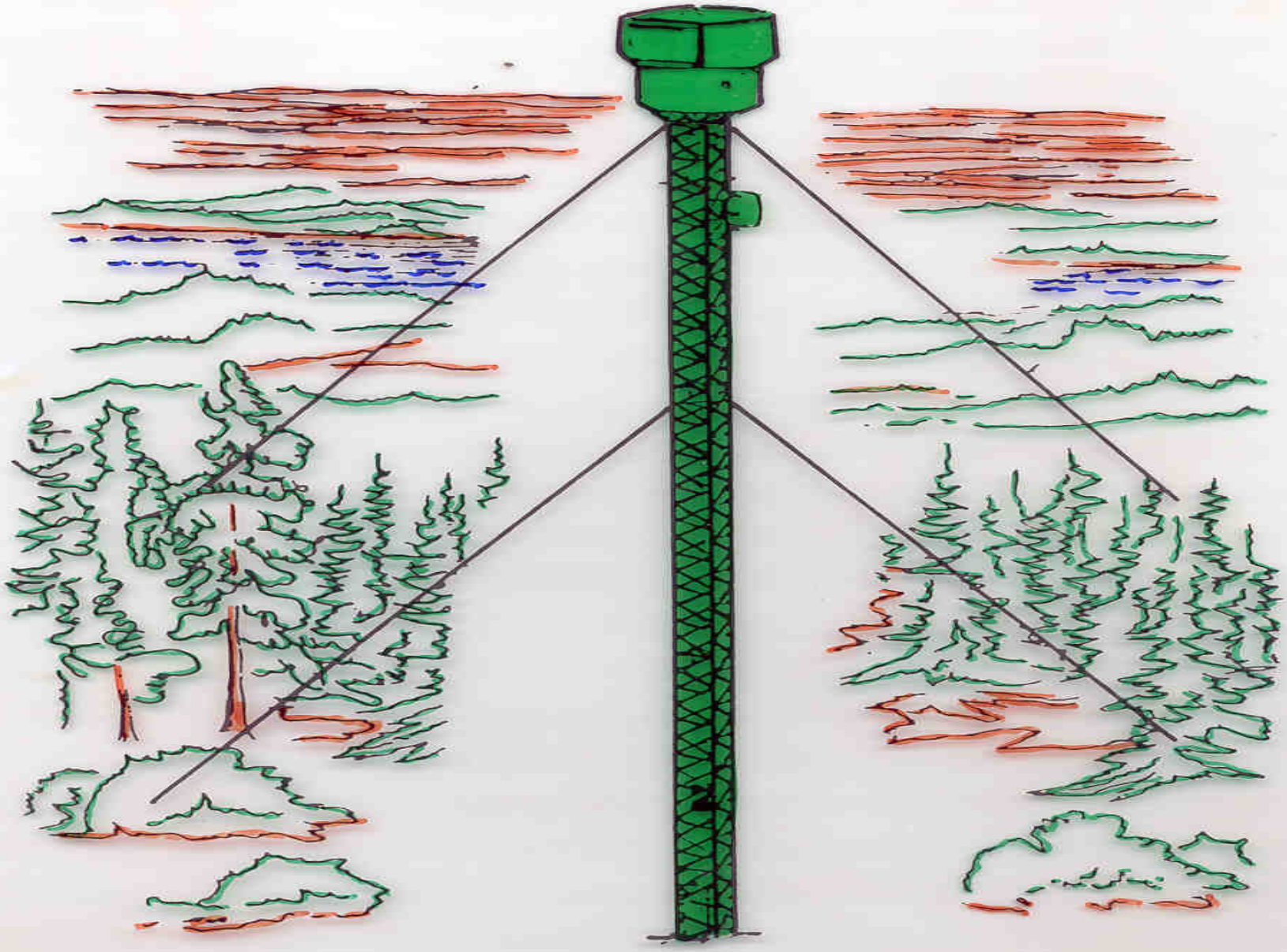
1940 Optical Observers

1950 PS-14 "S" Band

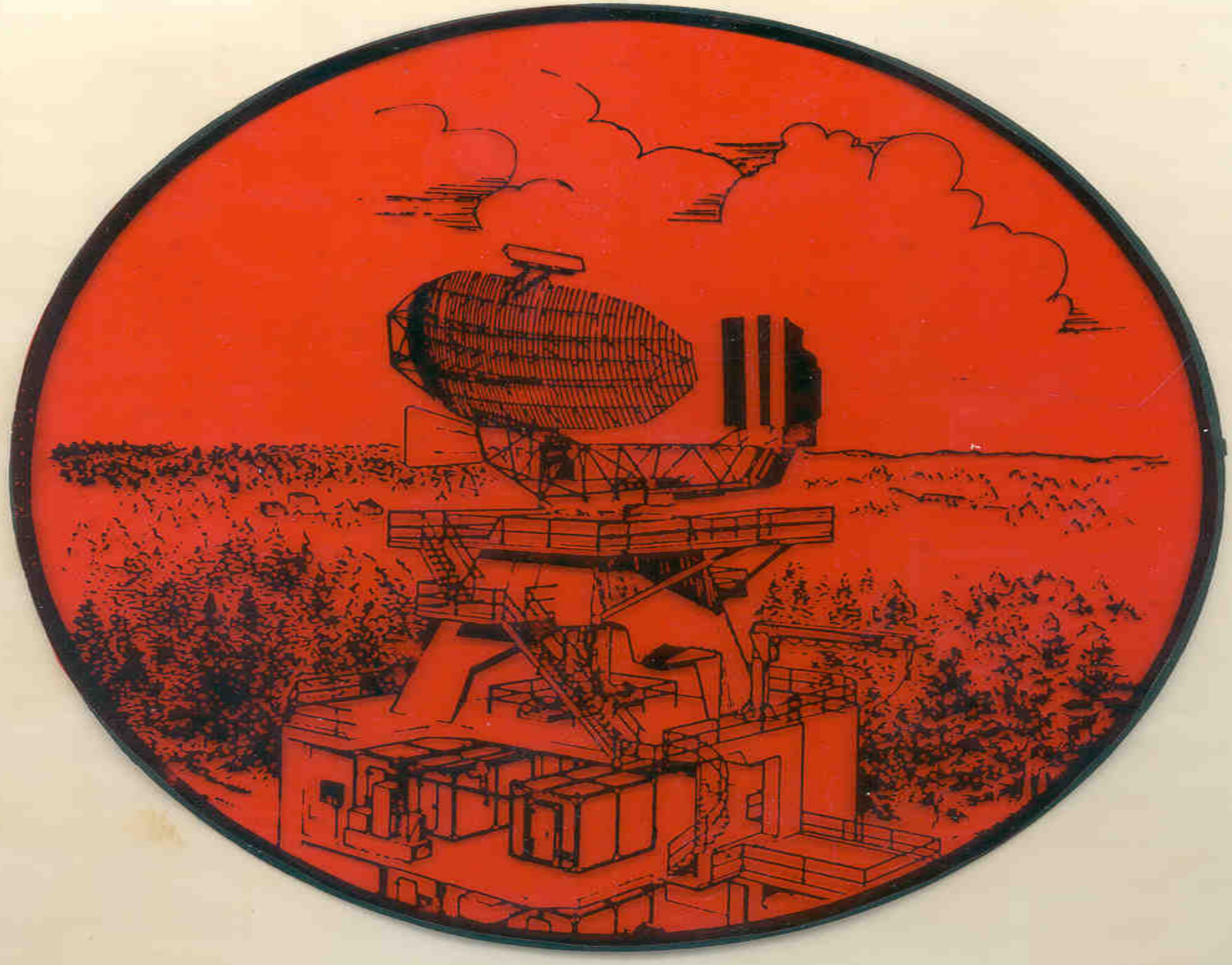
PH-13 HF

STRIL SENSORS

1964	8 x Thomson "L" Band 2D radars
1966	14 x Selenia "C" Band 2D radars
1970	5 x Thomson "S" Band 3D radars

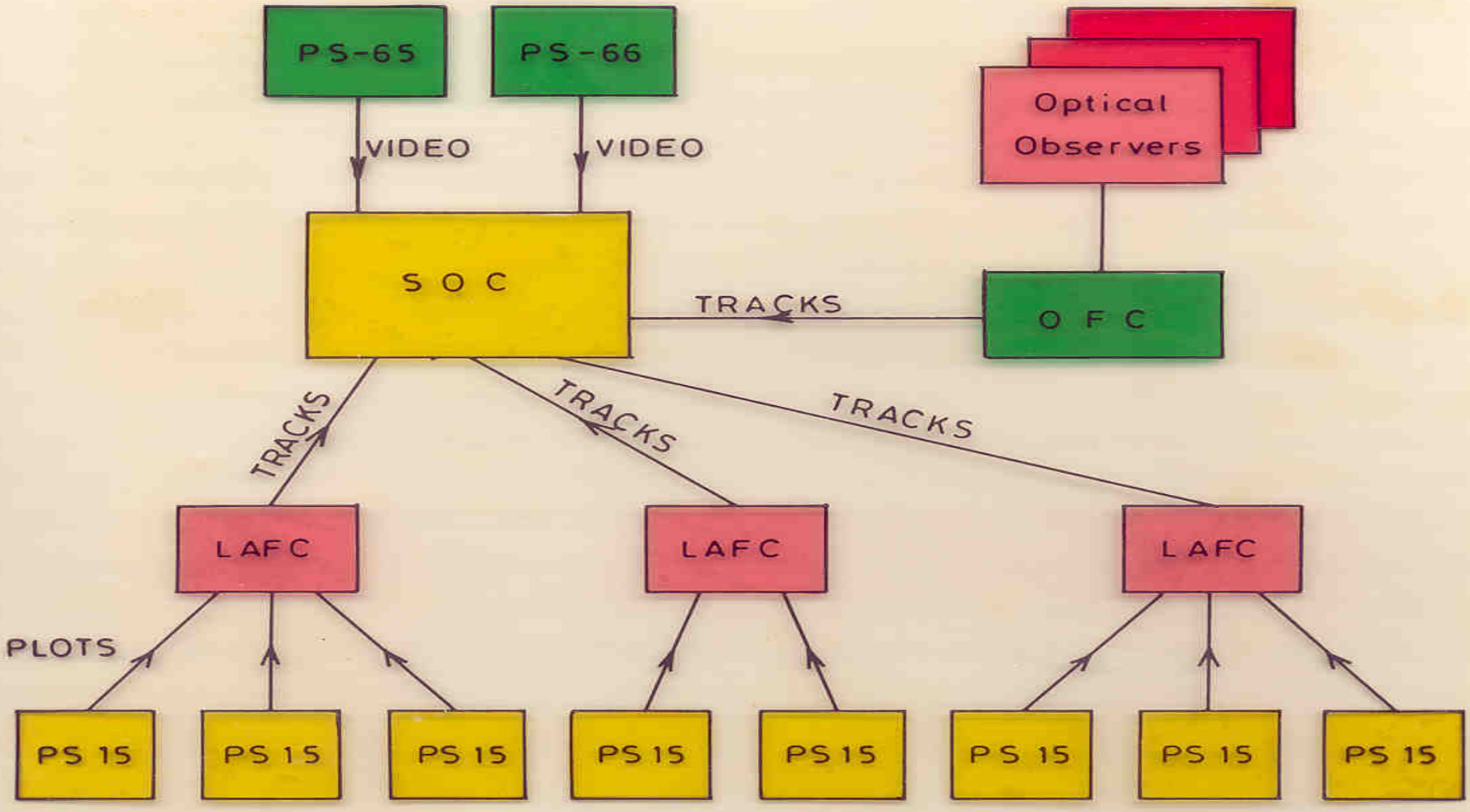


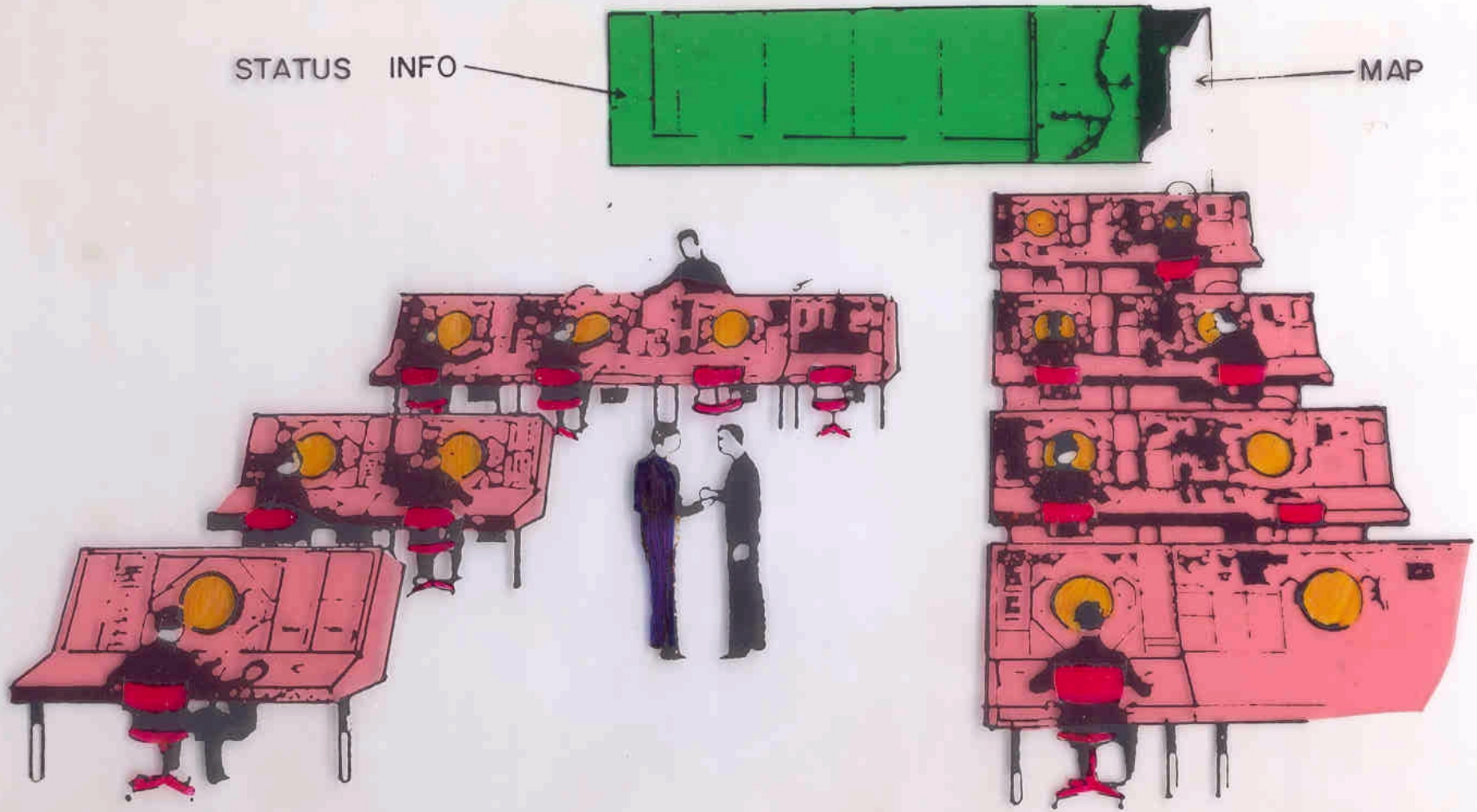
SKETCH OF SELENIA 'C' BAND LOW LEVEL SEARCH RADAR PS 15



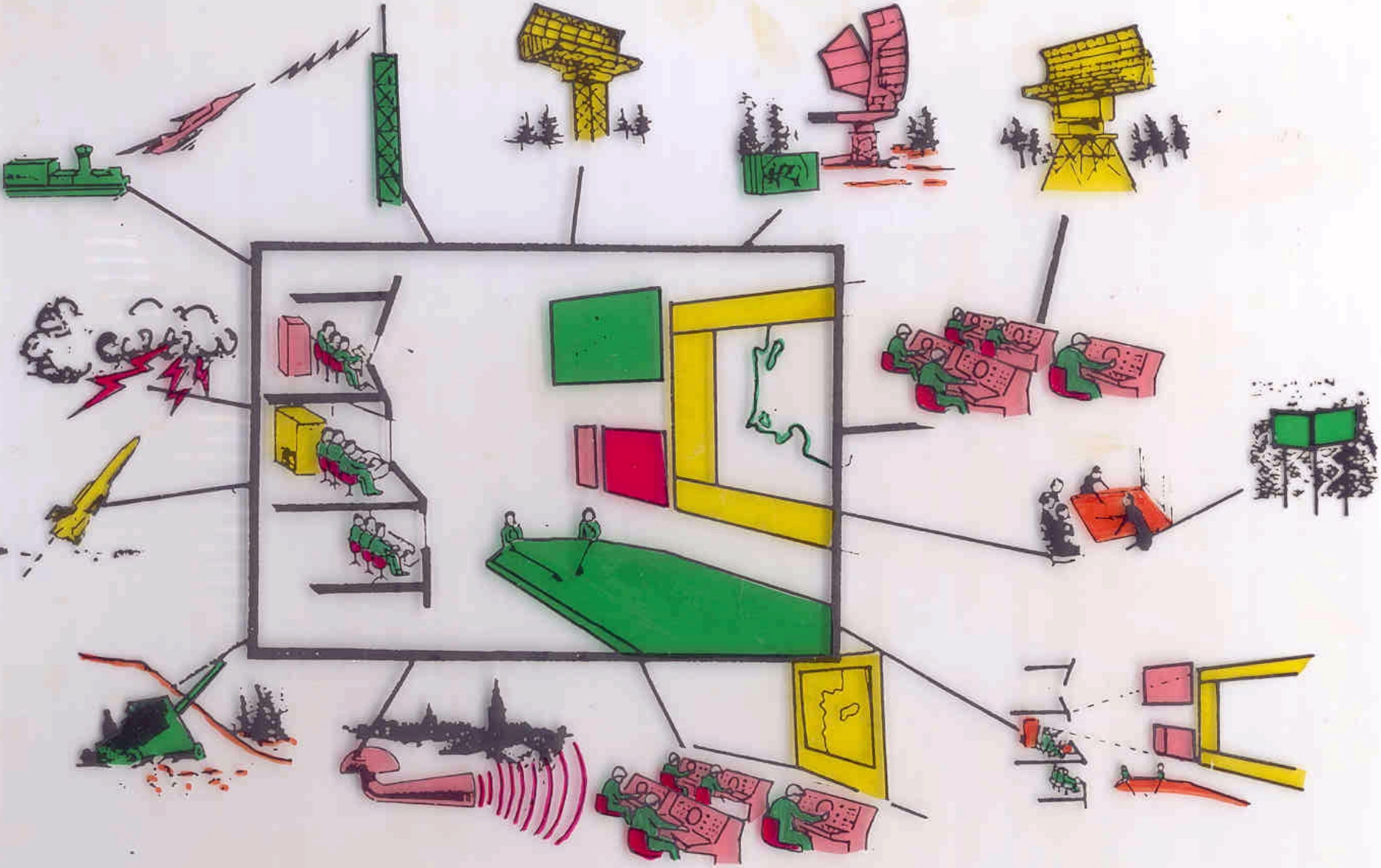
SKETCH OF THOMSON S BAND 3 D RADAR PS 66

STRIL-60 SOC IN MIDDLE AND SOUTHERN AREAS (1959-1962)



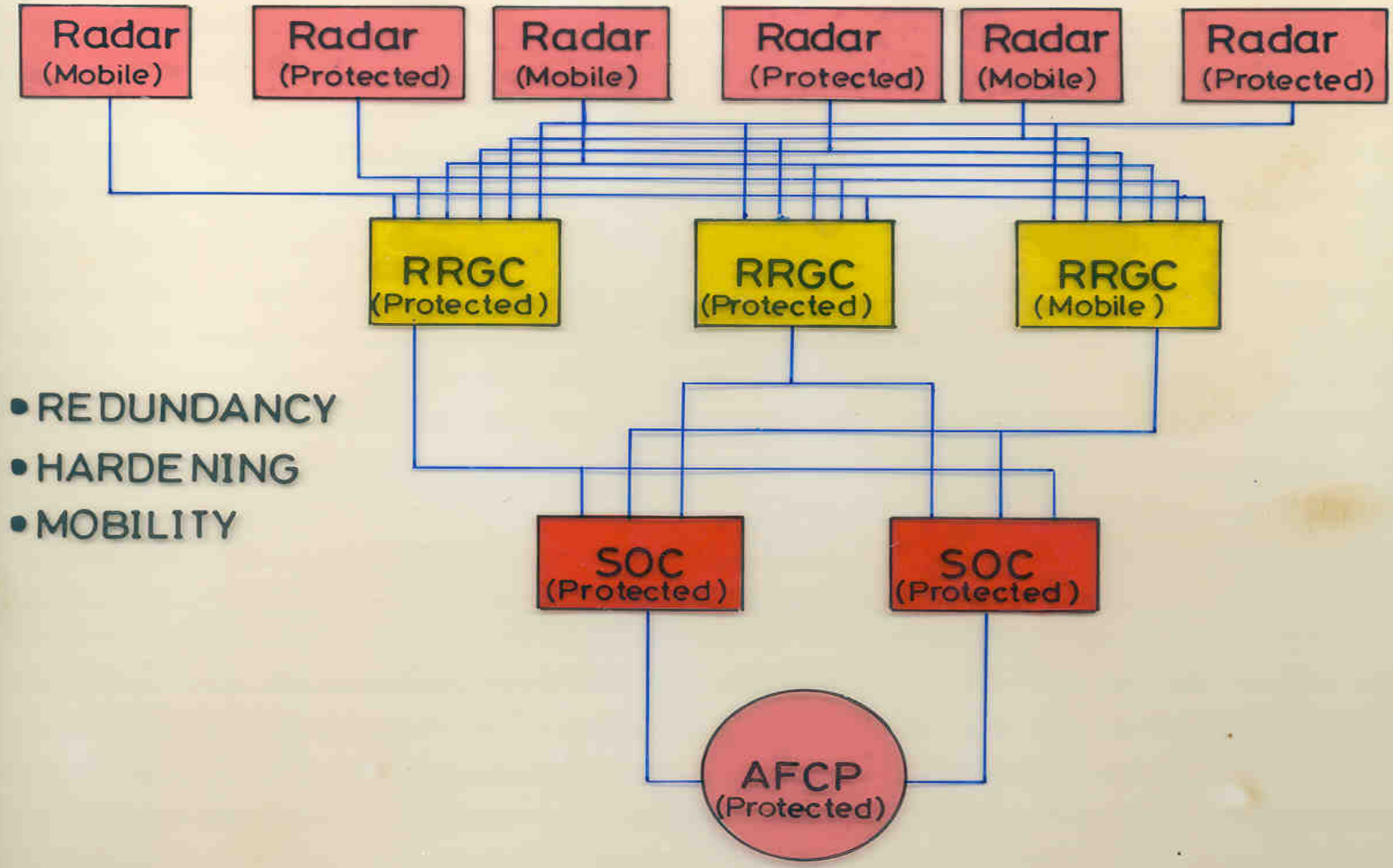


SKETCH OF OPERATIONS ROOM OF RRGC AT TULLENGE



SKETCH OF SOC TYPE TWO
LOCATED AT UPPER AND LOWER NORRLAND AREA

STRIL CONCEPT FOR SURVIVABILITY



- REDUNDANCY
- HARDENING
- MOBILITY

STRIL-60 Radar System

PS-66 : Expensive "S" band 3D radar with excellent ECCM capability (5 units purchased).

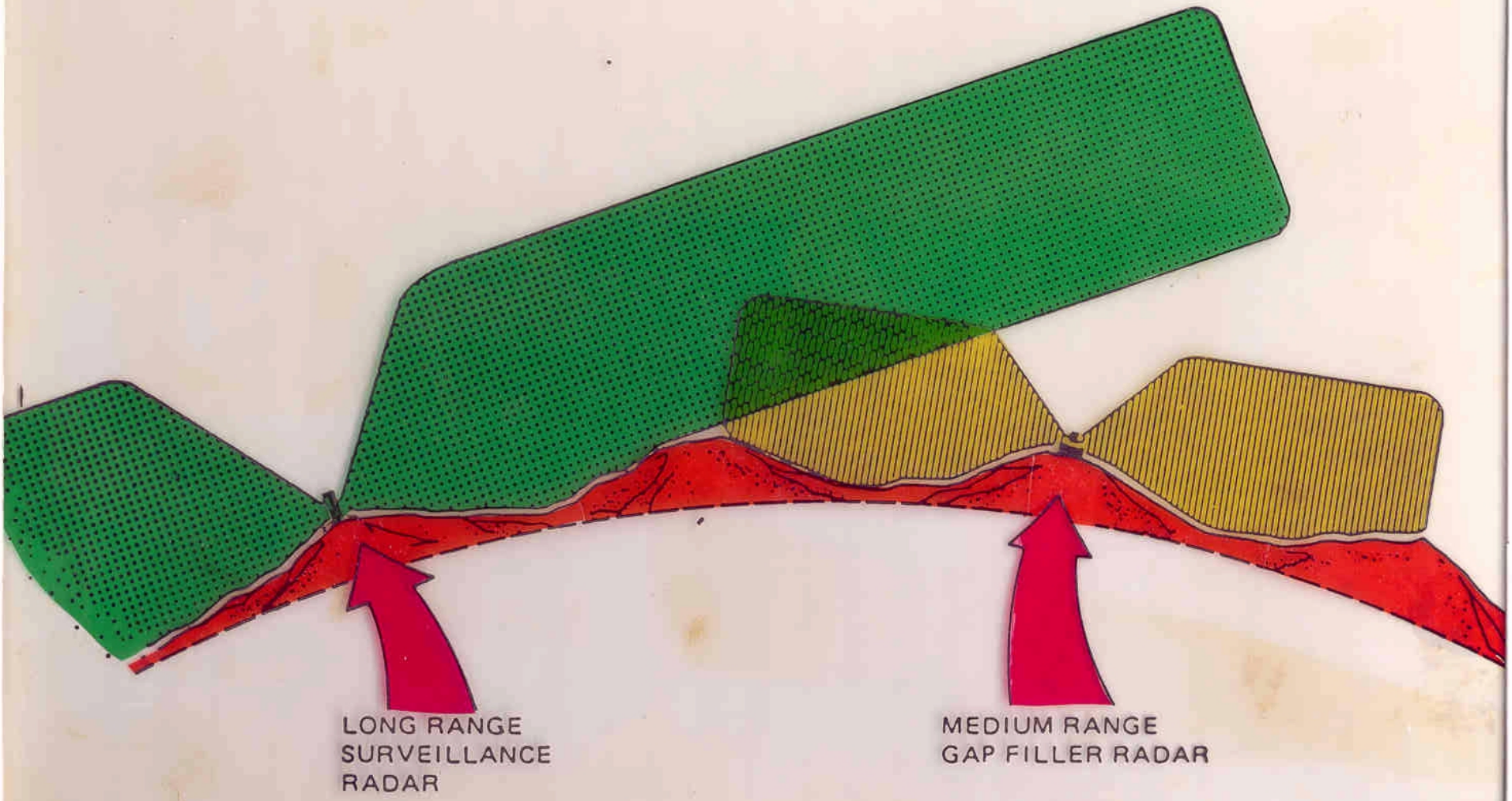
PS-60 : Cheap "S" band, 3D radar as gap filler and backup for PS-66 (not purchased).

PS-65 : "L" band, 2D radar (9 units purchased).

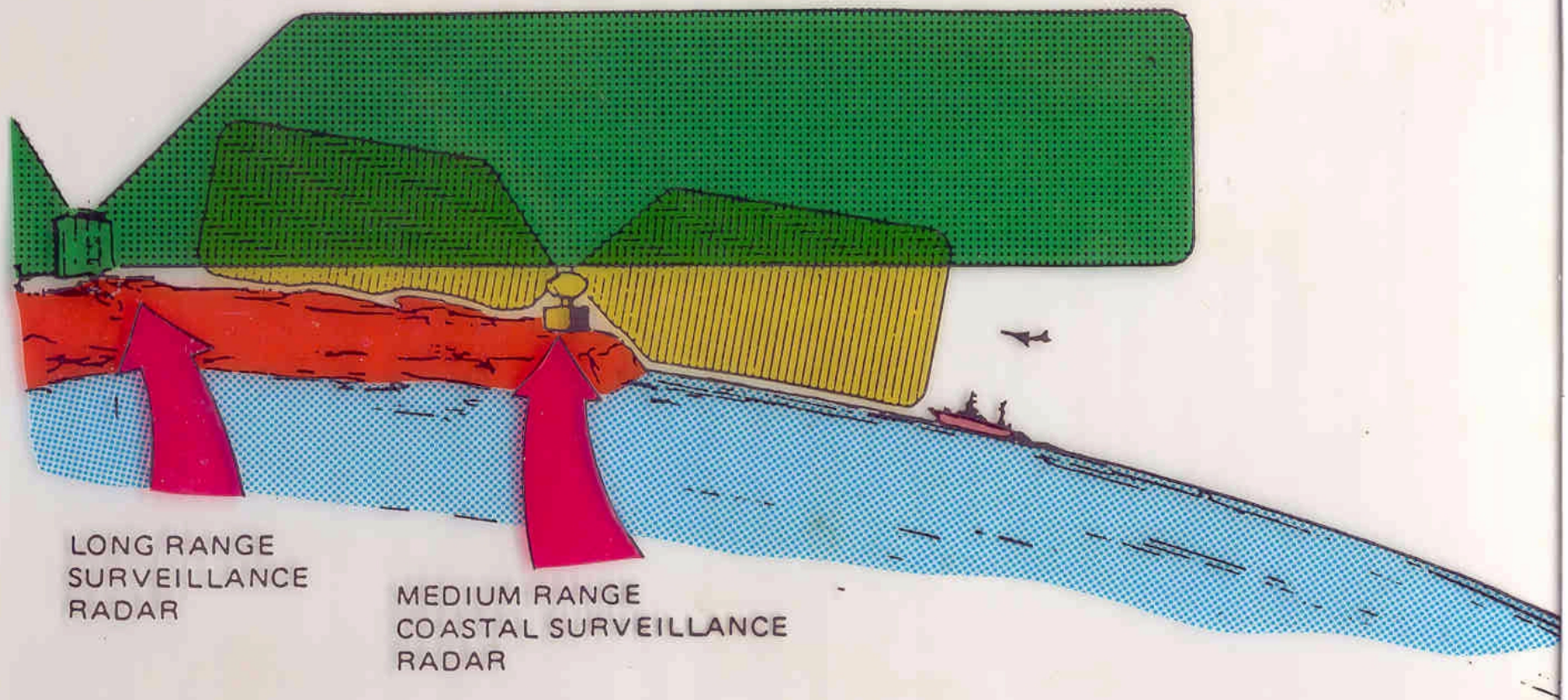
PS-15 : "C" band, 2D low level radar (14 units purchased).

STRIL SENSORS

1978	ESM
1982	16 x ITT-320 "S" Band 3D Radars
1987	16 x ITT Falcon "C" Band 2D Radars
1990	AEW Radars



Continuous low altitude coverage is provided using gap filler radars to complement long range radars.


LONG RANGE
SURVEILLANCE
RADAR
MEDIUM RANGE
COASTAL SURVEILLANCE
RADAR

SKETCH OF ITT GILFILLAN 'S' BAND 3D RADAR WITH ANTENNA MOUNTED ON AN ELEVATOR AND RADAR EQUIPMENT IN A TUNNEL

Upgrading of STRIL-60

TOR

Requirement - 1974

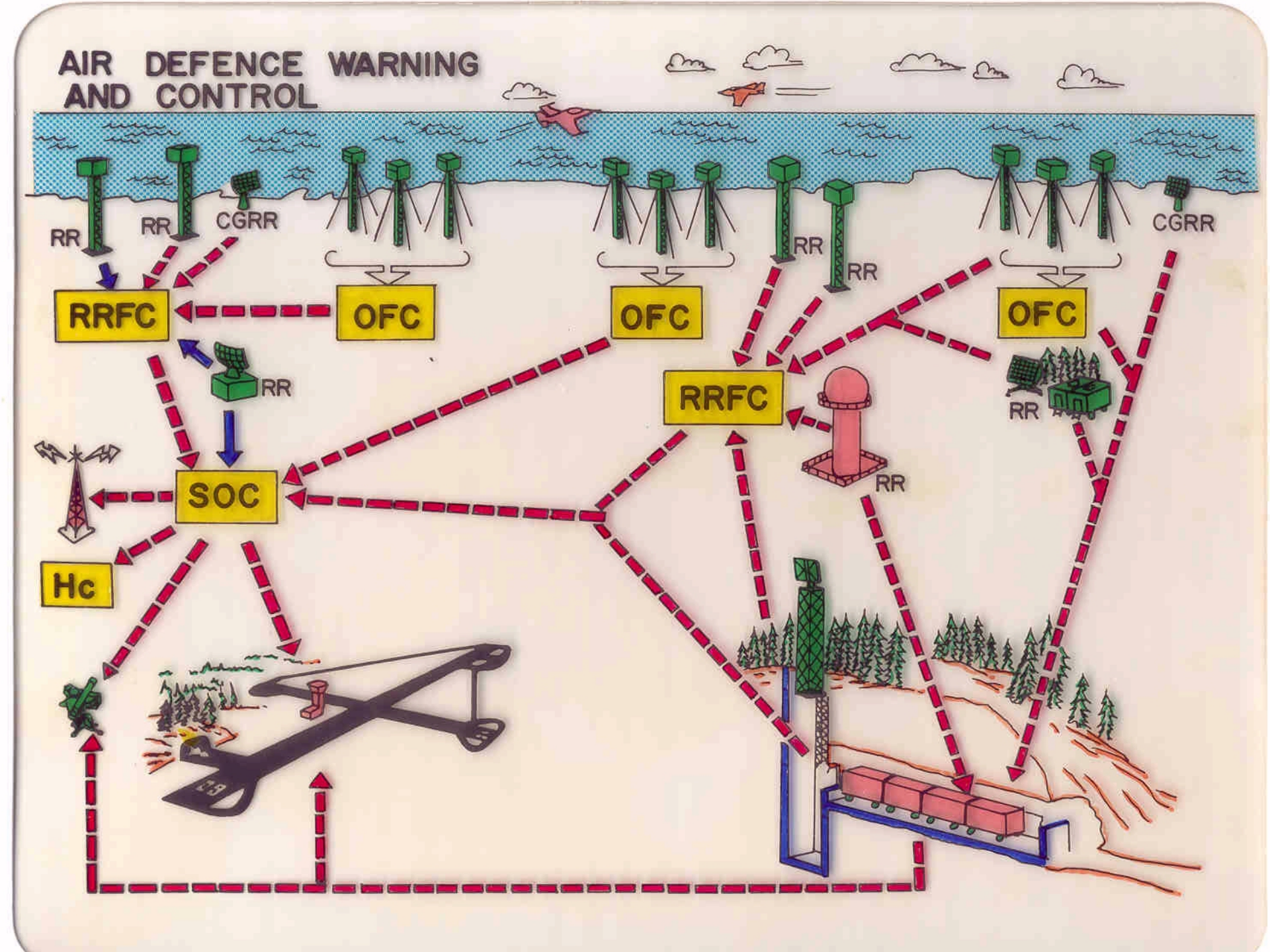
- Cheap Control & Reporting Post
- Transportable Radar Group Centre
- Deployment - 1982

TOR - CRP ROLE

- 1 x ITT 320 Radar
- 4 x Control Positions
- 1 x Control Cabin

TOR - RRGC ROLE

- 6 x Remote radars
- 12 x Control positions
- 3 x Operational Cabins
- 1 x Computer & Comms Cabin


AIR DEFENCE WARNING
AND CONTROL
RR
RR
CGRR
RRFC
OFC
OFC
RR
RR
OFC
CGRR
RR
RRFC
RR
RR
SOC
Hc

STRIL - 90

1983 SOR Completed

1985 Issue RFP

1987 Contract Award

1991 Equipment Delivery

1995 Full Operation

STRIL - 90

Sensors - 16 x ITT-320
17 x Falcon

Displays - Personal
- Group-colour

Data Comms - AEW to STRIL
STRIL to JAS

CONCEPT

1. Completely Flexible

2. No borders

3. Modular in architecture

4. No constraints to growth

SOFTWARE

- 800 man year of effort.
- Develop software first then buy hardware.
- US Army ADA language maybe used.

COMMUNICATIONS

- LAN within centre for high speed comms.
- Low speed comms between centre.
- Flexible comms.
- Computer controlled Communications Network.