

ii) *Efforts to Improve the Early Warning System*

During the course of operations, SFM staff searched for ways to reduce the manpower required to operate the early warning system without sacrificing efficiency and effectiveness. A number of alternatives for substituting personnel with additional advanced technology were considered. These included centralized detection and identification patrols, centralized detection and identification by remote imaging devices, substituting radar for the unattended groups of sensors, and centralized radar detection and remote imaging.¹⁶ From a technical point of view, all of these options were attractive. A large reduction in manpower, however, did not fit with the political importance of ensuring credibility for the American promise to guarantee the agreement. The requirement to sustain this political symbolism precluded using technical measures that could have substantially reduced manpower.

In order to improve the system's technical efficiency while preserving its political-symbolic mission, a centralized detection system was eventually installed with the identification func-

tion left to the SFM, without any subsequent reduction in personnel. Prior to these improvements, introduced on March 1, 1978, sensor activations had been received on "strip charts" that watch station personnel would analyze to determine the nature of the intrusion. These findings were then relayed from the watch stations to the operations centre at SFM Headquarters. With the new centralized detection system, signals were relayed directly from the sensor fields to the operations centre at SFM Headquarters where all activations were instantaneously displayed on a small-scale map of the early warning area. Once the sensor activation lit up small bulbs on the map, the personnel on duty could instantly see the location of an intrusion and, by observing the number of sensors that had been activated in a line perpendicular to the road, determine the nature of the object in question.¹⁷ This centralized detection

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¹⁶ Alternatives involving advanced technology and procedures considered by the SFM as substitutes for personnel included:

1. *Centralized detection and identification patrols:*
 - Removal of all personnel from watch stations and a centralized facility is established for monitoring alarms transmitted by unattended ground sensors whenever an intrusion occurs. Identification is done by jeep or airborne patrol.
2. *Centralized detection and identification by remote imaging devices:*
 - All personnel removed from watch station.
 - Both the detection and identification functions are performed from a centralized facility.
 - All unattended ground sensor alarms are transmitted to this centralized facility where watch personnel immediately analyze them to determine whether an intrusion has occurred and operate remotely controlled day and night television cameras overlooking the sensor fields.
 - The pictures are transmitted back to the centralized facility where the camera operator identifies the intruder.

3. *Substitution of radar for the unattended ground sensors:*

- Unattended ground sensors are replaced with ground surveillance radars.
- Each of these radar devices can cover a much larger area than an unattended ground sensor and can improve the performance of the system by providing better identification under adverse climatic conditions.
- When an intrusion occurs the radar transmits an alarm to the watch station where watch-station personnel identify the intruder.

4. *Centralized radar detection and remote imaging:*

- A combination of numbers 2 and 3.
- Unattended ground sensors are replaced by ground surveillance radars and television cameras with both day and night capability are used for identification of intrusions.
- Both radar activations and video signals are transmitted directly to a centralized monitoring facility.

Cited in United States Sinai Support Mission, *Report to the Congress*, April 13, 1977, pp. 9-13.

¹⁷ United States Sinai Support Mission, *Report to the Congress*, April 13, 1978, pp. 10-11.

