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imagery analysis report

SAM Forces in Cuba (S)

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SAM FORCES IN CUBA (S)

INTRODUCTION

1. The Cuban air defense system includes a network of SAMs consisting primarily of the SA-2 (GUIDELINE) and SA-3 (GOA) missile systems supplemented by the SA-6 (GAINFUL) and SA-9 (GASKIN) mobile missile systems and the SA-7 (GRAIL) man-portable, shoulder-launched missile system. This report provides a summary of the organization, location, and strength of Cuban SAM forces as of [redacted] Information on SAM alert indicators, SAM support facilities, and the SAM system associated with the Soviet Brigade is also included. (S/WN/NOFORN)

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2. The SA-2 system was first seen in Cuba in 1962 and provides defense against medium- and high-altitude aircraft. The deployment of the SA-3 system since 1976 provides defense against low-altitude aircraft. The acquisition of the SA-6 and SA-9 mobile systems within the last two years has increased Cuba's tactical air defense capabilities. (S/WN/NOFORN)

DESCRIPTION

Organization of SAM Forces

3. Five SAM brigades have been identified in Cuba¹ (Figure 1 and Table 1). Western SAM Brigade One and Western SAM Brigade Two are headquartered at Bejucal Barracks and Headquarters East (BE [redacted] and Managua SAM Support Brigade Number 2 [redacted] respectively, and are deployed to defend the Havana area. Central SAM Brigade One is headquartered at Santa Clara Air Defense Headquarters Central Sector [redacted] and is deployed to defend the Santa Clara and Cienfuegos areas of central Cuba. Central SAM Brigade Two, previously designated as Western SAM Brigade Three, is headquartered at Matanzas and provides air defense for the Matanzas area of northern Cuba. The Eastern SAM Brigade, the only SAM brigade on the eastern half of the island, is headquartered at Holguin and defends Holguin Airfield [redacted] and the surrounding areas. [redacted]

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Location and Strength of SAM Forces

4. A Cuban SA-2 battalion contains six launchers, and an SA-3 battalion contains three four-rail launchers. The unit composition of a Cuban SAM Brigade varies.¹ All five brigades contain the SA-2 system; however, only Western Brigades One and Two, near Havana, contain the SA-3 system. On [redacted] the highest concentration of occupied SAM sites was in the Havana area, where units of Western SAM Brigade One were deployed at five SA-2 sites and three SA-3 sites, and units of Western SAM Brigade Two were deployed at three SA-2 sites and six SA-3 sites. Units of Central SAM Brigade One occupied six SA-2 sites, units of Central SAM Brigade Two occupied four SA-2 sites, and units of the Eastern SAM Brigade occupied four SA-2 sites. The operational strength of the five SAM brigades on [redacted] was 22 deployed SA-2 battalions and nine deployed SA-3 battalions. In the Western SAM Brigade One area, an SA-2 battalion was partially field deployed with an SA-3 battalion at Mariel SAM Site Dual SA-2 SA-3 A30-02 on [redacted] (Figure 2); however, by [redacted] only the SA-3 battalion was present, thereby reducing the overall count to 21 deployed SA-2 battalions. Two Cuban SAM battalions have frequently been deployed simultaneously at a single SAM site. When this occurs, one battalion usually occupies the equipment positions and the second battalion is field deployed adjacent to the site (Figure 3). This probably occurs when battalions are being rotated or when battalions are deployed for purposes of training or equipment checkout. This practice indicates that Cuban SAM forces maintain additional SAM battalions, in excess of those usually seen deployed, which are capable of operational deployment. On countrywide coverage of [redacted] two SA-2 sites contained two battalions; at one site, the second battalion was in the travel mode, and at the other site, the second battalion was field deployed adjacent to the occupied site. At several other sites, a single SAM battalion was partially deployed outside the site to allow for site renovation. [redacted]

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SAM Alert Indicators

5. The routine readiness level at an occupied SA-3 site is one launcher with four missiles, one launcher with two missiles, and one empty launcher (Figure 4). Four missiles on each of the three SA-3 launchers indicates a full alert posture. The missile-to-launcher ratio cannot be used to determine the alert status of the SA-2 system. At an occupied SA-2 site, all six launchers are frequently loaded during periods of routine readiness (Figure 5); however, because of missile maintenance and preparation,



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several launchers occasionally are empty during periods of routine readiness. The deployment of antiaircraft artillery (AAA) at an SA-2 site is the only imagery-derived indicator of an heightened alert. (S/WN/NOFORN)

SAM Support Facilities

6. Cuban SAM forces maintain a number of support facilities. Four facilities—Bejucal SAM Support Facility [redacted] Calabazar SAM Support Area [redacted] Santiago de Las Vegas Support Facility SAM [redacted] and Torrens Missile Support Facility SAM [redacted] Figure 6—and the brigade headquarters at Bejucal Barracks and Headquarters East and Managua SAM Support Brigade Number 2 provide support for the missile systems in Western SAM Brigades One and Two. All six facilities support the SA-2 systems, and all except the Calabazar and Managua facilities provide support for the SA-3 systems. The onsite support facilities at unoccupied Matanzas SAM Site South-Southeast A18-2 [redacted] provide support for the SA-2 systems in Central SAM Brigade Two. Support for the SA-2 missile systems in Central SAM Brigade One is provided by two installations identified on [redacted]—Santa Clara SAM Support Facility [redacted] which is under construction and Cienfuegos SAM Support Facility North [redacted] a field-deployed facility which possibly serves as a temporary equipment storage area. Holguin Airfield SAM Support Facility [redacted] supports the SA-2 missile operations of the Eastern SAM Brigade. Depot-level maintenance for all the SA-2 systems in Cuba is provided by San Jose de Las Lajas Repair and Storage Depot [redacted] (S/WN/NOFORN)

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Mobile Air Defense Systems

7. Mobile SAM systems have been identified with Cuban forces during the past two years. The SA-6 missile system was first seen at Cardenas Military Camp and Ammunition Storage Area [redacted] in December 1981. The only two SA-6 sites, Cardenas SA-6 Site Northwest [redacted] and Cardenas SAM Site A01-2 [redacted] were identified in early 1982 and remained occupied through the summer and early fall of 1982. SA-6 equipment was seen on [redacted] at Bejucal SAM Support Facility. As of [redacted] five SA-6 battalions, with each battalion containing four transporter-erector-launchers (TELs), had been identified. The subordination of these five SA-6 battalions is not known. (S/WN/NOFORN)

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8. The association of the SA-9 system with Cuban forces was confirmed on imagery of [redacted] Three SA-9 TELs were at San Pedro Military Training Area [redacted] as part of a self-propelled antiaircraft (SPAA) battery. This is the only SA-9 unit identified with Cuban forces. (S/WN/NOFORN)

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9. The only imagery-derived evidence of the presence of SA-7 system is the infrequent observation of SA-7 firing positions in various parts of the country. (S/WN/NOFORN)

Soviet Brigade SAM System

10. The SA-9 system is the only SAM system associated with the Soviet Brigade in Cuba. An SA-9 battery (four TELs) was identified with the Brigade at Santiago de Las Vegas Military Camp 2 [redacted] in April 1980 and has since been seen at San Pedro Military Training Area and Mariel Training Center and AAA School Granma Base [redacted]. The SA-9 battery is part of an SPAA battalion which provides the Soviet forces in Cuba with its brigade-level air defense assets. (S/WN/NOFORN)

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REFERENCES

IMAGERY

All applicable satellite imagery acquired from April 1980 through [redacted] was used in the preparation of this report. (S/WN/NOFORN)

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DOCUMENT

1. DIRNSA. Various TAG Series, CUZ ZDEF ZMSL ZORG ZTNG, Cuba from 1982 through April 1983. [redacted]

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RELATED DOCUMENT

NPIC. [redacted] IAR-0118/80, Cuban SAM Forces (S), Aug 80 (TOP SECRET CODEWORDS/NOFORN)

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Comments and queries regarding this report are welcome. They may be directed to [redacted] [redacted] Third World Forces Division, Imagery Exploitation Group, NPIC, [redacted]

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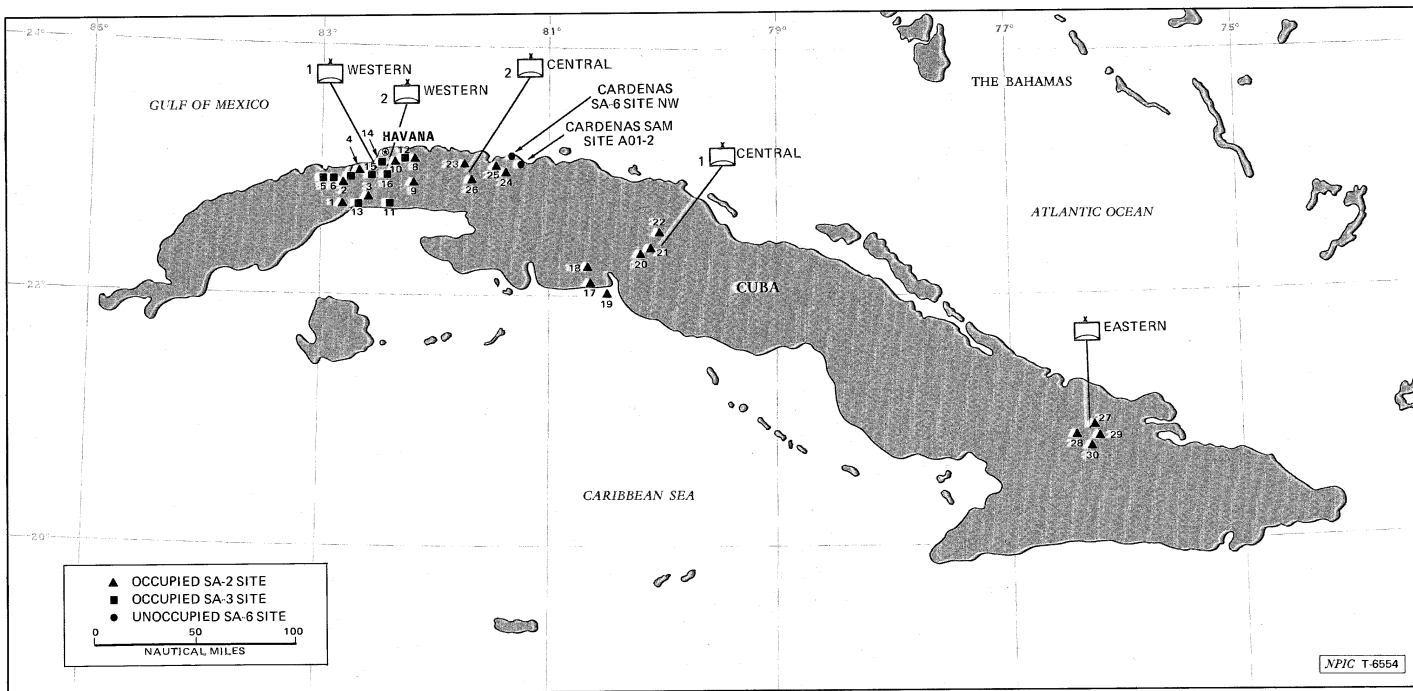


FIGURE 1. LOCATIONS OF SAM BRIGADES IN CUBA AS OF [REDACTED]

Table 1. Occupied SA-2 and SA-3 Missile Sites in Cuba as of [REDACTED] (Items keyed to Figure 1) This table in its entirety is classified SECRET.

Item	Installation	Geographic Coordinates	BE No	Remarks	Item	Installation	Geographic Coordinates	BE No	Remarks
Western SAM Brigade One									
SA-2 Sites									
1	Alquizar SAM Site A30-2	22-49-26N 082-38-37W	[REDACTED]	SA-2 bn partially field deployed for site renovation on [REDACTED]	16	Managua SAM Site A05-2	22-59-35N 082-16-02W	[REDACTED]	
2	Guantanamo SAM Site	22-57-03N 082-38-26W	[REDACTED]		Central SAM Brigade One				
3	La Salud SAM Site A04-2	22-53-08N 082-24-42W	[REDACTED]	SA-2 bn partially field deployed for site renovation on [REDACTED]	17	Cienfuegos Field Deployed SAM Site 4	22-08-15N 080-30-19W	[REDACTED]	FAN SONG E present on [REDACTED]
4	Punta Ballenatos SAM Site A2B-2	23-04-42N 082-29-49W	[REDACTED]	FAN SONG E radar present on [REDACTED]	18	Constancia SAM Site A10-2	22-14-21N 080-30-32W	[REDACTED]	
SA-3 Sites									
5	Maribel SAM Site Dual SA-2 SA-3 A30-2	23-00-44N 082-48-48W	[REDACTED]	Occupied by SA-3 bn only on [REDACTED]	19	Punta Movidia SA-2 SAM Site A20-02	22-03-50N 080-27-12W	[REDACTED]	SA-2 bn field deployed on [REDACTED]
6	Maribel SA-3 SAM Site East A16-3	22-59-55N 082-44-25W	[REDACTED]		20	Ranchuelo SAM Site A33-2	22-23-50N 080-10-02W	[REDACTED]	
7	Punta Brava SAM Site A30-2	23-01-18N 082-31-35W	[REDACTED]		21	Santa Clara SAM Site A34-2	22-28-59N 079-59-54W	[REDACTED]	SA-2 bn partially field deployed for site renovation on [REDACTED]
Western SAM Brigade Two									
SA-2 Sites									
8	Campo Florido SAM Site A07-2	23-09-17N 082-08-30W	[REDACTED]	Two SA-2 bns, one in travel mode on [REDACTED]	22	Santa Clara SAM Site North	22-33-45N 079-55-30W	[REDACTED]	
9	La Catalina SAM Site A34-2	22-58-18N 082-00-11W	[REDACTED]	FAN SONG F present, two SA-2 bns, one field deployed on [REDACTED]	Central SAM Brigade Two				
10	Tanara SAM Site	23-09-21N 082-14-42W	[REDACTED]		23	Matanzas SAM Site A04-2	23-04-57N 081-33-28W	[REDACTED]	
SA-3 Sites									
11	Guanabo SAM Site A12-3	23-09-24N 082-08-30W	[REDACTED]		24	Matanzas SAM Site A36-2	23-02-58N 081-21-17W	[REDACTED]	
12	Guara SAM Site A29-2	22-48-42N 082-13-40W	[REDACTED]		25	Matanzas SAM Site East 2 A10A-2	23-02-00N 081-28-22W	[REDACTED]	
13	Guira de Melena SAM Site A36-3	22-49-19N 082-20-24W	[REDACTED]		26	Matanzas SAM Site la Congo A18 A02	22-58-50N 081-34-00W	[REDACTED]	
14	La Habana SAM Fort de la Cabana A03-2	23-08-55N 082-20-26W	[REDACTED]		Eastern SAM Brigade				
15	La Habana SAM Site Fontanar A01-3	23-01-37N 082-24-31W	[REDACTED]		27	Holguin SA-2 Site Piedras	20-55-51N 078-13-43W	[REDACTED]	First observed occupied on [REDACTED]
SA-2 Sites									
27	Holguin SA-2 Site Piedras	20-55-51N 078-13-43W	[REDACTED]		28	Holguin SAM Site el Coco	20-51-02N 078-20-55W	[REDACTED]	
28	Holguin SAM Site el Coco	20-51-02N 078-20-55W	[REDACTED]		29	Holguin SAM Site Southeast A14-2	20-48-30N 078-13-07W	[REDACTED]	
29	Holguin SAM Site Southeast A14-2	20-48-30N 078-13-07W	[REDACTED]		30	Holguin SAM Site SSW	20-46-05N 078-17-07W	[REDACTED]	FAN SONG F present on [REDACTED]

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