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PHOTOGRAPHIC INTERPRETATION REPORT

S-8709

COMPARISON OF  
CRUISE-MISSILE LAUNCH SITES  
IN CUBA, CHINA, AND THE USSR

NPIC/R-184/63  
August 1963

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

Declassification review by NIMA/DOD

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INTRODUCTION

Cruise-missile sites discussed in this report are located at or near Banes, Santa Cruz del Norte, and Siguanea Airfield in Cuba; Lien-shan and Port Arthur in China; and Balaklava, Stary Kildin, Karangit, and Nenoksa, in the USSR.

These sites contain highly mobile equipment and employ a missile that is an adaptation of the KENNEL (AS-1) Air-to-Surface Missile (ASM). The basic complement of equipment identified at these coastal sites includes

two mobile launchers, two control and check-out truck vans, two SHEET BEND radars mounted on vans, a tall, truck-mounted probable radar, a probable command post van, missile transporters, missile shipping crates, a truck-mounted crane, generator vans, and tank trucks. Other components such as tracked prime movers and miscellaneous cargo vehicles, though present at these sites, are not peculiar to cruise-missile sites and could be replaced easily with other equipment.

BANES, CUBA

The cruise-missile launch site near Banes (Figure 1) is located at 20-53-50N 75-38-15W (UTM VV 338193 on AMS Series E 723, Sheet 5078 I) on gently sloping terrain with a mean elevation of 250-330 feet above sea level. The site was first identified under construction on photography of [REDACTED]. This facility is considered the best example of a cruise-missile site to date and, as such, contains what is believed to be a full complement of cruise-missile equipment (Figures 2 and 3).

The site is located in an area of sparse vegetation, the height of the trees being about [REDACTED]. Little attempt has been made to utilize this natural growth for overhead concealment; however, almost every operational or support element at the site has been covered with nets or canvas or a combination of the two. Numerous trenches and personnel emplacements are located just inside the outer fence and at least five guard towers are located along the outer fence.

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25X1D

25X1D

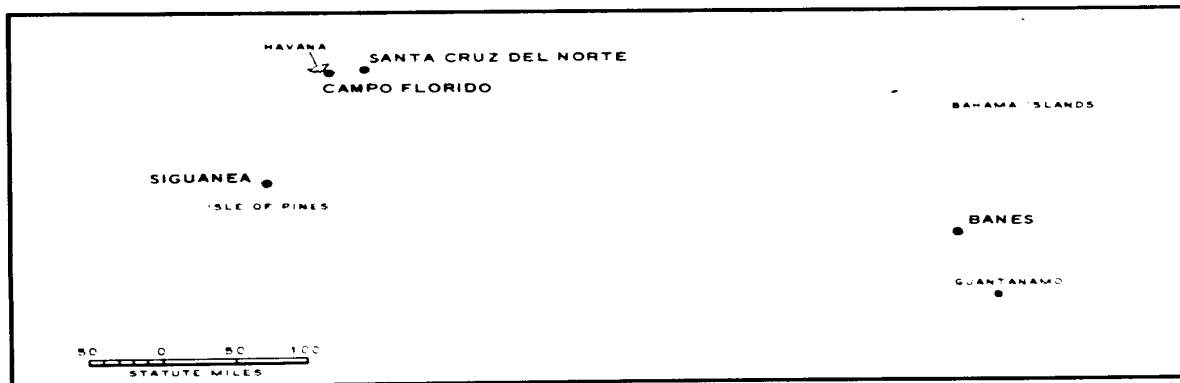


FIGURE 1. LOCATIONS OF CRUISE-MISSILE SITES, CUBA.

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FIGURE 2. CRUISE-MISSILE SITE, BANES CUBA--SECTION

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- 2 -

25X1D

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FIGURE 3. CRUISE-MISSILE SITE, BANES, CUBA--SECTION

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- 3 -

25X1D

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25X1D

An alternate site under construction was identified on photography of [redacted]. It is located 1.1 nautical miles (nm) north-northeast of the original site at 20-59-40N 75-37-50W. The alternate site consists of two launch revetments and eight rectangular revetments. One launch revetment is oriented due east and the other due north. No cruise-missile equipment has been observed at this alternate site to date.

The following description is a compilation of information obtained from both high- and low-altitude photography. (all item numbers keyed to Figure 4).

Two launch revetments (items 1 and 2). The central area of each revetment is nearly circular and measures approximately 50 feet in diameter. Each revetment contains a [redacted] long launcher. The distance between launch rails is [redacted].

25X1D  
25X1D

Two probable control/checkout revetments (items 3 and 4). Each revetment measures 35 by 15 feet and contains a probable control/checkout truck van with the van measuring approximately [redacted].

25X1D

Two radar revetments (items 5 and 6). Each revetment contains a SHEET BEND radar van with an associated SQUARE HEAD IFF antenna.

Two power generator revetments (items 7 and 8). Each revetment measures 20 by 10 feet and contains a power generator for the SHEET BEND radar.

Probable radar revetment (item 9). This revetment measures 35 by 20 feet and contains a probable radar mounted on a mast mounted on a flatbed truck. The probable radar is approximately 30 feet above ground level.

Probable command post revetment (item 10). This revetment measures 45 by 15 feet and contains a van at least [redacted]. The van probably functions as the command control and communications station.

25X1D

Four missile-hold revetments (items 11-14). Each revetment measures approximately 60 by 15 feet. All except item 12 contain missile transporters.

Unidentified revetment (item 15). Contains a truck van with the van measuring approximately [redacted].

25X1D

Two probable utility trailer revetments (items 16 and 17). Each revetment measures about 30 by 10 feet and contains a probable utility trailer.

Six unidentified revetments (items 18-23). One revetment (item 18) measures [redacted] and contains a truck. Another (item 19) measures approximately [redacted] and is unoccupied. The third (item 20) measures 30 by 10 feet and contains a truck. The fourth revetment (item 21) measures 25 by 10 feet and is unoccupied. The fifth revetment (item 22) measures 75 by 15 feet and is unoccupied. The sixth revetment (item 23) measures 100 by 15 feet and is unoccupied.

25X1D  
25X1D  
25X1D

Revetment (item 24). Measures 60 by 15 feet, unoccupied, possibly used as a missile-hold revetment.

Crane revetment (item 25). This revetment measures 100 by 50 feet and contains two truck-mounted cranes.

Missile transporters (item 26). Eight canvas-covered missile transporters are located throughout the site. The tractor is a ZIL 157V and the canvas-covered portion of the transporter measures [redacted].

25X1D

Missile shipping crates (item 27). The eight missile shipping crates measure [redacted] with a height of about [redacted].

25X1D  
25X1D

Motor pool (item 28). The motor pool contains eight AT-S tracked prime movers, two bulldozers, two van-type cargo trucks, one GAZ-69, two trailers, five unidentified trucks and two unidentified vehicles.

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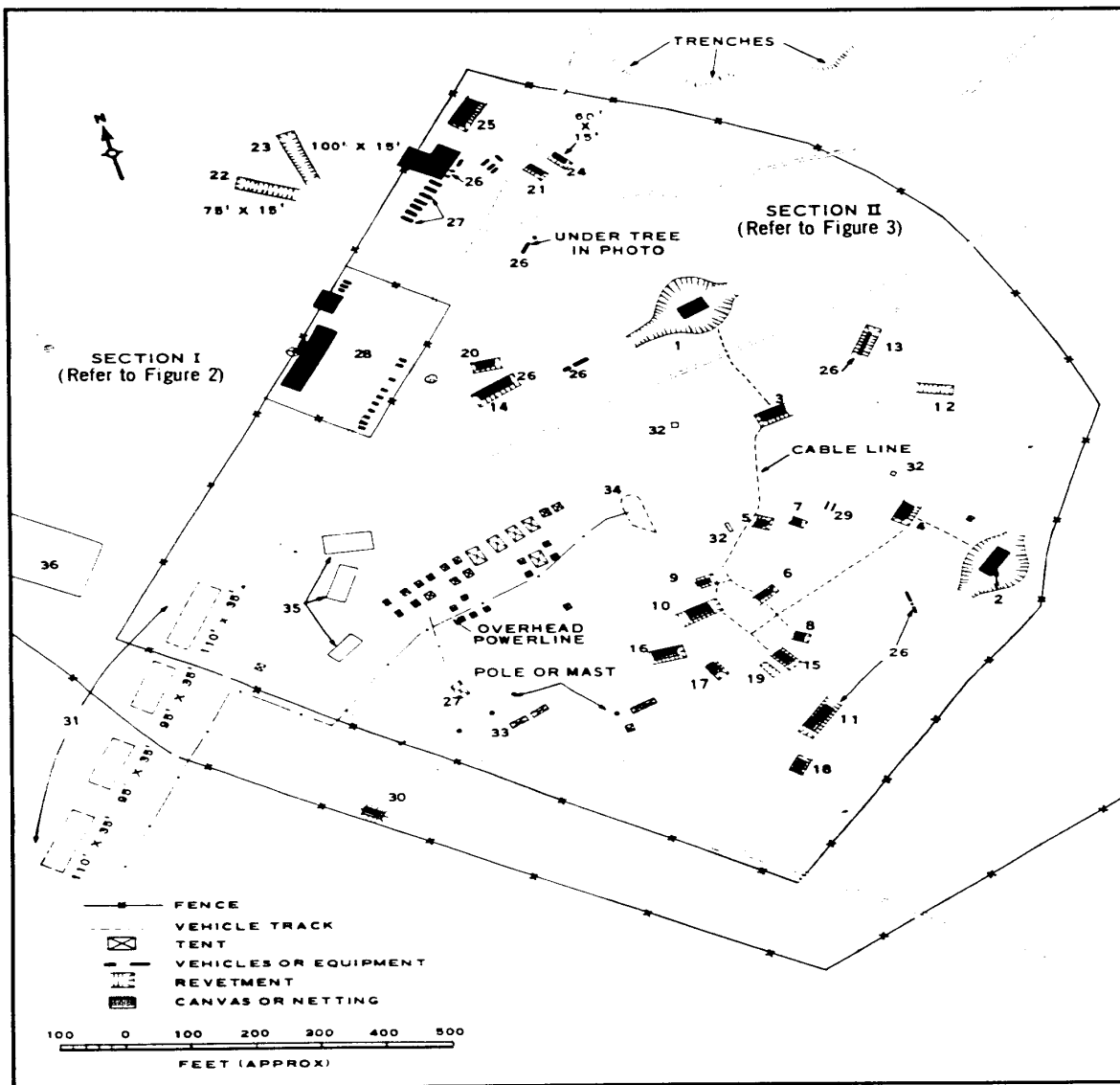


FIGURE 4. LAYOUT OF FACILITIES AT BANES CRUISE-MISSILE SITE.

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25X1D

Two trailer vans (item 29). Measuring [REDACTED]

25X1D

[REDACTED] Probable explosives storage (item 30). This gable-roofed buried structure measures 30 by 15 feet and probably is used for the storage of explosives.

Buildings (item 31). There are four single-story, gable-roofed, barracks-type buildings under construction. The buildings are composed of prefabricated sections. Two of these buildings measure 110 by 35 feet and the other two measure 95 by 35 feet.

Personnel shelters (item 32). Five personnel shelters or bunker entrances were observed.

Kitchen and mess tent area (item 33).

Laundry and shower area (item 34).

Two volleyball and one basketball court (item 35).

Soccer field (item 36).

Other equipment identified throughout this site includes five tents measuring [REDACTED] and 25 tents measuring [REDACTED].

At least ten single cots were observed alongside one of the large tents. The tents probably will be removed as the barracks are completed. In addition to the above equipment, two tank trucks, five cargo trucks (two van and three open-bed type), two GAZ-69's, one cargo trailer and one unidentified vehicle were observed at the site.

25X1D

25X1D

SANTA CRUZ DEL NORTE, CUBA

An operational cruise-missile launch site similar to the one near Banes, Cuba, is located at 23-09-00N 81-56-20W (UTM 17QMR 039603 on AMS Series E 723, Sheet 3885 III), 1.1 nm southwest of Santa Cruz del Norte and .7 nm south of the coast (Figure 1). The site--oriented north toward the ocean--is situated on a hill which has a mean elevation of 225 feet. Cruise-missile equipment was first observed at this site on high-altitude photography of [REDACTED]

25X1D

25X1D

The complement of operational equipment is basically the same as that at the Banes site (Figure 4). Specifically, the site near Santa Cruz del Norte contains two reverted launchers with their respective probable control revetments, eight camouflaged probable missile transporters, two SHEET BEND radars with their associated SQUARE HEAD antennas, an unidentified probable radar mounted on a tall mast, missile crates, numerous buildings, a tent camp, a motor pool, and two open storage areas.

A cruise missile positioned on a probable dolly was identified at this site on high-altitude

photography of [REDACTED]. Cruise missiles have also been identified at Banes and the cruise-missile launch site near Campo Florido on high-altitude photography. In dimensions and configuration, these missiles are compatible with the modified KENNEL ASM observed in a parade in Havana on [REDACTED] (Figure 5). The cruise missiles identified in Cuba on high-altitude photography may be modified KENNEL ASMs which have been adapted to a surface-to-surface capability. The KENNEL measures approximately [REDACTED] in length and has a wing span of 15 feet. The fuselage is tapered and measures approximately [REDACTED] in diameter.

25X1D

25X1D

25X1D

25X1D

The cruise-missile launch site near Santa Cruz del Norte is depicted in Figures 6 and 7. A textual description of significant features of the site follows (item numbers are keyed to Figure 7).

Two launch revetments (items 1 and 2). Each revetment measures approximately 55 by 45 feet and is occupied by a canvas-covered mobile launcher oriented on an azimuth of 355-360 degrees. The launchers are approximately

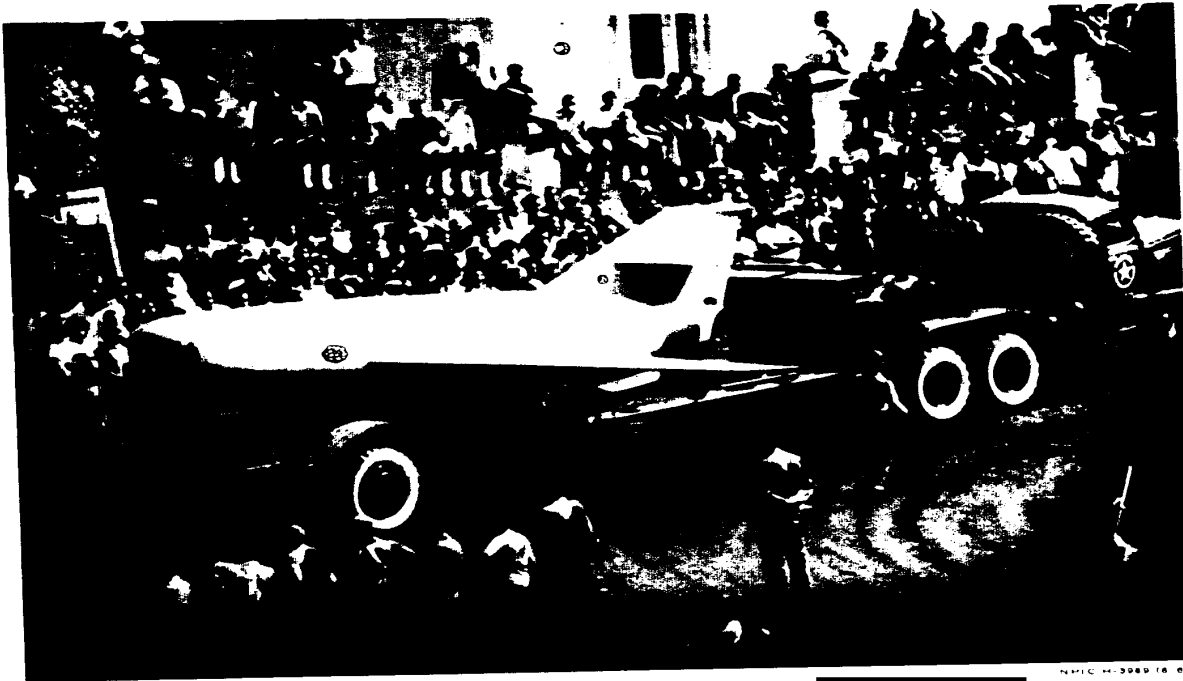


FIGURE 5. MODIFIED KENNEL MISSILE IN HAVANA PARADE [REDACTED]

25X1D

25X1D

[REDACTED] long and have outriggers at about the midpoint on each side. The degree to which the launchers are capable of being elevated is not known.

25X1B

25X1B

25X1D

[REDACTED] The distance between the launch rails is from [REDACTED] Alignment chocks for mating the launcher to a transporter are located to the rear of the launcher. The launch revetments are separated center-to-center by a distance of 275 feet.

Two probable control revetments (items 3 and 4). These revetments are canvas covered and each contains a probable control van. One revetment (item 3) measures 60 by 15 feet. It is located 225 feet east-southeast of the

east launcher and is connected by cable to the east launch revetment. The second revetment (item 4) measures approximately 50 by 15 feet. It is located 215 feet southwest of the west launcher and is connected by cable to the west launch revetment.

Two SHEET BEND radars (items 5 and 6). One SHEET BEND radar (item 5) is canvas covered. It is connected by cable to the two launch revetments (items 1 and 2), the two probable control revetments (items 3 and 4), and three other revetments (items 8, 10, and 12). The second SHEET BEND radar (item 6) also is canvas covered. It is located north of a probable generator revetment (item 9). This type of radar (Figure 8) has been identified at

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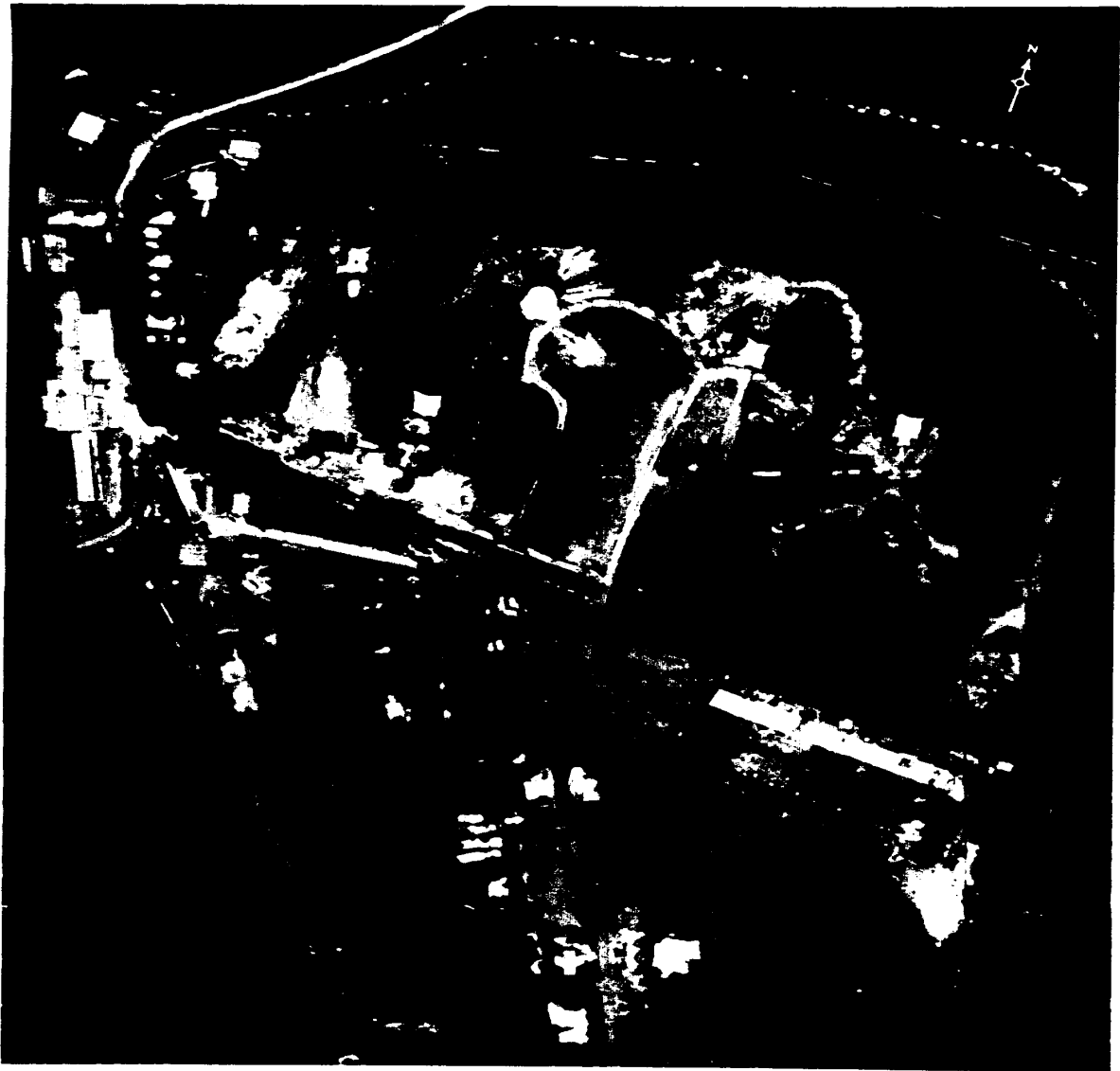


FIGURE 6. CRUISE-MISSILE LAUNCH SITE NEAR SANTA CRUZ DEL NORTE, CUBA

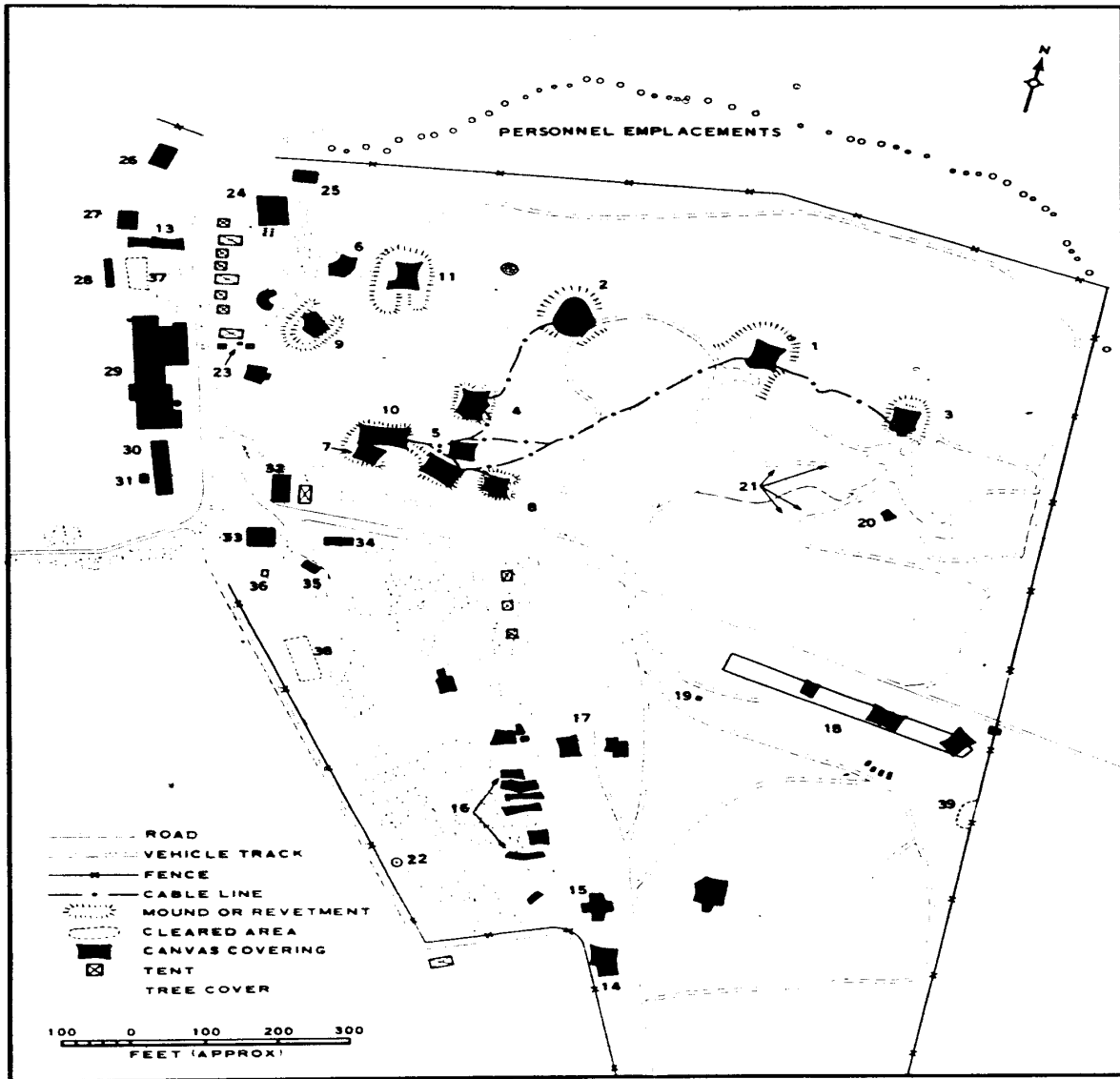


FIGURE 7. LAYOUT OF FACILITIES AT SANTA CRUZ DEL NORTE LAUNCH SITE.

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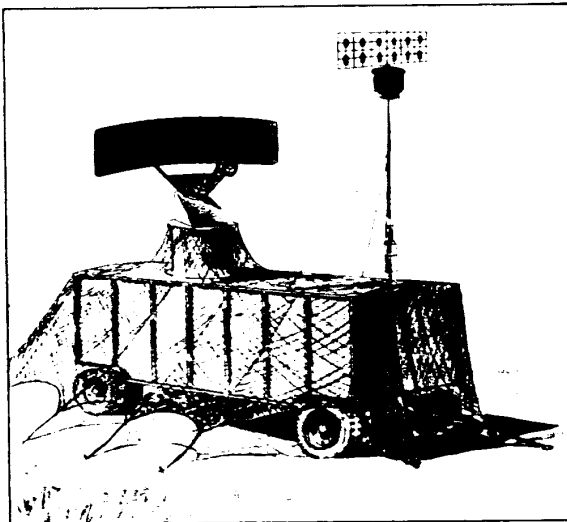


FIGURE 8. SKETCH OF SHEET BEND RADAR WITH ASSOCIATED SQUARE HEAD ANTENNA.

three other cruise-missile sites in Cuba and at a radar school near Mariel, Cuba. It is mounted near the rear of a box-body trailer which measures approximately [REDACTED]. The reflector--a truncated paraboloid measuring approximately [REDACTED]--is mounted on a pedestal and is hinged so that it can be angled downward to a stowed or transport position. Power is supplied from below by means of a feed arm. Mounted on the front end of the trailer is a SQUARE HEAD IFF interrogator which measures approximately [REDACTED] and the mast appears to telescope.

Probable radar revetment (item 7). This revetment is canvas covered and measures approximately 45 by 15 feet. It is occupied by a tall, unidentified probable radar. The revetment is located on the south edge of another revetment (item 10) containing an unidentified piece of equipment.

Two probable generator revetments (items 8 and 9). One revetment (item 8) is canvas covered and measures approximately 30 by 10 feet. It is located southeast of one SHEET BEND radar (item 5). This revetment is occupied by a probable power generator. The second revetment (item 9) is partially canvas covered and measures approximately 60 by 15 feet. It is located southwest of a probable missile-hold revetment (item 11), and is occupied by a probable power generator similar to the one at the first probable generator revetment (item 8). This generator is used in support of the second SHEET BEND radar (item 6).

Possible generator revetment (item 10). This revetment is canvas covered and measures approximately 60 by 15 feet. It is connected by cable to the two launch revetments (items 1 and 2), one of the two probable control revetments (item 4) and probably the other (item 3), one of the SHEET BEND radars (item 5), one of the probable generator revetments (item 8), and an unidentified revetment (item 12). The possible generator revetment is occupied by an unidentified piece of equipment measuring approximately [REDACTED]. The cable leads to this revetment and its location within the site are similar to corresponding features of the possible power generator at the cruise-missile site near Banés.

Probable missile-hold revetment (item 11). This revetment is canvas covered and measures approximately 80 by 15 feet. It is located 225 feet west of the west launch revetment (item 2). The revetment is probably occupied and may function as a hold position for missiles. However, the exact function of the revetted equipment is undetermined.

Unidentified revetment (item 12). This revetment is canvas covered and measures approximately 40 by 10 feet. It is located just south of one SHEET BEND radar (item 5). It is

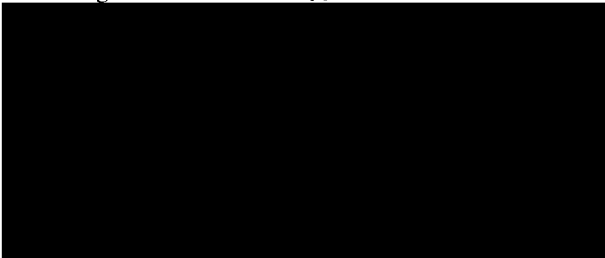
25X1D  
25X1D

25X1D  
25X1D

25X1D

connected by cable to the two launch revetments (items 1 and 2), the two probable control revetments (items 3 and 4), one probable generator revetment (item 8), and the possible generator revetment (item 10). The revetment is probably occupied; however, the exact function of the revetted equipment is undetermined.

Missile shipping crates (item 13). These two shipping crates are canvas covered and measure [redacted]. They stand about [redacted] high and have flat roofs with beveled edges. One end of the crates has a boxlike appendage of undetermined use. The other end has a door which provides access to the missile. The crates appear to be constructed of wood. A unitized type of construction with external bracing for additional support has been employed



Open storage area (item 14). On earlier coverage, this open storage area contained six canvas-covered missile shipping crates (item 13) and unidentified supplies. Two more shipping crates were added in [redacted]. There are ten shipping crates in all at the site.

Tent (item 15). This cross-shaped tent, 45 by 40 feet, probably functions as a checkout facility for missiles. A cruise missile on a probable dolly was identified near this tent in [redacted]

Probable missile transporters (item 16). Eight probable missile transporters are located in a heavily wooded area under canvas stretched between trees. An uncovered transporter of this type was displayed in the [redacted] Havana

parade (Figure 5). With this exception, the transporters have all been canvas covered on available photography. They measure [redacted] overall, with the canvas-covered portion--the trailer--measuring [redacted]. The trailer is a low-boy type. The missile rides on a double-rail carriage hinged to the trailer just off the trailing edges of the missile wings. The rails mate with the two corresponding rails on the launcher. The tractor is a ZIL-157V.

Unidentified objects (item 17). The two unidentified objects are canvas covered.

Motor pool (item 18). The motor pool contains two bulldozers, two generator trailers, and four canvas-covered pieces of equipment.

Guard post (item 19). The guard post--a single-story structure--measures 5 by 5 feet and has a traffic control gate.

Two AT-S (item 20). These tracked prime movers are probably used to pull the trailer vans.

Unidentified canvas-covered equipment (item 21).

Microwave tower (item 22). The orientation of the twin dishes is undetermined.

Communications facility (item 23). The facility consists of one stick mast with an associated canvas-covered van.

Unidentified revetment (item 24). This revetment is canvas covered and measures approximately 40 by 10 feet. It is located west-northwest of the west launch revetment (item 2). The revetment is probably occupied; however, the exact function of the revetted equipment is undetermined.

Buildings (items 25-36). With the exception of one building which is still under construction (item 36), the following buildings predate the missile installation but appear to be integral parts of its support facilities. The buildings--all single story--have either flat or gabled roofs. One (item 29) has an irregular configuration.

25X1D  
25X1D

25X1D  
25X1D  
25X1D

25X1B

25X1D

25X1D  
25X1D

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Item	Roof Configuration	Dimensions (ft)
25	Gable	35 x 25
26	Flat	40 x 30
27	Gable	35 x 25
28	Gable	55 x 10
29	Gable	200 x 70
30	Gable	100 x 20
31	Gable	15 x 10
32	Gable	50 x 25
33	Gable	40 x 35
34	Flat	40 x 20
35	Flat	20 x 10
36	U/C	20 x 10

Two volleyball courts (items 37 and 38).  
Open storage area (item 39). This open storage area contains at least 40 probable 55-gallon drums.

Other equipment observed at the site at various times includes five large tents measuring approximately 30 by 20 feet each, 15 smaller tents ranging in size from 20 by 20 [redacted] two trucks, one tank truck, one mobile crane, and more than 40 personnel emplacements.

25X1D

**SIGUANEA, CUBA**

The Siguanea Cruise-Missile Site (Figure 1) is located at 21-37-45N 82-58-20W (UTM 17 QKP959922 on AMS 3681 III) on the south coast of the Isle of Pines. Siguanea Airfield and an SA-2 SAM site are located, respectively, 1.1 nm northeast and .6 nm east of the cruise-missile site.

Unlike the site near Santa Cruz del Norte, which is located in an area of dense vegetation, the Siguanea site (Figure 10) has little or no natural cover. Nevertheless the equipment at the site has been heavily concealed with canvas and natural materials.

The launchers, radars and launch control equipment have been positioned on a prominent knoll with an elevation of about 130 feet. The missile-hold revetments, missile crates, and checkout tent are located on a small plateau situated between this knoll and a higher hillock to the rear which rises to a height of over 200 feet.

A SHEET BEND radar has been identified on top of this hill, but no cable connection with the launch area is visible.

The launchers are revetted and [redacted] excavations have been dug in the small rise just north of the launchers. The radars and control equipment have been placed in the excavations and have been canvas covered.

25X1B

Defensive measures near the site consist of personnel emplacements around the periphery of the site and approximately .7 miles of beach defenses, consisting of two obstacles. The first of these obstacles is a tetrahedron, probably interlaced with wire and located near the water's edge or awash. The second is wire fence fronting the beach and located approximately 170 feet from the water.

A description of significant features of the site follows (item numbers keyed to Figure 11).

Two launch revetments (items 1 and 2). Each revetment is occupied by a mobile launcher; the launchers are separated by a distance of about 250 feet. The launcher to the south is oriented at approximately [redacted] while the other is oriented at approximately [redacted]. The orientation of the launchers is divergent in the general downrange direction. At Banes they converge and at Santa Cruz they are parallel.

25X1D  
25X1D

Two probable control/checkout emplacements (items 3 and 4). The precise location of the two probable control/checkout vans was not identified; however, cable traces, size and position of these emplacements indicate that these items are the most logical candidates.

Two radar emplacements (items 5 and 6). Each emplacement contains a SHEET BEND





FIGURE 10. CRUISE-MISSILE LAUNCH SITE, SIGUANEA, CUBA

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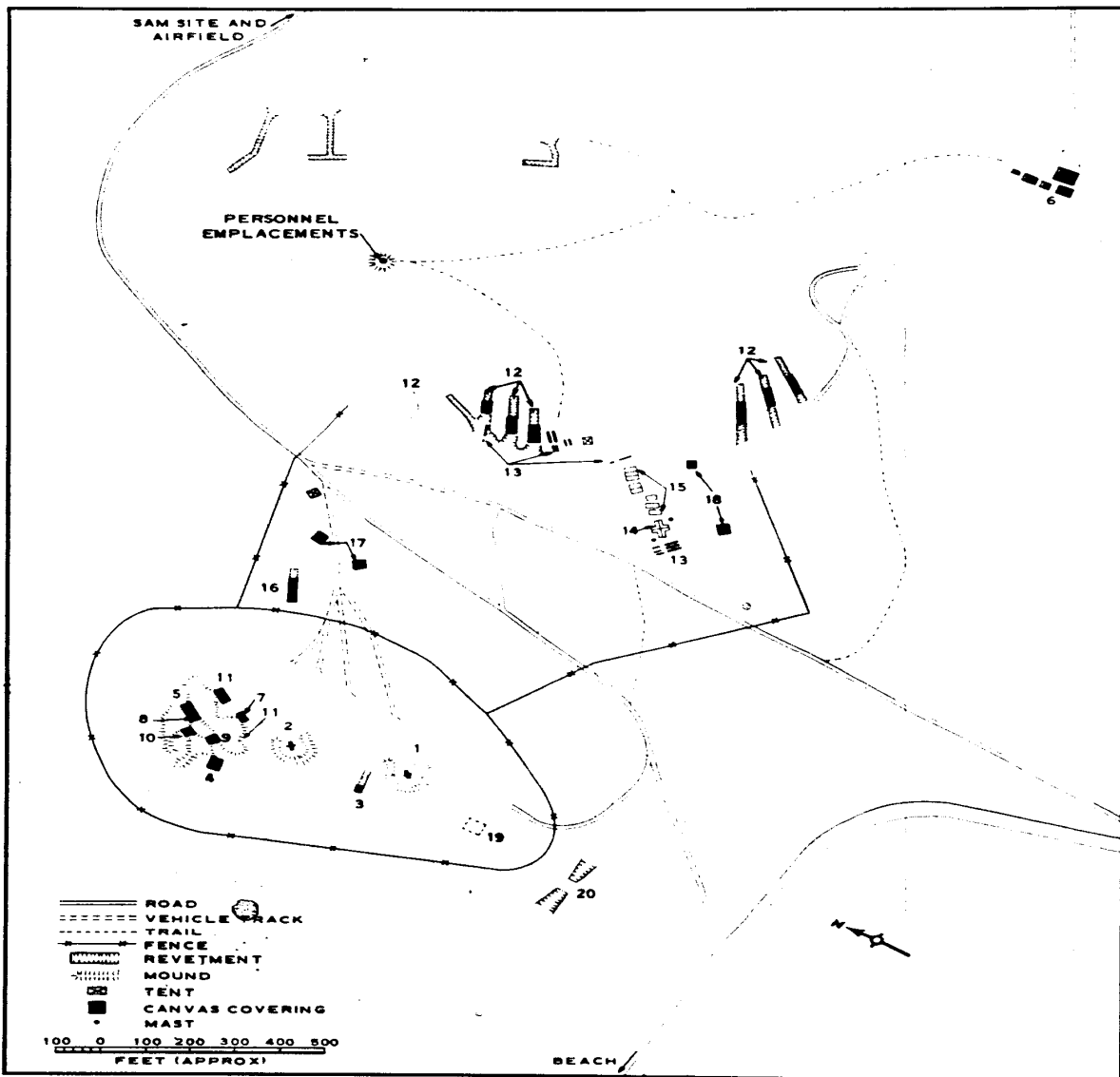


FIGURE 11. LAYOUT OF FACILITIES AT SIGUANEA LAUNCH SITE.

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radar with an associated SQUARE HEAD IFF antenna on the opposite end. No cable traces could be located between the radar emplacements and the operational area.

Two power generators (item 7). Two canvas-covered generator trailers are located in a drive-through excavation.

Probable radar (item 8). This canvas-shrouded probable radar is identical to those located at the Banes, Santa Cruz del Norte, and Campo Florido sites.

Probable command-post emplacement (item 9). Although the exact size and configuration of this item cannot be determined, it is located in a logical position to serve as the probable command-post and is similar to those at Banes and Santa Cruz del Norte.

Unidentified emplacement (item 10). This emplacement contains an unidentified, canvas-covered, arch-roofed truck van, the function of which is undetermined.

Drive-through bunker (item 11). This bunker measures roughly 40 feet long and 10 feet wide and is estimated to have an inside height of about 10 feet. The occupancy of this bunker is undetermined.

Missile-hold revetments (item 12). The six and possibly seven missile-hold revetments vary in length, width and depth. Each is sufficiently large to hold a missile trailer and prime mover. The "possible" hold revetment, which is farthest to the north,

Six of the seven revetments are canvas covered.

Missile transporters (item 13). At least eight missile transporters have been identified at this site.

Missile checkout tent (item 14). This missile checkout tent is identical to the one at Santa Cruz del Norte. It measures 45 by 40 feet and is plus-shaped. Near the tent are two stick masts which measure 25-30 feet tall.

Missile crates (item 15). At least eight missile crates have been identified at this site.

Revetment (item 16). This revetment is sufficiently large to hold a missile transporter, although it would be difficult to negotiate the angular approach because of the surrounding terrain.

Vehicle revetments (item 17). The two revetments are dug into the side of the hill and each is canvas covered. A tank truck was identified in the one to the south on low-altitude coverage and occupancy was undetermined on the other because of canvas cover.

Miscellaneous equipment (items 18-20). Also located within the site are two canvas-covered objects (item 18), a building foundation which predates the site (item 19), and a small drive-through bunker (item 20) which also predates the site.

This site is conspicuous by the absence of living quarters, either permanent or temporary, and also by the lack of associated vehicles. Other than those vehicles previously mentioned, only one mobile crane, one tank truck and three other trucks have been observed in the site at one time. Living quarters and motor pool facilities are undoubtedly provided at the complex of buildings adjacent to the SAM site.

25X1B  
25X1B  
25X1B

LIEN-SHAN, CHINA

The cruise-missile launch site near Lien-shan (Figure 12) is located at 40-41-30N 120-55-10E (UTM UF 241062 on USATM 0289-24/3 MA,

1st ed, Jun 61) approximately 3.7 nm southeast of Lien-shan on the slope of a hill overlooking the Gulf of Liaotung.

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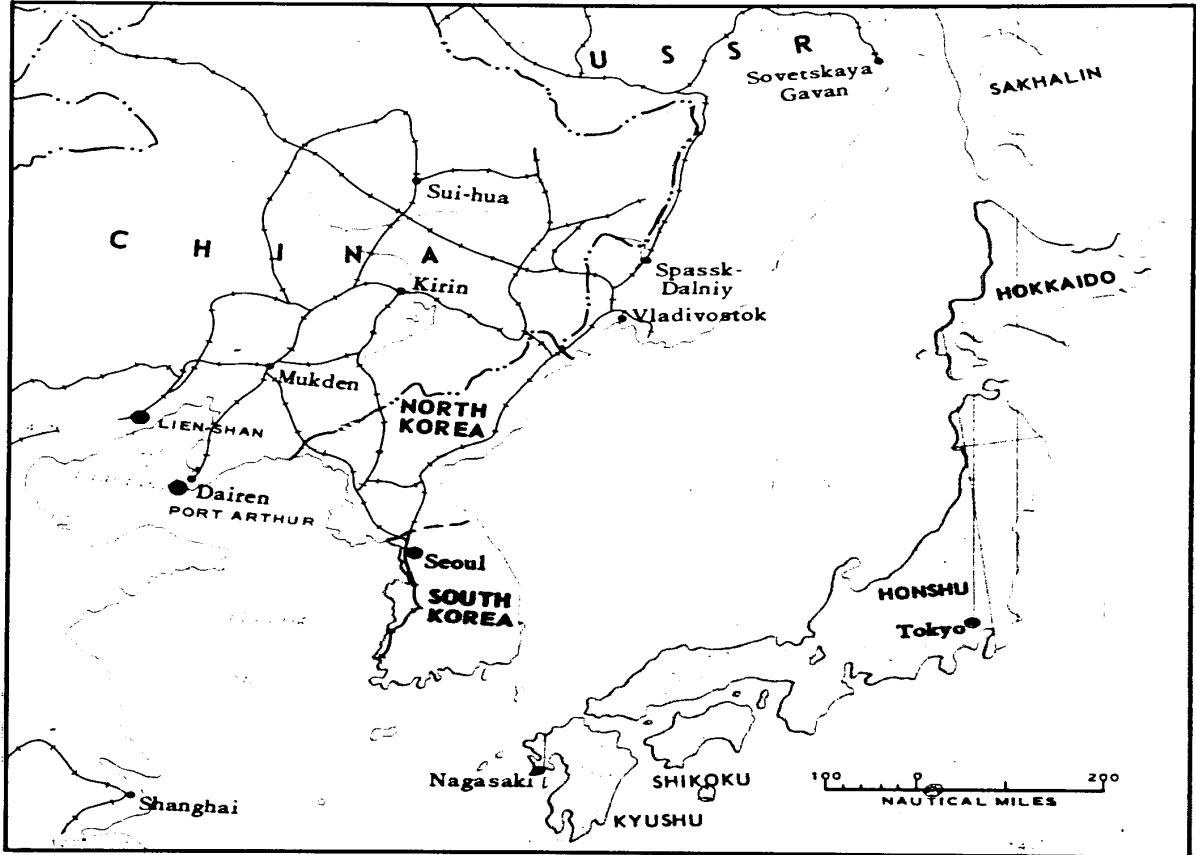


FIGURE 12. LOCATIONS OF CRUISE-MISSILE SITES, CHINA.

25X1D  
25X1D  
25X1D  
25X1D

Since [redacted] the site has been covered by KEYHOLE Mission [redacted] and [redacted] respectively. This site, which was the first identified in China, has extensive housing and support facilities located nearby, indicating that this installation may also serve as a research and development and/or training facility.

The following description is a compilation of information obtained from KEYHOLE [redacted] (all items are shown on Figures 13 and 14).

25X1D  
25X1D

Launch position A. This position consists of a circular pad with a diameter of 75 feet. Located in the center of the pad is an inclined launcher approximately [redacted] long and oriented on an azimuth of approximately 105 degrees.

25X1D

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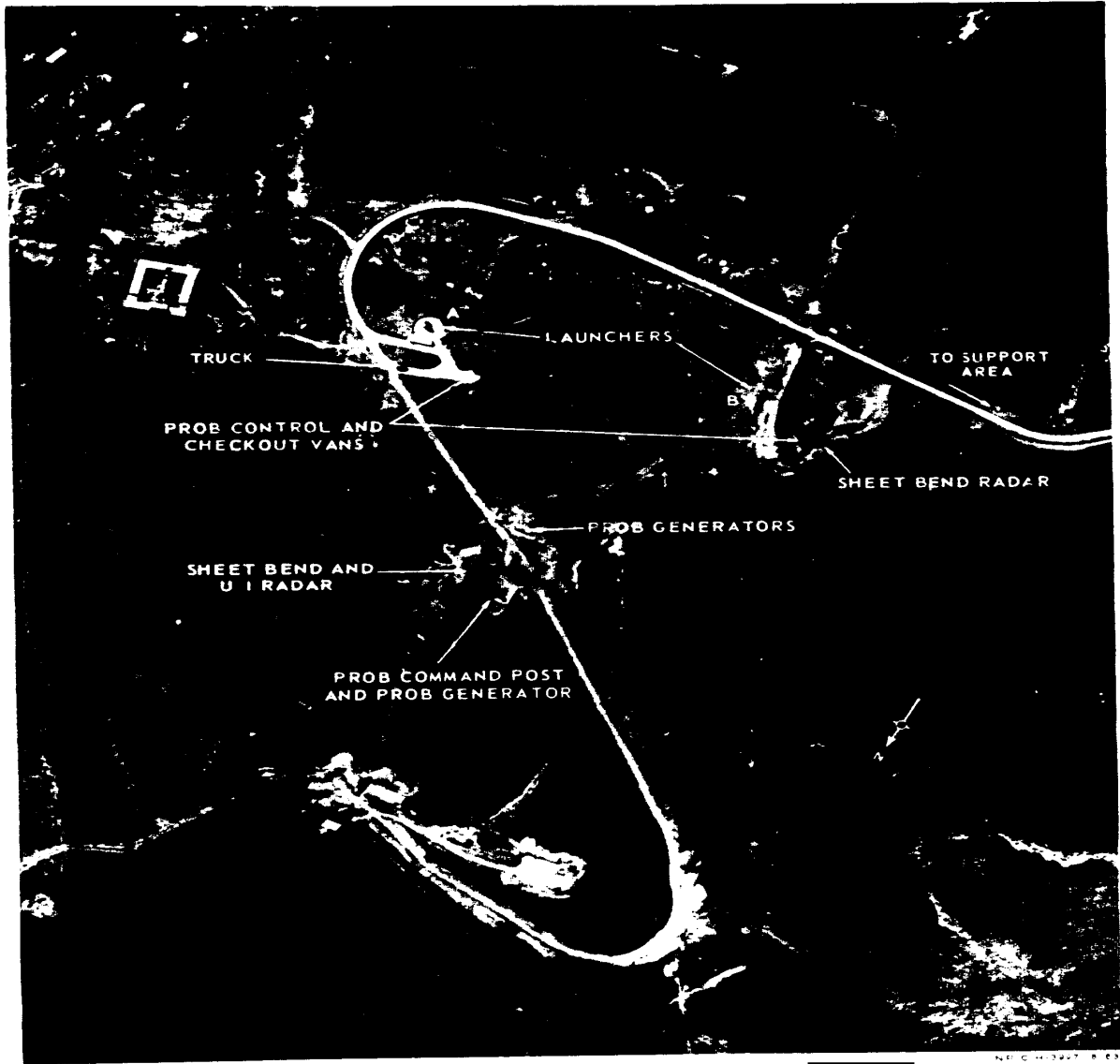


FIGURE 13. LAUNCH AREA AT LIEN-SHAN CRUISE-MISSILE SITE

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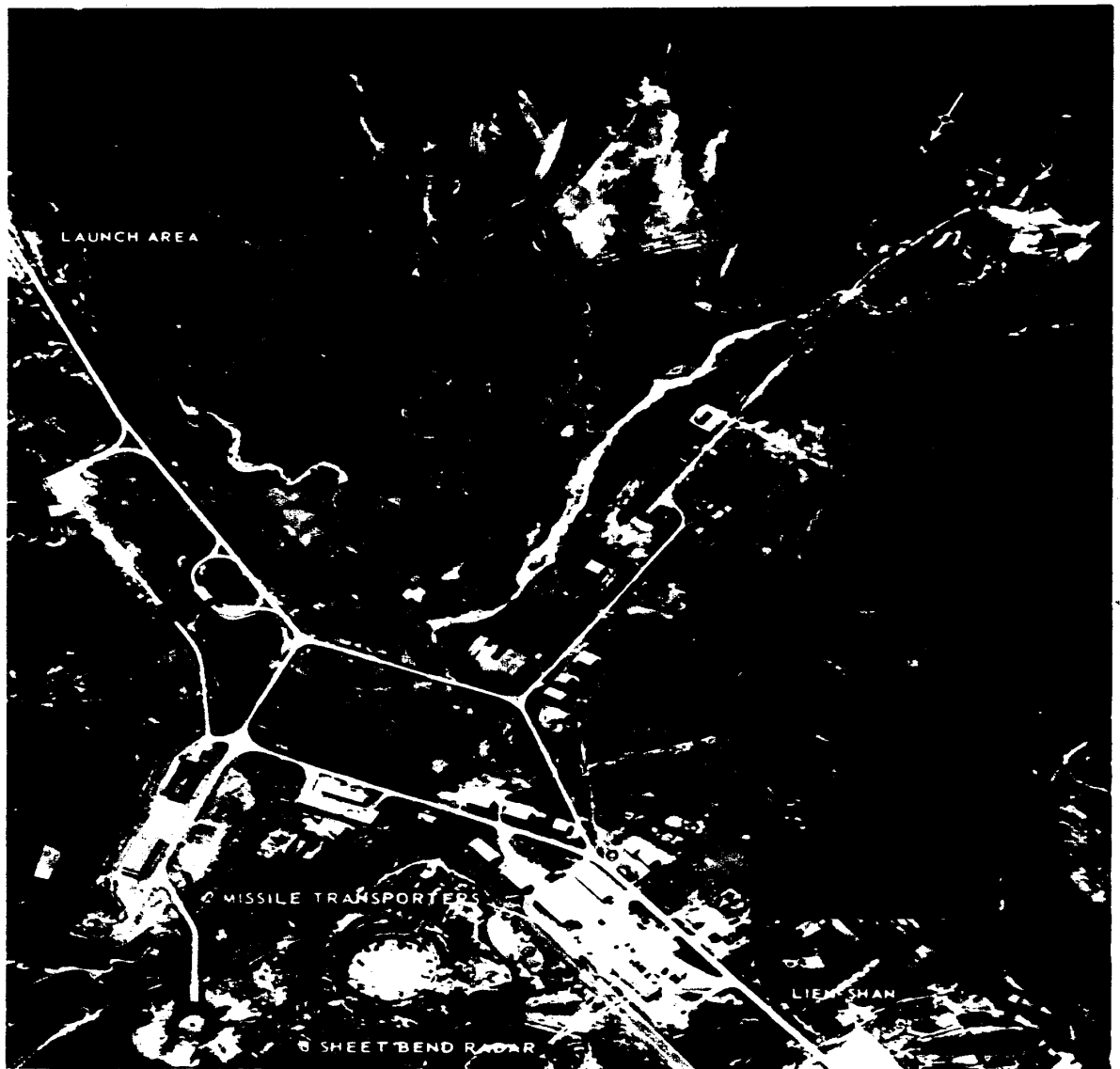


FIGURE 14. SUPPORT FACILITY AT LIEN-SHAN CRUISE-MISSILE SITE

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25X1D Launch position B. This position is located 800 feet southwest of the first position. The inclined launcher, also approximately [redacted] long, is located on the east side of a dirt loop road and is oriented on an azimuth of approximately 145 degrees.

25X1D Two probable control/checkout vans. These probable truck vans are connected by cable with the launch position and radars. The van is approximately [redacted].

Two radars. Two SHEET BEND radars, one located on the west side of the loop road separating it from launch position B, while the second is located approximately 550 feet northwest of first launch position A. Both radars are connected by cable to the launchers.

Probable radar. This tall mast unidentified radar is located adjacent to one of the SHEET BEND radars.

Probable power generators. These three generators probably service the SHEET BEND radars and the command post van.

Probable command post van. This van measures approximately [redacted] and probably functions as the command control and communications station.

25X1D Unidentified revetment. This revetment measures approximately 30 by 15 feet and contains an unidentified piece of equipment.

For additional information on this site see NPIC/R-147/62, October 1962

PORT ARTHUR (LU-SHUN), CHINA

The cruise-missile launch site near Port Arthur (Figure 12) is located at 38-49N 121-27E (UTM UC 663976 on USATM 50381-9/8 MA, 1st ed, Jun 61) 9.5 nm east of Port Arthur on a hill overlooking Korea Bay.

25X1D The site (Figure 15) has been covered by [redacted]. No launching equipment or radar has been identified on either date photography and little or no activity has been observed in this nine-month period. A brief description of facilities follows (all item numbers keyed to Figure 16).

25X1D Launch positions (items 1 and 2). Each position measures approximately 50 feet in diameter, with a semicircular wall or revetment located on the seaward side. The positions are unoccupied; however, in the center of each position are four anchor points arranged in a square measuring [redacted] on the side and [redacted] feet across the diagonal. These points are

probably used for anchoring the launcher. Located to the rear of each launch position is a small revetment which could easily accommodate the associated control/checkout vans found at other cruise-missile sites.

Revetments (items 3, 4, 5 and 6). Four revetments are located approximately 550 feet to the rear of the launch positions. One of these (item 4) is long and narrow and has a covering near the midpoint. This is the most logical location for the SHEET BEND radars. The other revetments could easily accommodate the associated tall unidentified radar and generators.

25X1B

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FIGURE 15. CRUISE-MISSILE LAUNCH SITE, PORT ARTHUR, CHINA

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25X1D

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BALAKLAVA, USSR

The cruise-missile launch site near Balaklava (Figure 17) is located at 44-30-30N 33-32-00E (WQ 424285 on USATM 0250-25/5 MA, 1st ed, Dec 61), 3 nm west of Balaklava and 5 nm south of Sevastopol. The site is situated behind a steep cliff on the south coast of the Crimean Peninsula overlooking the Black Sea at an elevation of approximately 800 feet above mean sea level.

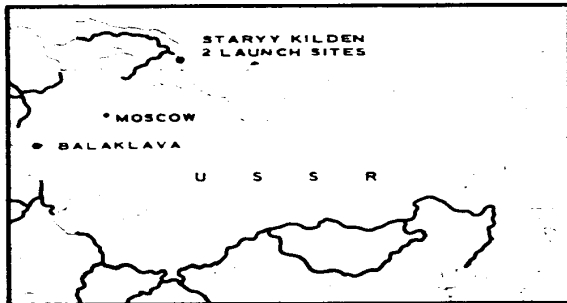


FIGURE 17. LOCATIONS OF CRUISE-MISSILE SITES, USSR.

The site was first observed on TALENT [redacted] and subsequently covered by TALENT [redacted] (Figure 18). The most significant development in this [redacted] interval was the construction of additional drive-through missile checkout buildings. Earlier detailed analysis of the TALENT photography concluded that the installation was missile re-

lated. KEYHOLE missions since [redacted] show no significant change in the facility.

The following description is a compilation of information obtained from both TALENT and KEYHOLE photography. (All item numbers are keyed to Figure 19.)

Launch positions (items 1 and 2). Two elliptical concrete launch pads 140 by 105 feet, spaced 200 feet on centers.

Probable control bunker (item 3). A probable control bunker is situated 100 feet northeast of a point located midway between the two launch pads.

Probable radar bunkers (items 4 and 5). Two probable radar bunkers located 500 and 650 feet northeast of a point located midway between the two launch pads.

Checkout building (item 6). Wall-enclosed, drive-through checkout building, [redacted] with a [redacted]

Checkout building (item 7). Drive-through checkout building, 170 by 30 feet.

Storage and assembly area (item 8). Contains two large buildings, 200 by 45 feet, and six smaller buildings.

Secured areas (item 9). Two secured areas probably used for POL storage.

Drive-through buildings (items 10, 11 and 12). Three drive-through buildings, two 90 by 30 feet (items 10 and 11) and one 75 by 30 feet (item 12).

25X1D

25X1D

25X1D

25X1D  
25X1D  
25X1D

25X1D

STARYY KILDIN, USSR

The Staryy Kildin Cruise-Missile Sites (Figure 17) are located at 69-22-02N 34-04-50E and 69-22-03N 34-12-48E, on the north side of Kildin Island, and are separated by a distance of 3.2 nm. Other facilities on the island include the Kildin Airfield and an SA-2 site.

These two sites were observed under construction on [redacted]

(Figures 20 and 21). Since then the only usable photo coverage of the site is KEYHOLE photography of [redacted]

It appears that this system may be different from the system identified in Cuba and China. Several basic differences in the physical plant are evident:

25X1D

25X1D



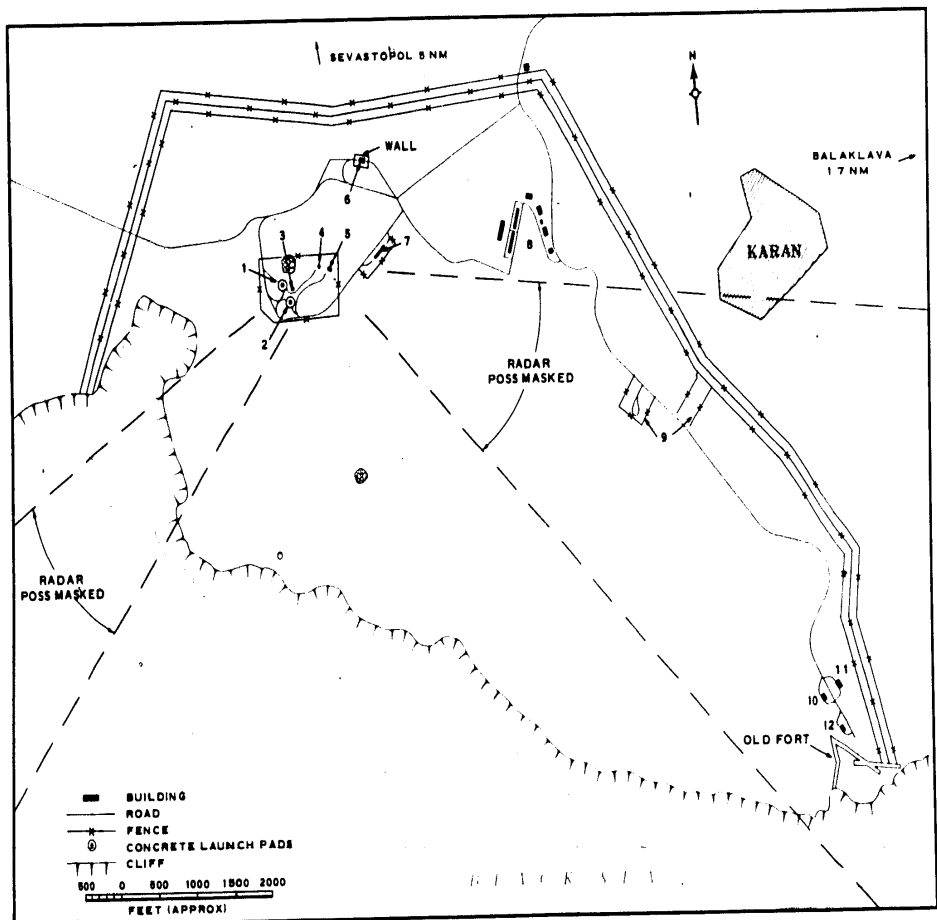
25X1D

FIGURE 18. CRUISE-MISSILE LAUNCH SITE, BALAKLAVA

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FIGURE 19. LAYOUT OF FACILITIES AT BALAKLAVA LAUNCH SITE.

1. The visible portion of the launchers at these sites exceeds the length of the launchers used for the modified KENNEL missile.

2. The launcher protrudes from an emplacement with a retaining wall located aft of the launcher and it appears that the missile would have to be lowered onto the launcher; at the sites in Cuba and China the launchers are end-loaded from a missile transporter.

3. At Launch Site 2, there are ten buildings located approximately 3,000 feet downrange and positioned between the azimuths of the two launchers. At no other cruise-missile site has this occurred.

LAUNCH SITE 1

Launch emplacements (items 1 and 2). (All items are keyed to Figure 20.) Two launch emplacements possibly bunkered; the east position measures [redacted] and contains a probable launcher. Both launch emplacements are oriented on an azimuth of 350 degrees.

Possible checkout/support buildings (items 3 and 4). These buildings located to the rear of the west launch emplacement measure [redacted] and may be used for missile checkout.

Support area (item 5). A support area containing 12 buildings is located approximately 4,400 feet south-southeast of the site. These buildings range in size from 15 by 15 feet to 115 by 25 feet. No radar, control, generator, or command post revetments were observed; however, because of construction status at the time of the TALENT photography it is possible that the facilities have been added since then and are not observable on the small-scale KEYHOLE photography.

LAUNCH SITE 2

Launch emplacements (items 1 and 2). (All item numbers are keyed to Figure 21). Two launch emplacements measure 130 by 90 and

125 by 75 feet, possibly bunkered; each contains a launcher measuring approximately [redacted]. The aft ends of the launchers are in deep shadows which preclude reliable measurement. Both launchers are oriented on an azimuth of 10 degrees and are separated by a distance of 1,560 feet. Located at the rear of each launcher is a retaining wall measuring 55 by 10 feet, the top of which appears to be at ground level. Because of the position of the retaining wall and the termination of the access road at this wall it would appear that the missile would have to be lowered onto the launcher. A drainage ditch 10 feet wide extends east from the east launcher for a distance of 210 feet.

Possible control bunkers or revetments (items 3 and 4). These possible control bunkers or revetments are located approximately 270 feet to the rear of the launch revetments.

Possible checkout/support buildings (items 5 and 6). These buildings located to the rear of the launch and possible control revetments measure 110 by 35 and 90 by 30 feet and may be used for missile checkout. A ditch extends from the northeast corner of item 6 and cuts across the road, where it terminates in a small excavation.

Possible acquisition radar (item 7). This possible radar is located downrange from the launch revetments [redacted]

No generator, command post, or missile hold revetments were identified; however, because of the construction status at the time of the TALENT photography, it is conceivable that these facilities have been added since then and are not observable on the small-scale KEYHOLE photography.

25X1D

25X1D

25X1D

25X1D

25X1B

25X1B

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FIGURE 20. CRUISE-MISSILE LAUNCH SITE, STARYY KILDIN-SITE

25X1D



25X1D

FIGURE 21. CRUISE-MISSILE LAUNCH SITE, STARYY KILDIN-SITE

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**KARANGIT AND NENOKSA, USSR**

Reanalysis of the previously identified possible cruise-missile site at Karangit reveals that it cannot be confirmed as cruise-missile site or research and development testing facility and is hereby negated. The exact function of this

installation is undetermined.

Recent photographic coverage of Nenoksa reveals additional details peculiar to this site and a summary of this information will be furnished at a later date.

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REFERENCES (Continued)

MAPS OR CHARTS

BANES

25X1A AMS. Series E 723, Sheet 5076 I, Banes, 1st ed, Jul 60, scale 1:50,000 [REDACTED]  
25X1C [REDACTED]

ACIC. WAC 585, Great Inagna Island, 7th ed, Sep 61, scale 1:1,000,000 (UNCLASSIFIED)

SANTA CRUZ DEL NORTE

25X1A AMS. Series E 723, Sheet 3885 III, Santa Cruz del Norte, 2d ed, Sep 62, scale 1:50,000 [REDACTED]  
25X1C [REDACTED]

SIGUANEA

25X1A AMS. Series E 502, Sheet NF 17-9, San Juan Y Martinez, 1st ed, Jun 61, scale 1:250,000 (FOR USE BY UNITED STATES GOVERNMENT OFFICIALS ONLY)

25X1C AMS. Series E 723, Sheet 3881 III, Siguanee, 1st ed, Jul 60, scale 1:50,000 [REDACTED]  
[REDACTED]

LIEN-SHAN

SAC. US Air Target Chart, Series 200, Sheet 0269-24A, 1st ed, Jun 59, scale 1:200,000 (SECRET)

AMS. Manchuria, Series 1542, Sheet NK 51-10 (Lien-shan), 2d ed, Jul 58, scale 1:250,000 (UNCLASSIFIED)

PORT ARTHUR

ACIC. US Air Target Mosaic, Series 50, Sheet SO 361-9 SMA, 1st ed, Jun 61, scale 1:50,000 (SECRET)

BALAKLAVA

25X1A SAC. US Air Target Chart, Series 100, Sheet [REDACTED] 4th ed, Jan 62, scale 1:100,000 (SECRET)

SAC. US Air Target Chart, Series 200, Sheet 0250-25AL, 3d ed, Jul 60, scale 1:200,000 (SECRET)

STARYY KILDIN

SAC. US Air Target Chart, Series 200, Sheet 0051-18AL, 2d ed, Apr 60, scale 1:200,000 (SECRET)

RELATED DOCUMENTS

BANES

NPIC R-138 62, Cruise-Missile Launch Site Near Banes, Cuba, Oct 62, (TOP SECRET, No Foreign Dissem)

25X1D NPIC R-146 62, Cruise-Missile Launch Site Near Banes, Cuba. Additions and Changes [REDACTED]  
[REDACTED] (TOP SECRET, No Foreign Dissem)

SANTA CRUZ DEL NORTE

NPIC R-1173. 63, Cruise-Missile Launch Site Near Santa Cruz del Norte, Cuba, Mar 63 (SECRET, No Foreign Dissem)

LIEN-SHAN

NPIC R-147 62, Missile Installation Near Lien-shan, Oct 62 (TOP SECRET, No Foreign Dissem)

REFERENCES (Continued)

BALAKLAVA

AFIC. T-57-2. Guided Missile Activity in the Sevastopol-Balaklava Area, USSR, Jun 57 (TOP SECRET CHESS)

25X1C

AFIC. T-60-9. Balaklava Missile Launching Site, USSR, May 60 (TOP SECRET CHESS)

STARYY KILDIN

25X1C

REQUIREMENTS

CIA. RR E R-126 62

DIAXX 35 62 and 63 61

NPIC PROJECT

JN-220 62