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PREFACE

1. (S/D) When complete, this report will be a compendium of information on all deployed Chinese Strategic Rocket Force facilities that have been identified throughout China. A description of each facility and a summary of activity will be included in the compendium.

2. (S/D) The compendium will be divided into four sections with appropriate subsections. Publication will be by subsection. Sections I and II will contain descriptions and overviews of the deployed launch facilities and support facilities. Sections III and IV will address the training and the command, control, and communications facilities.

3. (S/D) An introduction will be provided at the beginning of each section and subsection. Following that, each launch complex, launch group, launch site, or specific and general support facility will be described in a series of formatted individual reports which meet the basic reporting requirements. In addition to the textual information, each individual report will contain an annotated photograph; each complex and group report will contain an annotated map of all specific and related facilities.

4. (S/D) All available satellite imagery was used in the preparation of this report. Descriptions were derived from the latest available imagery. Activity summaries and construction chronologies were based on all imagery from negation date to the information cutoff date, which will be indicated in each individual report. The photograph accompanying each report is not necessarily the latest imagery available but was chosen because it best represents the facilities described.

5. (S/D) The information in this report supersedes that presented in all earlier NPIC basic reports because more recent coverage is available and all photography has been reviewed. The earlier NPIC reports are listed by control number in the appropriate subsections. Comments and discussion by the imagery analyst are consolidated under the heading Analyst's Comments.

6. (S/D) The pagination includes the section number (rendered in Roman numeral) and subsection letter, the geographic place name of the specific facility, and sequential numbering of all similar installations with that place name. Figure numbers are in numerical order by place name.

7. (S/D) Additional subsections will be published until the compendium is completed. New and updated reports will be issued as necessary or as new information becomes available.

(S) Comments and queries regarding this report are welcome. They may be directed to the Missile, Air, and Electronics Section, Strategic Forces Branch, Asian Forces Division, Imagery Exploitation Group, NPIC,

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Section I
Chinese Missile Support Bases and Launch Sites (S)

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SECTION I: CHINESE MISSILE SUPPORT BASES AND LAUNCH SITES (S)

INTRODUCTION

1. (S/D) Section I provides and summarizes data on all of China's strategic SSM missile support bases and launch sites using the basic reporting format. Section I is divided into six subsections (IA through IF). Each subsection contains the individual reports on launch sites and/or missile support bases of a particular type.

2. (S/D) The types of launch sites and missile support bases are defined below.

Launch Site Types

Type I Launch Site

3. (S/D) A type I launch site is a remotely located single launch position, usually consisting of a [redacted] meter-square concrete launch pad surrounded by an apron of packed earth. No missile equipment is stored at the site. The Chinese SRBM, CSS-1 MRBM, and CSS-2 IRBM have been observed at type I launch sites. The US intelligence community currently refers to type I launch sites as field positions. 25X1

Type II Launch Site (Types IIA and IIB)

4. (S/D) A type II launch site consists of a [redacted] concrete launch pad surrounded by a packed-earth apron and two underground propellant storage areas. Type II launch sites are further categorized as either type IIA or IIB, depending on whether or not propellant pipelines connect the launch pad to the propellant storage areas. A type IIA launch site does not contain propellant pipelines, but a type IIB launch site does. There is one type II launch site at each type C missile support base—see definition below. All missile equipment necessary to fire a missile is stored within 3 kilometers of the launch pad (in the type C missile support base). The CSS-2 IRBM is seen predominately at type II launch sites, although some CSS-1 MRBMs are also observed. 25X1

Type IIIA Launch Site

5. (S/D) A type IIIA launch site is a CSS-3 ICBM elevate-to-launch silo similar to the US Titan I silo launcher. An elevator raises the missile to the surface before it is fired. The Chinese silos differ, however, from the US Titan I silos in that up to three refire or spare missiles are stored in a cave below the silo apron. The silo is apparently loaded from within, with the elevator lowered. Only the CSS-3 ICBM system has been associated with these silos.

Type IIIB Launch Site

6. (S/D) A type IIIB launch site is a [redacted] concrete launch pad connected via a 35-meter-long concrete apron to a hardened missile storage structure. The missile storage structure is horizontal to and inline with the launch pad. Additionally, there are two propellant storage structures, one separate ground support equipment (GSE) storage structure, and one or two small command/control/communications structures. All of these structures are hardened. These type IIIB roll-out-to-launch sites are associated with the CSS-3 ICBM because of the specialized attachment points on the launch pad and apron for the CSS-3 transporter-erector. 25X1

Type IV Launch Site

7. (S/D) A type IV launch site is a CSS-4 ICBM silo similar to the US Titan II silo. The missile is fired from within the silo. However, the Chinese silos for the CSS-4, like those for the CSS-3, have been situated on hillsides with caves below the apron for storage of propellants, missiles, and missile GSE.

Missile Support Base Types

Type A Missile Support Base

8. (S/D) A type A missile support base is a remotely located storage and minor maintenance facility for missiles and missile GSE. There are no facilities for missile propellants or nuclear weapons storage, and equipment storage is entirely in unprotected garages. No prepared launch sites, except for a training launch site, are associated with the base. Equipment for the Chinese SRBM, CSS-1 MRBM, and CSS-2 IRBM systems has been observed in these bases. Type A missile support bases are referred to as launch site garrisons by much of the US intelligence community.

[redacted] 25X1

Type B Missile Support Base

9. (S/D) A type B missile support base is in a missile launch complex and contains storage areas for missiles and missile GSE but no launch sites. Missiles and missile GSE are stored in buildings or hardened bunkers and caves, but there may be a combination of all of these features. Equipment for the Chinese SRBM, CSS-1 IRBM, CSS-2 IRBM, and CSS-3 ICBM has been observed in these bases. Type B missile support bases are referred to as launch complex garrisons by much of the US intelligence community.

Type C Missile Support Base

10. (S/D) A type C missile support base is in a missile launch complex and contains both a launch site (type II) and hardened storage areas for all the equipment needed to launch a missile. All type C missile support bases have sufficient space underground to store at least one missile launch unit. Most bases also have some equipment storage buildings but not enough space in them to store the equipment for an entire launch unit. Only the equipment for CSS-2 IRBMs and some CSS-1 MRBMs has been observed in these bases. Type C missile support bases are referred to as launch site garrisons by much of the US intelligence community.

Subsection IC
Type C Missile Support
Bases and Type II Launch Sites (S)

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SUBSECTION IC: TYPE C MISSILE SUPPORT BASES AND TYPE II LAUNCH SITES (S)

INTRODUCTION

Definitions

Type C Missile Support Base (Launch Site Garrison)

1. (S/D) A type C missile support base is in a missile launch complex and contains both a launch site (type II) and hardened storage areas for all the equipment needed to launch a missile. Most bases also contain some equipment storage buildings, but these buildings do not contain enough space to store the missile equipment for an entire launch unit.

Type II Launch Site (Types IIA and IIB)

2. (S/D) A type II launch site consists of a [redacted] concrete launch pad surrounded by a packed-earth apron and two underground propellant storage areas. Type II launch sites are further categorized as either type IIA or IIB, depending on whether or not propellant pipelines connect the launch pad to the propellant storage areas. A type IIA launch site does not contain propellant pipelines; a type IIB launch site contains propellant pipelines. There is one type II launch site at each type C missile support base. All missile equipment necessary to fire a missile is stored within 3 kilometers of the launch pad (in the type C missile support base). The CSS-2 IRBM is seen predominately at type II launch sites, although some CSS-1 MRBMs are also observed.

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Number and Location

3. (S/D) Forty type C missile support bases and 40 type II launch sites have been identified in China. These bases and launch sites are in four separate SSM launch complexes—at Tonghua in northeast China, at Lianxiwang in east-central China, at Jianshui in southwest China, and at Liuqingkou in west

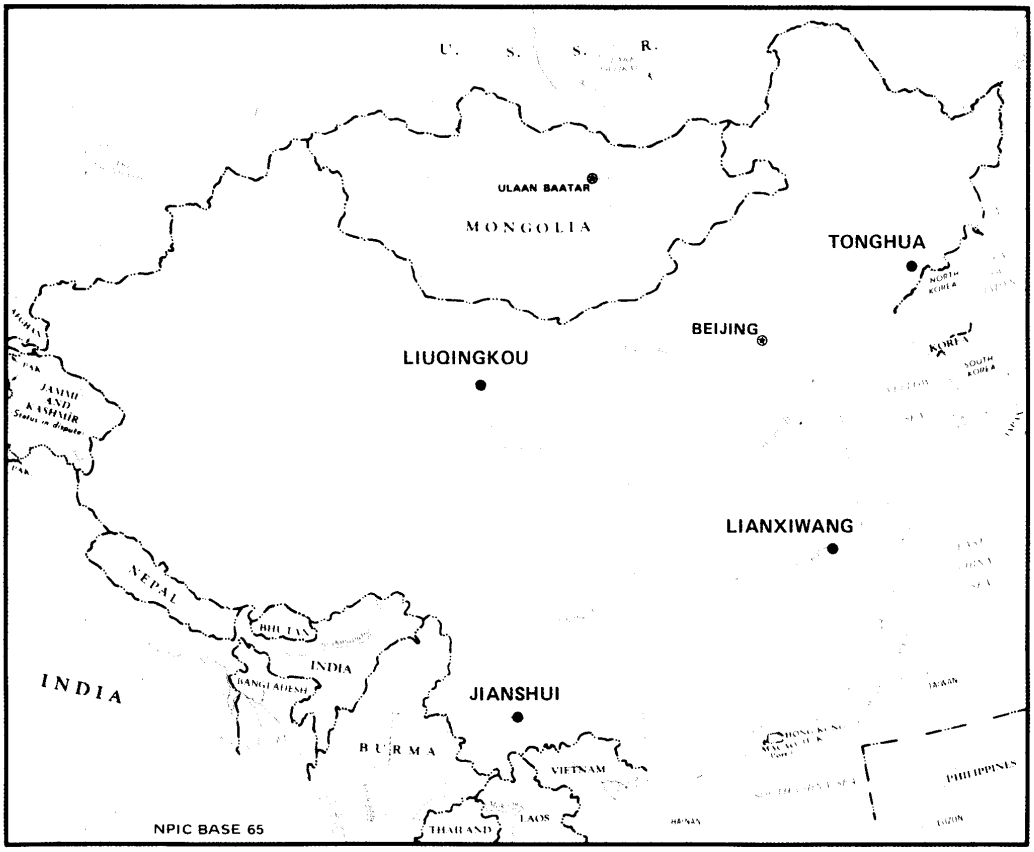

FIGURE 1. SSM LAUNCH COMPLEXES IN CHINA WITH TYPE C MISSILE SUPPORT BASES AND TYPE II LAUNCH SITES

25X1

China (Figure 1). Within each complex, the type C missile support bases and the type II launch sites are geographically separated into groups of four. Together with a separate propellant storage area, a headquarters area, and several personnel support areas, the four bases are comprised in a regiment-sized military unit. The regiment's area is also termed a launch group.

Report Overview

4. (S/D) This subsection of the compendium contains an introduction and map of each complex and each launch group. Following the introduction to each launch group are the individual basic reports on the four type C missile support bases (launch site garrisons) and the associated type II launch sites within each launch group.

Notes for the Reader

5. (S/D) Each individual basic report contains one page of text which is formatted by subject so that comparisons are easier for the reader. The photograph of each missile support base and launch site shows the central area of the base including all cave entrances to the underground GSE storage structures or areas. The exact configuration of all the underground storage structures cannot be observed on overhead imagery. However, during construction, enough information was obtained from the observation of equipment, forms, amount of spoil extracted, and from uncovered parts of the structures to approximate the size and configuration of the underground GSE storage areas. These approximate configurations are indicated on each photograph in dashed outlines. The photograph does not necessarily show all the buildings for housing, support, and GSE storage. The buildings at each base are considerably scattered over areas of from 1,000 to as much as 4,000 meters. However, all buildings have been measured and accounted for in the text and inset table for each individual basic report.

6. (TSR) It was not practical to present a chronology of construction and missile equipment observations by each date of photographic coverage. The photographic record for each garrison as of 1980 spans up to 15 years of accumulated coverage on as many as 200 separate dates. Coverage also has been very sporadic, especially prior to 1971. Before 1971, only low-resolution photography with from six- to 20-month gaps in coverage was available. After 1971, the photographic record improved considerably, but gaps in coverage of up to six months are common. The large gaps in coverage and the poor resolution of the imagery prior to 1971 considerably degrades any chronology and lessens the amount of information which could be obtained. By 1971, for example, all ten launch groups of type C missile support bases and type II launch sites were under construction; almost half were complete and missile equipment was likely to be present.

7. (S/D) In each basic report, a construction activity was sometimes dated within a span of time—negation date, the date first observed—because of lack of coverage and poor resolution. Where evidence from photography was sufficient, a judgment as to the probable time of construction within the time span was made. For example, the apron around a launch pad may have been leveled, graded, and camouflaged at the time the launch pad was first observed complete. The condition of the apron, therefore, provides evidence that the launch pad was probably constructed some months before photography was first available to confirm pad construction.

8. (TSR) In the case of the chronology of missile equipment observed at each base, missile equipment could have been present at any time prior to 1971, but it would not have been discernible because the resolution of the photography prior to 1971 was too poor and the coverage was too infrequent. At Tonghua and Lianxiwang missile launch complexes, missile railcars were identified five years before missile GSE was first seen; yet the railcars are evidence that missile equipment was already at some of the bases. Therefore, in each individual basic report—under the headings Missile System Association and Activity—the completion of the launch pad, the completion of missile equipment storage buildings, and the establishment of security are included to allow the reader to judge when the base was first usable and, therefore, when missile equipment might have been present. The first observation of equipment, the first time missile system association could be determined, and any subsequent change in missile association are then discussed. The chronology also presents any evidence from equipment observations that more than one launch unit was at the missile support base.

9. (S/D) The floorspace in buildings used for housing is presented in square meters. It was determined that the floorspace in barracks averages 80 percent of the measured roof area. Terms such as "company-sized unit" and "company-sized area" indicate a military unit of from 90 to 140 personnel or the housing space to accommodate a unit of that size at a ratio of 4.6 square meters of floorspace per person. The buildings used for housing at missile bases were often geographically separated into company-sized areas, each with one messhall and one basketball court. The number of company-sized areas as well as total floorspace and other data to indicate personnel strength and organization have been provided in each basic report.

10. (TSR) The information in this subsection supersedes the previously published NPIC basic reports listed below.

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	RCA-01/0024/74, Sep 74 (TOP SECRET	
	RCA-01/0016/74, Jul 74 (TOP SECRET	
	RCA-01/0002/79, Aug 79 (TOP SECRET	
	RCA-01/0001/78, Feb 79 (TOP SECRET	
	RCA-01/0018/74, Jul 74 (TOP SECRET	
	RCA-01/0027/74, Sep 74 (TOP SECRET	
	RCA-01/0026/74, Sep 74 (TOP SECRET	
	RCA-01/0012/74, Apr 74 (TOP SECRET	

REQUIREMENT

COMIREX A01

Project 200002DA

(S) Comments and queries regarding this report are welcome. They may be directed to [redacted] coordinator and principal imagery analyst for Subsection IC, and to [redacted] Missile, Air, and Electronics Section, Strategic Forces Branch, Asian Forces Division, Imagery Exploitation Group, NPIC, [redacted] 25X1 25X1 25X1

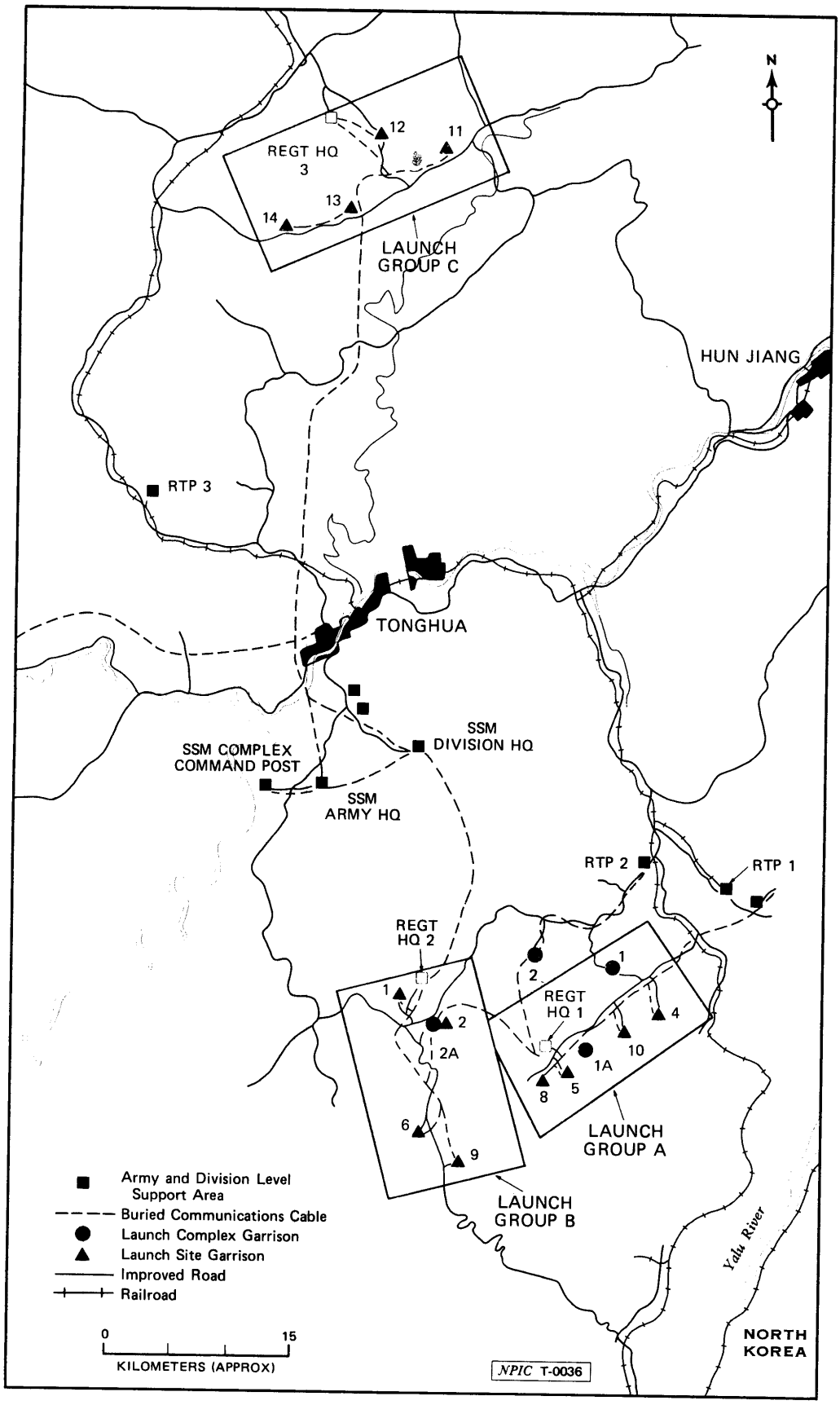

FIGURE 1. TONGHUA MISSILE LAUNCH COMPLEX SSM, CHINA

TONGHUA MISSILE LAUNCH COMPLEX SSM (S)

1. (S/D) The Tonghua Missile Launch Complex SSM ( ) is in northeastern China 25X1
The complex contains 12 launch site garrisons (type C missile support bases). The launch site garrisons are organized by groups of four into a total of three launch groups, designated A, B, and C (Figure 1). Each launch group is administered from a regiment-level headquarters, SSM Regiment Headquarters 1, 2, and 3, respectively. One division headquarters installation and one army headquarters installation have been identified as part of the Tonghua complex.

2. (S/D) The launch site garrisons are served directly by road. Paved all-weather roads lead to each launch group, but roads within the launch group are composed of packed earth that is probably overlayed with gravel. There is rail service directly to the complex, and three rail-to-road transfer points (RTPs) have been identified. Electric power is supplied from the local power grid via aboveground lines. Aboveground and buried communications lines extend to all the launch site garrisons.

3. (S/D) The garrisons and support areas of Tonghua complex are in separate valleys in a mountainous and forested area surrounding the city of Tonghua. Winters are severe and there is snow cover four to five months of the year. Summers are mild with moderate rainfall. The steep mountainsides provide the isolation and physical security for the missile installations. Fences are not used. There are guardposts along the access road to each valley where a missile installation is located. A lift gate is across the road leading to each launch site garrison.

4. (S/D) SRBMs were probably deployed to the Tonghua complex as early as 1962. Portions of what is now Tonghua Launch Complex Garrison 2 (BE) were complete in November 1962. A 25X1
probable SRBM launch area, loop roads, at least one missile storage/checkout building, garages, and barracks were identifiable on the next clear photography, obtained in May 1965. SSM-associated railcars were first confirmed at the complex in September 1967. Missile-associated vehicles could not be identified until June 1971 when medium-resolution photography was first available. Both CSS-1 and CSS-2 equipment were observed, indicating that both systems already were deployed at Tonghua complex in 1971. By 1972, more than 30 missile railcars and propellant railcars were seen at one time in the railyard. The complex has grown gradually but continually throughout the 1970s as well as during the 1960s. As of September 1980, construction workers were still at the complex; new underground ground support equipment (GSE) storage areas and new housing and support buildings were under construction.

TONGHUA SSM LAUNCH SITE GARRISONS 4, 5, 8, AND 10
LAUNCH GROUP A
TONGHUA MISSILE LAUNCH COMPLEX SSM (S)

ABSTRACT

1. (S/D) Launch Site Garrisons 4, 5, 8, and 10 are component parts of Launch Group A, Tonghua Missile Launch Complex SSM. Each launch site garrison is in a forested stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas. Each launch area contains a launch pad and a missile loading apron. Subsurface propellant lines connect the launch pad to propellant storage caves. The principal GSE storage is provided by a probable drive-through tunnel, a separate GSE storage cave, and two propellant storage caves. Construction at these garrisons began in early 1966 and continued through early 1970. The launch pad at each launch site garrison had been completed for contingency missile firings by late 1968. CSS-1 MRBM equipment was confirmed in the launch group in July 1972. All observations of GSE through mid-1980 have been related to the CSS-1 missile system. The housing areas at all of the garrisons were enlarged beginning in mid-1971. This work was complete by early 1974.

INTRODUCTION

2. (S/D) Launch Site Garrisons 4, 5, 8, and 10 are the four type C missile support bases in Launch Group A, Tonghua Missile Launch Complex SSM. The layout of Launch Group A, which is also designated Regiment 1 of this complex, is shown on the facing page (Figure 2). In addition to the four launch site garrisons, Launch Group A contains Tonghua Launch Complex Garrison 1 [redacted] and Tonghua Launch Complex Garrison 1A [redacted] type B missile support bases. There are two separate propellant storage areas, but only one, Tonghua Propellant Storage Area 1 [redacted], is separately targeted. Launch Group A also contains specialized and general support areas of a regiment-level headquarters. A hardened command post (Tonghua SSM Regiment Headquarters 1, [redacted] and probably a hardened communications facility are in the westernmost support area within 300 meters of the headquarters administration building. 25X1 25X1 25X1 25X1

Analyst's Comments

3. (S/D) The launch site garrisons in Launch Group A were ready for contingency missile firings by the end of 1968 and were essentially complete by the end of 1970. Missile GSE was first confirmed in the launch group in July 1972. However, improvements were made to each garrison through early 1974. Between 1971 and 1973, buildings for housing were added; between 1972 and 1974, the propellant pipelines were opened and refurbished or replaced. Also, between 1972 and 1974, buried communications lines were refurbished or replaced throughout the launch group area. The chronology of construction at Launch Group A is similar to that seen at Launch Group B except that work in Launch Group A was approximately a year advanced.

4. (S/D) There is either poor road access to some propellant storage caves at these launch site garrisons or no road access to the drive-in cave entrances. It is, therefore, unlikely that these caves are being used for propellant vehicle storage. However, the propellant storage caves are not likely to be used by CSS-1 MRBM launch units in the same way that they are used by CSS-2 launch units. The oxidizer for the CSS-1 is cryogenic and nonstorable, while the propellants for the CSS-2 are all storable, both fuel and oxidizer. There is no indication that either of the propellant storage caves at garrisons where the CSS-1 is based have been prepared for cryogenic materials storage. Also, there is no evidence that either of the propellant pipelines is specially insulated or that the pipelines are equipped with special valves necessary for handling super-cooled liquids. Therefore, the MRBM units at garrisons in Launch Group A are not using one or both of the propellant storage caves at each launch site garrison or the units are using them for a different purpose.

5. (S/D) The launch pad extensions at these four garrisons have not been observed clearly. The [redacted] square launch pad appears to be similar to that at other launch site garrisons, but the pad extensions on all four sides sometimes appeared to be rounded on the outside edge which gives the appearance that the overall shape of the launch pad plus extensions is rounded instead of square. Whether the overall area is round or square, the square launch pad within it appears to be similar to those at other launch site garrisons seen in China. 25X1

 [redacted] 25X1

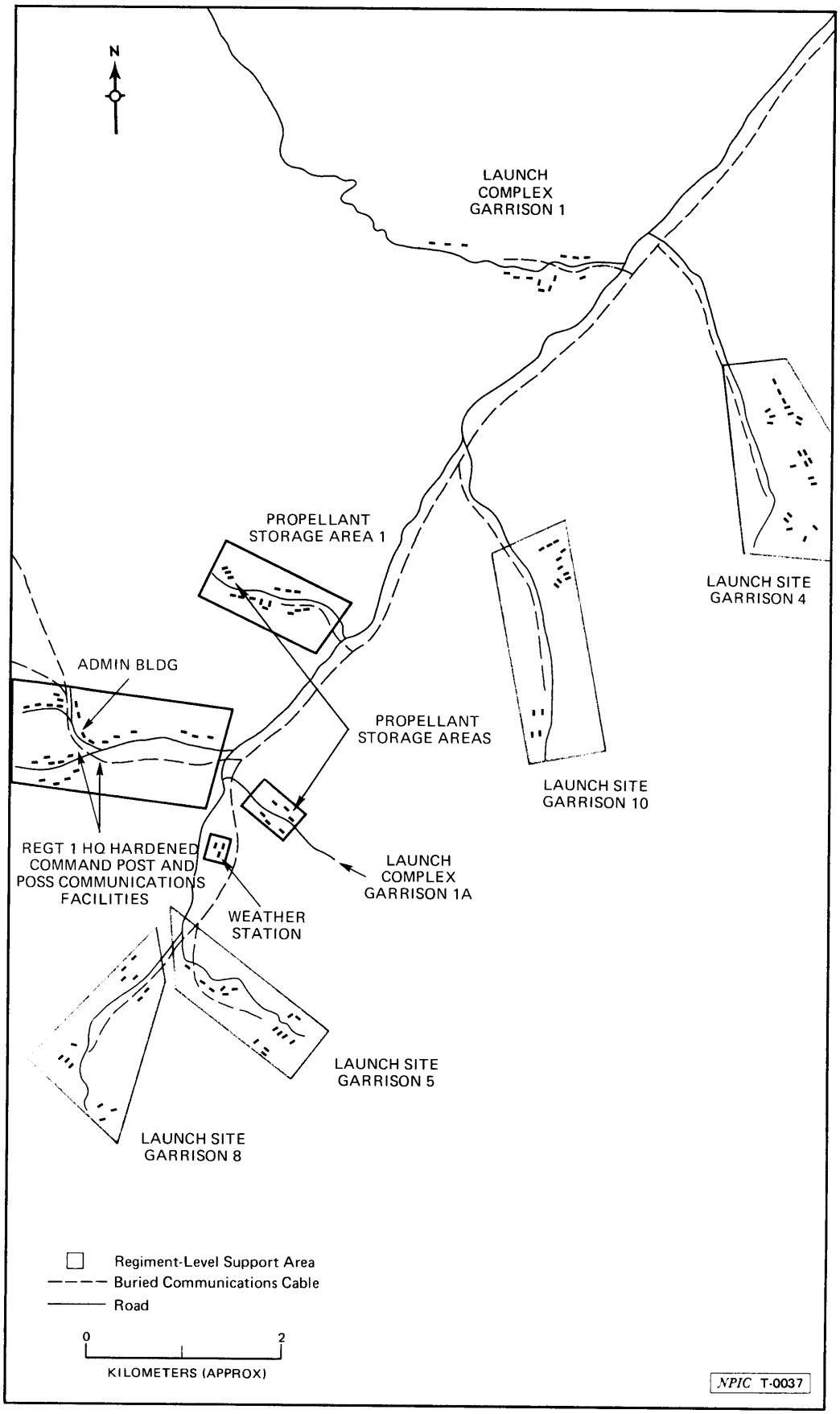

FIGURE 2. LAUNCH GROUP A (REGIMENT 1), TONGHUA MISSILE LAUNCH COMPLEX SSM

INSTALLATION OR ACTIVITY NAME					COUNTRY
Tonghua SSM Launch Site Garrison 4					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	41-26-26N 126-15-51E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0290-18, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Mar 66

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 4 (Figure 3) is one of the four launch site garrisons in Launch Group A. The garrison is approximately 19 kilometers by road from the Tonghua SSM RTP 2 [redacted] and is in a forested stream valley. The garrison consists of a launch area, a GSE storage area, and barracks and housing areas. 25X1

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports and one utilities access port are set into the concrete apron extensions near the corners of the [redacted] overall launch pad plus apron. Subsurface propellant lines lead from these access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of [redacted] 25X1 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) There is no surface GSE storage. Underground GSE storage is provided by two propellant storage caves, an additional cave with blast doors, and a probable drive-through tunnel. The propellant storage caves are 91 meters and 102 meters northwest of the launch pad. The additional cave is approximately 160 meters south of the launch pad, and the probable drive-through tunnel is approximately 300 meters north of the launch pad. Narrow-gauge rails have not been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 149 meters apart.

Other Storage

4. (S/D) None was discernible.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are 1,000 and 300 meters north of the launch pad. Launch Site Garrison 4 contains 1,738 square meters of floorspace in 15 barracks for three company-sized units. There are three messhalls and three basketball courts, one for each unit.

Construction Status

6. (S/D) Construction of Launch Site Garrison 4 began between March and May 1966. The launch pad was probably constructed in late 1968. The garrison was already complete when observed in February 1969. Construction of the subsurface propellant lines was seen in February 1968, and the lines were complete by March 1970. The underground GSE storage areas were complete by late 1970. Additional housing (one and one-half company-sized unit areas) was constructed in 1971. Refurbishment or replacement of the propellant pipelines was observed between September 1974 and June 1975. Few changes have been observed at this garrison since June 1975.

Missile System Association and Activity

7. (S/D) The launch pad has been usable since late 1968. Site security had already been established when the area was first observed on medium-resolution imagery in July 1971. A CSS-1 transporter-erector and an A-frame crane were observed in August 1973. A CSS-1 transporter-erector, a canvas-covered CSS-1 missile on its transporter, and most of the GSE for one launch unit were observed in May 1974. Some CSS-1 GSE was seen in 1976 and 1978. A CSS-1 exercise was observed at Launch Site Garrisons 4 and 10 during May 1980.

[redacted] 25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Tonghua SSM Launch Site Garrison 5					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	41-23-37N 126-10-24E				

25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0290-17, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Mar 66

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 5 (Figure 4) is one of the four launch site garrisons in Launch Group A. The garrison is approximately 30 kilometers by road from the SSM RTP 2 and is in a forested stream valley. The garrison consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports are set into the concrete apron extensions near the corners of the [redacted] overall launch pad plus apron. Subsurface propellant lines lead from these access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of [redacted] degrees.

25X1
25X1
25X1
25X1

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by a missile checkout/storage building and a five-bay garage. Underground GSE storage is provided by two propellant storage caves, an additional cave with blast doors, and a probable drive-through tunnel. The propellant storage caves are 79 meters and 113 meters northeast of the launch pad. The additional cave is 80 meters southwest of the launch pad. The probable drive-through tunnel is shared with Launch Site Garrison 8 and is approximately 800 meters west of the launch pad. Narrow-gauge rails have been not identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 675 meters apart.

Other Storage

4. (S/D) None was discernible.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are approximately 700 meters west and 200 meters east of the launch pad. Launch Site Garrison 5 contains 1,584 square meters of floorspace in 13 barracks for three company-sized units. There are three messhalls and three basketball courts, one for each unit.

Construction Status

6. (S/D) Construction of Launch Site Garrison 5 began between March and May 1966. The missile checkout/storage building was complete by late 1967. The launch pad probably was constructed in late 1968. Construction of the underground GSE storage areas continued through early 1970. The underground GSE storage areas were complete before medium- or high-resolution imagery was acquired in mid-1971. Additional buildings for housing were constructed at the garrison in 1971, 1972, and 1973; the floorspace totaled one and one-half company-sized barracks areas.

Missile System Association and Activity

7. (S/D) The launch pad has been usable since late 1968. The security for Launch Site Garrison 5 is shared with Launch Site Garrison 8. The security building had already been constructed when seen on the first unobscured medium-resolution imagery in February 1972. A CSS-1-associated A-frame crane was identified in July. Missile GSE has been observed sporadically. Observations of GSE included a CSS-1 transporter-erector in October 1979. A warhead van was observed in May 1980, during a training exercise period at Launch Site Garrisons 4 and 10.

[redacted] 25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Tonghua SSM Launch Site Garrison 8					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETR NO
NA	41-23-34N 126-09-18E				

25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0290-17, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Mar 66

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 8 (Figure 5) is one of the four launch site garrisons in Launch Group A. The launch site garrison is approximately 40 kilometers by road from the SSM RTP 2 and is in a forested stream valley. The garrison consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports are set into the concrete apron extensions near the corners of the [redacted] overall launch pad plus apron. Subsurface propellant lines lead from these access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of 130 degrees.

25X1
25X1
25X1

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by a five-bay garage. Underground GSE storage is provided by two propellant storage caves, an additional cave with blast doors, and a probable drive-through tunnel that is shared with Launch Site Garrison 5. The propellant storage caves are 55 meters and 75 meters west of the launch pad. The additional cave is approximately 50 meters north of the launch pad. The probable drive-through tunnel is approximately 2,000 meters north of the launch pad. Narrow-gauge rails have not been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 675 meters apart.

Other Storage

4. (S/D) None was discernible.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are 600 and 1,800 meters northwest of the launch site. Launch Site Garrison 8 contains 1,604 square meters of floorspace in 13 barracks for three company-sized units. There are three messhalls and three basketball courts, one for each unit.

Construction Status

6. (S/D) Construction of Launch Site Garrison 5 began between March and May 1966. The launch pad was probably constructed in late 1968. Construction of the underground GSE storage areas continued through early 1970. In 1971, 1972, and 1973, one and one-half company-sized housing areas were constructed. With the exception of refurbishment and small improvements in the housing area, no changes have been observed since early 1974.

Missile System Association and Activity

7. (S/D) The launch pad has been usable since late 1968. Security had already been established when the garrison was observed on the first unobscured medium-resolution photography in February 1972. Nonsystem-specific missile GSE was observed in July 1972, but CSS-1 cryogen trailers were identified in May 1973. Major GSE elements of a CSS-1 unit were present in October 1977 and again in October 1979.

[redacted]
25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Tonghua SSM Launch Site Garrison 10					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	41-25-04N 126-14-04E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0290-18, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Mar 66

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 10 (Figure 6) is one of the four launch site garrisons in Launch Group A. The garrison is approximately 23 kilometers by road from the SSM RTP 2 and is in a forested stream valley. The garrison consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron 25X1
extension on all four sides. Two propellant access ports are set into the concrete apron extensions near the
corners of the [redacted] overall launch pad plus apron. Subsurface propellant lines lead from these access ports 25X1
to propellant storage caves. The missile loading apron has not been observed clearly. Based upon the alignment of the road into the launch pad area, this garrison has a loading azimuth of 135 degrees.

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by a missile checkout/storage building and a five-bay garage. Underground GSE storage is provided by two propellant storage caves, an additional cave with blast doors, and a probable drive-through tunnel. The propellant storage caves are 127 meters and 78 meters west of the launch pad. The additional cave is approximately 240 meters south of the launch pad. A probable drive-through tunnel is approximately 226 meters north of the launch pad. Narrow-gauge rails have not been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 292 meters apart.

Other Storage

4. (S/D) None was discernible.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are south and east of the launch pad. Launch Site Garrison 10 contains 1,341 square meters of barracks floorspace for three company-sized units. There are three messhalls (two share one kitchen), and three basketball courts, one for each unit.

Construction Status

6. (S/D) Construction of Launch Site Garrison 10 began between March and May 1966. The missile checkout/storage building was complete in late 1967. The launch pad was built between September 1968 and February 1969. Construction of the underground GSE storage areas continued through early 1970. In 1971 and 1972, new housing facilities (one and one-half company-sized unit areas) were added to the garrison. In 1979, most of the housing facilities south of the launch pad were dismantled, and two new company-sized housing areas were under construction east of the launch pad. This construction was continuing in 1980.

Missile System Association and Activity

7. (S/D) The launch pad has been usable since late 1968. The missile checkout/storage building was usable earlier, in late 1967. The underground GSE storage areas were complete by 1970. Security had already been established when the garrison was first observed on medium-resolution imagery during July 1971. Nonsystem-specific GSE was observed in July 1972; CSS-1 associated GSE was identified in September 1976. A CSS-1 transporter-erector was observed in September 1977 and again in October 1978. A CSS-1 missile exercise was recently observed at this garrison during May 1980.

TONGHUA SSM LAUNCH SITE GARRISONS 1, 2, 6, AND 9
LAUNCH GROUP B
TONGHUA MISSILE LAUNCH COMPLEX SSM (S)

ABSTRACT

1. (S/D) Launch Site Garrisons 1, 2, 6, and 9 are component parts of Launch Group B, Tonghua Missile Launch Complex SSM. Each launch site garrison is in a forested stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas. Each launch area contains a launch pad and a missile loading apron. Subsurface propellant lines connect the launch pad to propellant storage caves. The principal GSE storage is provided by a probable drive-through tunnel, a separate GSE storage cave, and two propellant storage caves. Construction at these garrisons began in early 1967 and continued through early 1972. The launch pad at all four launch site garrisons had been completed for contingency missile operations by early 1969. CSS-2 missile GSE was observed at all of the garrisons in late 1972 and early 1973. During 1974 and 1975, additional housing facilities and GSE storage buildings were completed at all four garrisons.

INTRODUCTION

2. (S/D) Launch Site Garrisons 1, 2, 3, and 9 are the four type C missile support bases in Launch Group B, Tonghua Missile Launch Complex SSM. The layout of Launch Group B, which is also designated Regiment 2 of this complex, is shown on the facing page (Figure 7). In addition to the four launch site garrisons, Launch Group B contains Tonghua Launch Complex Garrison 2A [redacted] a type B missile support base; Tonghua Propellant Storage Area 2 [redacted], and the specialized and general support areas of a regiment-level headquarters. A hardened command post for the regiment-level headquarters, Tonghua SSM Regiment Headquarters 2 [redacted] its associated hardened communications facility (not separately targeted), and the weather station for the regiment are in the northern part of the launch group area. The administration building, auditorium, and family housing areas for the regiment-level headquarters are also in the northernmost support areas. 25X1 25X1 25X1

Analyst's Comments

3. (S/D) The launch site garrisons in Launch Group B were ready for contingency missile firings by early 1969 and were essentially complete by the end of 1970. Missile GSE was first confirmed in the launch group in July 1971. Improvements were made to each garrison from 1971 through 1975. In 1971 and 1972, more housing buildings were added; between 1972 and 1974, the propellant pipelines were opened and refurbished or replaced. In 1974 and 1975, the buried communications lines were refurbished or replaced at all of the garrisons. Also in 1974 and 1975, new housing facilities were again added, a three-bay garage was constructed, and a POL storage bunker was built at each garrison.

4. (S/D) A field training area for Launch Group B is in Complex Garrison 2A. A concrete launch pad without extensions or a loading apron has been constructed in a heavily wooded area. The maneuver area and the apron around the pad are small and would simulate conditions which would be encountered at new and hastily constructed field launch positions in northeast China. Only CSS-2 GSE has been observed at the field training area.

5. (S/D) Major elements of two CSS-2 launch units were observed at Launch Site Garrison 9 in mid-1972. Since that time, some duplicate items of GSE, which indicate the presence of more than one launch unit, have been observed at all four of the launch site garrisons. Elements of as many as six propellent vehicle complements have been observed at one time in Propellent Storage Area 2.

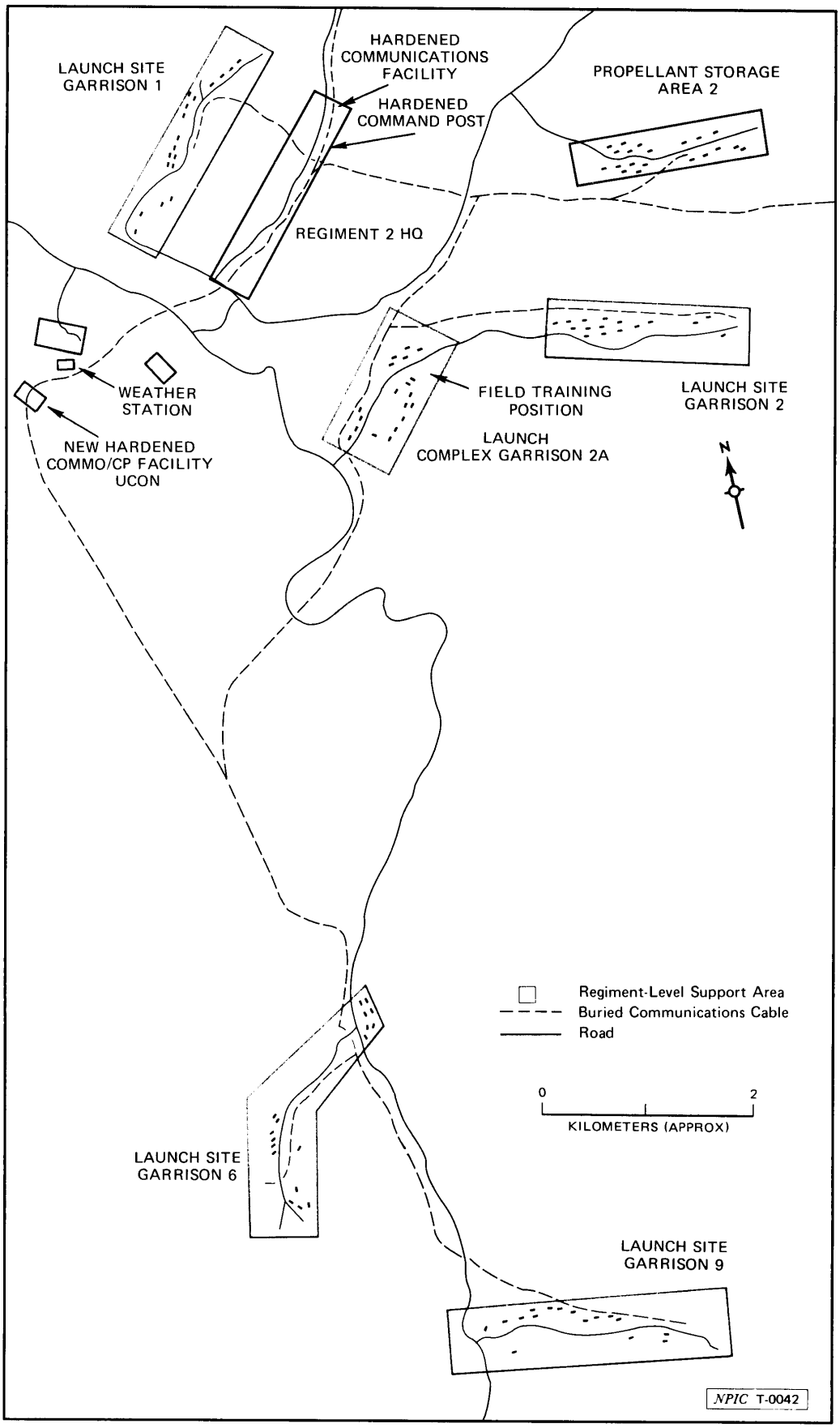

FIGURE 7. LAUNCH GROUP B (REGIMENT 2), TONGHUA MISSILE LAUNCH COMPLEX SSM

INSTALLATION OR ACTIVITY NAME					COUNTRY
Tonghua SSM Launch Site Garrison 1					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	41-27-01N 126-00-27E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0290-17, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	May 66

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 1 (Figure 8) is one of the four launch site garrisons in Launch Group B. The garrison is approximately 33 kilometers by road from the SSM RTP 2 and is in a forested valley. The garrison consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports are set into the concrete apron extensions near the corners of the [redacted] launch pad plus apron. Subsurface propellant lines lead from these access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of [redacted] 25X1 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by one five-bay and one three-bay garage. Underground GSE storage is provided by two propellant storage caves, an additional GSE storage cave with blast doors, and a probable drive-through tunnel. The propellant storage caves are 174 meters north and 87 meters south of the launch pad, and a probable drive-through tunnel is approximately 60 meters west of the launch pad. Narrow-gauge rails have not been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 160 meters apart. The additional GSE storage cave is 65 meters north of the launch pad.

Other Storage

4. (S/D) A bunkered POL storage facility is 155 meters north-northeast of the launch pad.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are entirely within the security gate and both north and south of the launch area. Launch Site Garrison 1 contains 1,939 square meters of floorspace in 15 barracks for four company-sized units. There are four messhalls and four basketball courts, one for each unit. There are also two probable family-quarters buildings.

Construction Status

6. (S/D) Construction of Launch Site Garrison 1 began between May 1966 and January 1967. The launch pad was probably constructed in late 1968. The garrison was already complete when observed in February 1969. Construction of the subsurface propellant lines was discernible in May 1969. Refurbishment or replacement of both of the propellant pipelines was observed between December 1972 and December 1973. Housing facilities were added in 1971 and 1972 and again in 1975. No significant construction activity has occurred here since 1975. An underground communications cable linking this garrison with other SSM-related facilities within the Tonghua complex was present in March 1970.

Missile System Association and Activity

7. (S/D) A truck-mounted crane/cherry picker was observed in July 1972, and small numbers of cargo trucks, van trucks, and cranes were observed through 1973. In May 1974, confirmed CSS-2 system-related GSE was first identified. CSS-2 system-related GSE was observed sporadically through May 1980. Two truck-mounted cranes were at one of the entrances to the tunnel on 17 May.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Tonghua SSM Launch Site Garrison 2					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	41-25-34N 126-03-43E				

25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0290-17, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	May 66

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 2 (Figure 9) is one of the four launch site garrisons in Launch Group B. The garrison is approximately 36 kilometers (km) by road from the SSM RTP 2 and is in a forested stream valley. The garrison consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports are set into the concrete apron extensions near the corners of the [redacted] launch pad plus apron. Subsurface propellant lines lead from these access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of 120 degrees.

25X1
25X1
25X1

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by a missile checkout/storage building and a three-bay and a five-bay garage. Underground GSE storage is provided by two propellant storage caves, an additional GSE storage cave with blast doors, and a probable drive-through tunnel. The propellant storage caves are 114 meters east and 83 meters west of the launch pad, and a probable drive-through tunnel is approximately 105 meters west-southwest of the launch pad. Narrow-gauge rails have not been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 169 meters apart. The additional GSE storage cave is 90 km east of the launch pad.

Other Storage

4. (S/D) A POL storage bunker is 2 km west of the launch pad in Complex Garrison 2A. A possible POL bunker is at the end of the access road within Launch Site Garrison 2.

Barracks and Housing Areas

5. (S/D) The barracks and housing area is 825 meters northwest of the launch pad. Launch Site Garrison 2 contains 2,044 square meters of floorspace in 15 barracks for four company-sized units. There are three messhalls and two basketball courts.

Construction Status

6. (S/D) Construction of Launch Site Garrison 2 began between May 1966 and January 1967. The missile checkout/storage building was constructed in late 1967. The launch pad was first observed in May 1968 and was probably constructed in early 1968. Construction of the subsurface propellant lines was first discernible in September 1968 and was complete by May 1970. New housing facilities were added to the garrison in 1971 and again in 1974 and 1975. Refurbishment or replacement of both subsurface propellant pipelines was observed between August 1973 and April 1974. No new construction has been observed since 1975. An underground communications cable linking this garrison with other SSM-related facilities within the Tonghua complex was present in May 1970.

Missile System Association and Activity

7. (S/D) The missile GSE storage buildings and launch pad were usable in 1968. Vehicles were discernible in the garrison in July 1972, and CSS-2 GSE was confirmed in August. Some CSS-2-related GSE has been observed frequently at the garrison since 1972 and was identified as recently as June 1980.

[redacted] 25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Tonghua SSM Launch Site Garrison 6					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	41-19-53N 126-01-23E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0290-17, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	May 66

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 6 (Figure 10) is one of the four launch site garrisons in Launch Group B. The garrison is approximately 42 kilometers by road from the SSM RTP 2 and is in a forested stream valley. The garrison consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [ ] launch pad with a [ ] concrete apron extension on all four sides. Two propellant access ports and one utilities access port are set into the concrete apron extensions near the corners of the [ ] launch pad plus apron. Subsurface propellant lines lead from these access ports to propellant storage caves. The missile loading apron is [ ] [ ] with a loading azimuth of [ ] 25X1 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by a missile checkout/storage building and a three-bay and a five-bay garage. Underground GSE storage is provided by two propellant storage caves, an additional GSE storage cave with blast doors, and a probable drive-through tunnel. The propellant storage caves are 125 meters west and 77 meters south-southeast of the launch pad. A probable drive-through tunnel is approximately 322 meters southwest of the launch pad. Narrow-gauge rails have not been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 330 meters apart. The additional GSE storage cave is 30 meters south of the tunnel entrances.

Other Storage

4. (S/D) A POL storage bunker is 350 meters south of the launch pad.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are along the site access road and east of the intersection of the access road and the main road. The area along the main road has been separately identified as Tonghua Barracks Area [ ] Together the housing areas contain a total of 2,310 square meters of floorspace in 22 separate buildings. The housing areas appear to support four company-sized units. There are four messhalls and four basketball courts, one for each unit. The housing areas also contain four support buildings, two of which are possibly for family quarters. 25X1

Construction Status

6. (S/D) Construction of Launch Site Garrison 6 began between May 1966 and May 1967. The missile checkout/storage building was complete by May 1968. The launch pad was probably constructed in late 1968. The pad was already complete when observed in February 1969. Construction of the subsurface propellant lines was first discernible in November 1970 and was complete by July 1971. Additional housing facilities were constructed in 1971 and again in 1974 and 1975. Refurbishment or replacement of the propellant lines was observed in mid-1973 and was complete by the end of the year. The POL storage bunker was added in 1975. An underground communications cable linking this garrison with other SSM-related facilities within the Tonghua complex was present in May 1970.

Missile System Association and Activity

7. (S/D) The GSE storage buildings were usable in 1968; the launch pad was already complete by February 1969. Vehicles were observed at the garrison in 1971 and 1972, but it was not until August 1973 that CSS-2-associated GSE was confirmed. Since 1973, CSS-2 GSE has been observed frequently at the garrison and as recently as June 1980.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Tonghua SSM Launch Site Garrison 9					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	41-19-15N 126-03-46E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0290-17, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	May 66

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 9 (Figure 11) is one of the four launch site garrisons in Launch Group B. The garrison is approximately 45 kilometers by road from SSM RTP 2 and is in a forested stream valley. The garrison consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports and one possible utilities access port are set into the concrete apron extensions near the corners of the [redacted] launch pad plus apron. Subsurface propellant lines lead from these access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of [redacted] 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by a three-bay and a five-bay garage. Underground GSE storage is provided by two propellant storage caves, one other GSE storage cave with blast doors, and a probable drive-through tunnel. The propellant storage caves are 118 meters east and 115 meters west of the launch pad. The probable drive-through tunnel is approximately 430 meters west of the launch pad. Narrow-gauge rails have not been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 142 meters apart.

Other Storage

4. (S/D) A POL storage bunker is 800 meters west of the launch pad.

Barracks and Housing Areas

5. (S/D) The housing/support area is spaced along the entire site access road. The area contains a total of 2,234 square meters of floorspace in 15 separate buildings. The housing area appears to support four company-sized units. There are four messhalls and four basketball courts, one for each unit. The housing area also contains three other support buildings, two of which are possibly family quarters.

Construction Status

6. (S/D) Construction of Launch Site Garrison 9 began between May 1966 and May 1967. The launch pad was probably constructed in late 1968. Construction of subsurface propellant lines was discernible in November 1970. Few changes were observed until 1972 when, just after GSE was first identified, nine new buildings were added to the housing area. Refurbishment or replacement of both propellant pipelines was observed in late 1973. The POL storage bunker, some new housing buildings, and the three-bay garage were added in 1974 and 1975. Since that time, no new construction has been observed.

Missile System Association and Activity

7. (S/D) The launch pad was usable in February 1969. Some vehicles were in the garrison in July 1971, but CSS-2 GSE could not be confirmed until July 1972. In September 1972, major elements of two CSS-2 launch units were observed at the garrison. Since 1972, CSS-2 GSE has been observed on numerous dates through June 1980, the date of the latest imagery.

[redacted] 25X1

TONGHUA SSM LAUNCH SITE GARRISONS 11, 12, 13, AND 14
LAUNCH GROUP C
TONGHUA MISSILE LAUNCH COMPLEX SSM (S)

ABSTRACT

1. (S/D) Launch Site Garrisons 11, 12, 13, and 14 are component parts of Launch Group C, Tonghua Missile Launch Complex SSM. Each launch site garrison is in a forested stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas. Each launch area contains a launch pad and a missile loading apron. Subsurface propellant lines connect the launch pad to propellant storage caves. The principal GSE storage areas are a probable drive-through tunnel and two propellant storage caves. Construction at these garrisons began in early 1967 and continued sporadically through 1977. The launch pad at Launch Site Garrison 12 had been completed for contingency missile firings by early 1969. No system-related missile GSE has been observed at the garrisons; however, probable communications vehicles were at Launch Site Garrison 14 in September 1975. Two sets of communications vehicles were observed in the propellant storage area throughout most of 1978 and 1979.

INTRODUCTION

2. (S/D) Launch Site Garrisons 11, 12, 13, and 14 are the four type C missile support bases in Launch Group C, Tonghua Missile Launch Complex SSM. The layout of Launch Group C, which is also designated Regiment 3 of this complex, is shown on the facing page (Figure 12). In addition to the four launch site garrisons, Launch Group C contains a probable launch complex garrison (not separately targeted), which is a type B missile support base; Tonghua Propellant Storage Area 3 (, and the specialized and general support areas of a regiment-level headquarters. A hardened command post for Tonghua SSM Regiment Headquarters 3 (not separately targeted) is the northernmost support area. An old command post and a probable communications facility are in two caves on the western edge of the central support area (formerly Tonghua SSM Launch Site 3, A temporary administration building, an auditorium, and the family housing areas for the regiment-level headquarters are also in the centrally located support area. 25X1 25X1

Analyst's Comments

3. (S/D) Two sets of communications vehicles were parked in the propellant storage area of Launch Group C in 1978 and 1979. In August 1979, a garage to store these vehicles was constructed. One of the two sets of vehicles was observed deployed in the storage area during May 1979. When deployed, two of the three trucks are parked back-to-back. A probable set of communications vehicles was at Launch Site Garrison 14 in September 1975. These observations of GSE provide some evidence that missile equipment has been stored at the bases in Launch Group C. The communications vehicles are not indicators of a particular missile system. They are observed with CSS-1 MRBM and CSS-2 IRBM launch units and at the CSS-3 ICBM silos. The communications vehicles are also observed in the vicinity of hardened SSM command posts and communications bunkers.

4. (S/D) Launch Group C is served by the Tonghua SSM Rail-to-Road Transfer Point 3 (RTP; BE which is approximately 50 kilometers south of the launch group. CSS-1 GSE and probably SRBM GSE have been observed at SSM RTP 3 since January 1976. 25X1

5. (S/D) Imagery acquired during the past year (1979-1980) showed that from 20 to 30 percent of the housing buildings at these launch site garrisons probably were unoccupied. In the winter snow was not removed, and in the summer vegetation was overgrowing the housing buildings. Most of the permanent barracks, support buildings, and GSE storage facilities were built in the early 1970s. Construction workers used all of the permanent buildings, including the garages as well as some temporary buildings for living quarters. Most of the buildings were renovated after the construction workers departed; however, some of the GSE garages were not renovated and may not be usable for vehicle storage.

6. (S/D) There is good photographic coverage of launch site garrisons in Launch Group C during the middle and late stages of construction. The two propellant storage caves at launch site garrisons are usually built inside caves excavated from the surrounding mountainside. At Launch Site Garrison 11, one of the propellant storage caves was built in an open excavation.

7. (S/D) Launch Site Garrison 13 contains four propellant storage caves instead of two. Larger tanks than the standard size missile propellant tanks have been installed in two of the caves. Launch Site Garrison 13 also contains a POL storage bunker so that the purpose of the extra tanks and storage caves at this garrison has not been determined. A common pipeline and dispensary serves both caves with the larger than the standard size tanks.

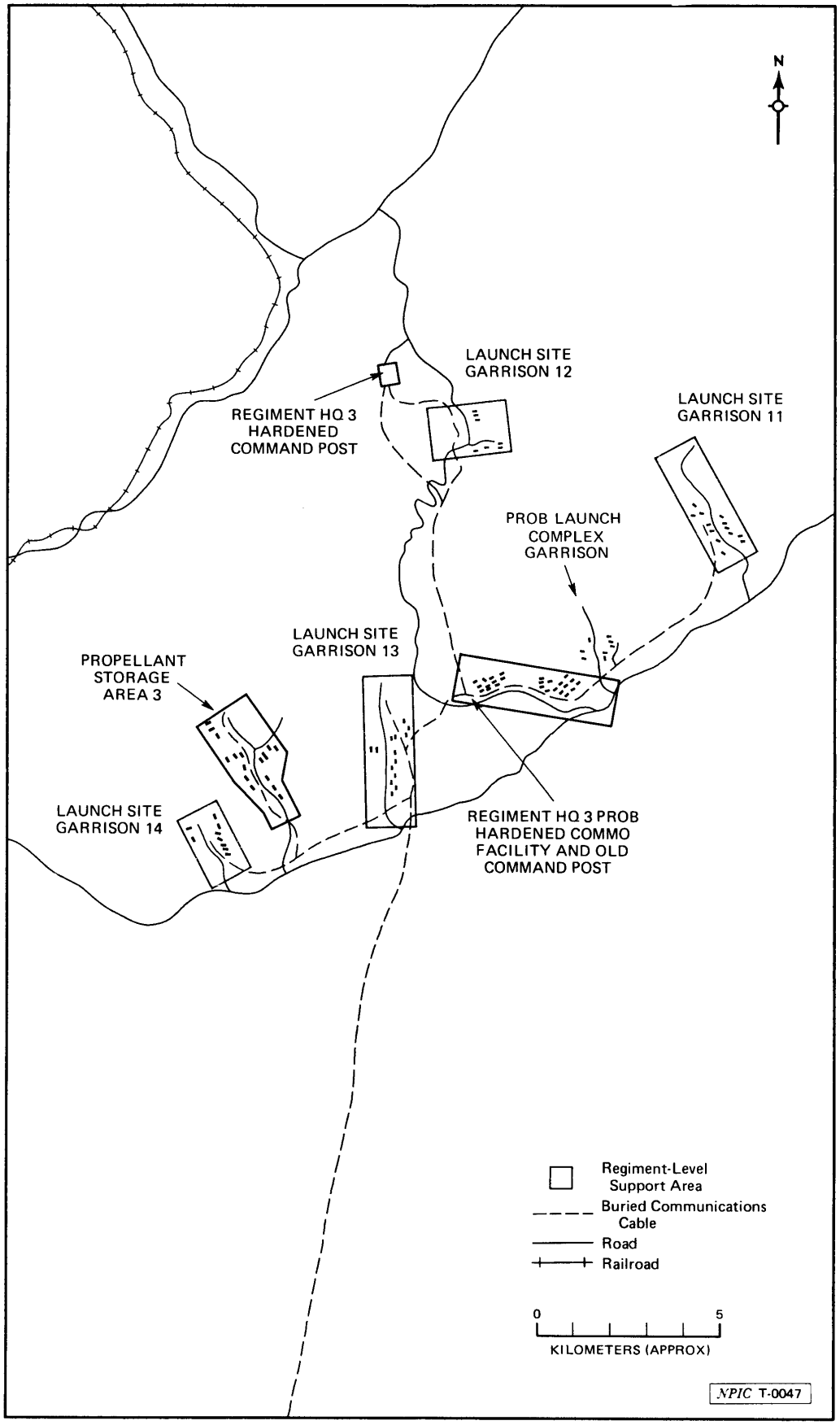

FIGURE 12. LAUNCH GROUP C (REGIMENT 3), TONGHUA MISSILE LAUNCH COMPLEX SSM

INSTALLATION OR ACTIVITY NAME					COUNTRY
Tonghua SSM Launch Site Garrison 11					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	42-05-39N 126-02-34E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0290-12, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Feb 68

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 11 (Figure 13) is one of the four launch site garrisons in Launch Group C. The garrison is approximately 55 kilometers by road from the SSM RTP 3 and is in a forested valley. The garrison consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports are set into the concrete apron extensions near the corners of the [redacted] launch pad plus apron. Subsurface propellant lines lead from these access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of [redacted] degrees. 25X1 25X1 25X1.1

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by a three-bay and a five-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 180 meters north-northeast and 150 meters west of the launch pad. A probable drive-through tunnel is approximately 675 meters south of the launch pad. Narrow-gauge rails have not been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 123 meters apart.

Other Storage

4. (S/D) A POL storage bunker is 375 meters south of the launch pad.

Barracks and Housing Areas

5. (S/D) The barracks and housing area is near the entrance to the valley. Launch Site Garrison 11 contains 1,281 square meters of barracks floorspace for two company-sized units. There are two messhalls and two basketball courts. There are also three support buildings, one of which is probably for family quarters.

Construction Status

6. (S/D) Construction of Launch Site Garrison 11 began between February and May 1968. Ten horizontal propellant storage tanks were identified in 1971 and 1972 near the propellant storages caves. Nine tanks had apparently been installed in the storage caves by August 1974. One of the propellant storage structures was built within an excavation and covered with earth. The launch pad was constructed in 1972, and the pad extensions were added in 1975. The propellant lines and the garrison were complete by September 1977. An underground communications cable linking this garrison with other SSM-related facilities within the Tonghua complex was completed in September 1976.

Missile System Association and Activity

7. (S/D) A truck-mounted crane and two cargo trucks were observed on the access road in September 1977. Cargo trucks have been observed on several occasions. Construction workers had left the garrison by May 1978, and permanent security had probably been established by that date.

[redacted] 25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Tonghua SSM Launch Site Garrison 12					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	42-06-12N 125-58-17E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0290-12, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	May 67

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 12 (Figure 14) is one of the four launch site garrisons in Launch Group C. The garrison is approximately 57 kilometers by road from the SSM RTP 3 and is in a forested valley. The garrison consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports are set into the concrete apron extensions near the corners of the [redacted] launch pad plus apron. Subsurface propellant lines lead from these access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of [redacted] degrees. 25X1 25X1 25X1.1

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by a five-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 107 meters east and 170 meters west of the launch pad. A probable drive-through tunnel is approximately 480 meters southwest of the launch pad. Narrow-gauge rails have been identified extending from the northernmost tunnel entrance. The entrances to the tunnel are 162 meters apart.

Other Storage

4. (S/D) A POL storage bunker is approximately 425 meters southwest of the launch pad.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are near the valley entrance and 225 meters east of the launch pad. Launch Site Garrison 12 contains 1,267 square meters of barracks floorspace for two company-sized units. There are two messhalls and one basketball court. There is space prepared for a second basketball court, but no backboards have been installed. The garrison also contains a building with quarters for four families.

Construction Status

6. (S/D) Construction of Launch Site Garrison 12 began between May and August 1967. The launch pad was already complete by early 1969. The launch pad extensions, loading apron, and subsurface propellant lines were observed under construction in September 1974. Ten horizontal propellant tanks were observed near the propellant storage caves, five in June 1971. All of the tanks had apparently been installed in the storage caves by November 1974. The subsurface propellant lines were complete by November 1975. Refurbishment or replacement of these propellant pipelines was observed in May 1976 and was complete by March 1977. The garrison appeared to be complete in late 1977. An underground communications cable linking this garrison with other SSM-related facilities within the Tonghua complex was completed in September 1976.

Missile System Association and Activity

7. (S/D) No SSM or SSM-related equipment has been observed at this launch site garrison. Small numbers of cargo trucks have been observed. The launch pad was usable for contingency missile firings in 1969. Construction workers had left the garrison by May 1978, and permanent security had probably been established by that date.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Tonghua SSM Launch Site Garrison 13					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	42-06-12N 125-56-42E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0290-12, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Feb 68

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 13 (Figure 15) is one of the four launch site garrisons in Launch Group C. The garrison is approximately 40 kilometers by road from the SSM RTP 3 and is in a forested valley. The garrison consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports are set into the concrete apron extensions near the corners of the [redacted] launch pad plus apron. Subsurface propellant lines lead from these access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of 165 degrees. 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by a three-bay and a five-bay garage. Underground GSE storage is provided by two propellant storage caves, two probable propellant storage caves, and a probable drive-through tunnel. The propellant storage caves are 102 meters north and 87 meters south of the launch pad. The two probable propellant storage caves as well as a separate cave with only a personnel entrance are immediately west of the housing area. The probable drive-through tunnel is approximately 157 meters north of the launch pad. Narrow-gauge rails have not been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 132 meters apart.

Other Storage

4. (S/D) A POL storage bunker is 125 meters south-southwest of the launch pad.

Barracks and Housing Areas

5. (S/D) The barracks and housing area is at the entrance to the valley. Launch Site Garrison 13 contains 1,287 square meters of barracks floorspace for two company-sized units. There are a messhall and a basketball court. An unfinished messhall and a basketball court were observed, but construction has been suspended.

Construction Status

6. (S/D) Construction of Launch Site Garrison 13 began between February and May 1968. The [redacted] square launch pad was constructed under a shed in September 1972. Construction on one of the surface propellant lines was first observed in June 1974. The launch pad extensions and both propellant lines were completed in 1975. Construction on the probable propellant storage caves was first seen in November 1975, and the caves were complete by December 1978. The garrison was also complete by December. An underground communications cable linking this garrison with other SSM-related facilities in the Tonghua complex was constructed in July 1972. 25X1

Missile System Association and Activity

7. (S/D) No SSM or SSM-related equipment has been observed at this launch site garrison. Small numbers of cargo trucks have been observed. The launch pad has been usable for contingency missile launches since late 1972. Construction workers left the garrison in late 1978, and permanent security had probably been established shortly thereafter, in early 1979.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Tonghua SSM Launch Site Garrison 14					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	42-02-18N 125-52-57E				25X1

MAP REFERENCE

SAC, USATC, Series 200, Sheet 0290-12, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	May 68

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 14 (Figure 16) is one of the four launch site garrisons in Launch Group C. The garrison is approximately 38 kilometers by road from SSM RTP 3 and is in a forested valley. The garrison consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [ ] launch pad with a [ ] concrete apron extension on all four sides. Two propellant access ports and a probable utilities access port are set into the concrete apron extensions near the corners of the [ ] launch pad plus apron. Subsurface propellant lines lead from these access ports to propellant storage caves. The missile loading apron is [ ] meters with a loading azimuth of [ ] 25X1 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by a five-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 94 meters northeast and 104 meters west-southwest of the launch pad. A probable drive-through tunnel is approximately 982 meters south of the launch pad. Narrow-gauge rails have not been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 151 meters apart.

Other Storage

4. (S/D) A POL storage bunker is 750 meters south of the launch pad.

Barracks and Housing Areas

5. (S/D) The barracks and housing area is near the entrance to the valley. Launch Site Garrison 14 contains 1,086 square meters of barracks floorspace for two company-sized units. There are two messhalls, two basketball courts, and two support buildings, one of which is probably for family quarters.

Construction Status

6. (S/D) Construction of Launch Site Garrison 14 began between May and September 1968. The launch pad was first observed in January 1972, although it was probably constructed in late 1971. Construction of the subsurface propellant lines was first seen in June 1971. Ten horizontal propellant storage tanks were observed in June 1971 and had apparently been installed in the storage caves by August 1972. Both propellant lines were complete by November 1975, and construction at the garrison was complete by early 1976. An underground communications cable linking this garrison with other SSM-related facilities within the Tonghua complex was present in August 1972.

Missile System Association and Activity

7. (S/D) A three-vehicle probable communications set was present at this garrison in June 1975. No other SSM-associated equipment has been observed. Construction has been complete since early 1976, and construction workers left the garrison by the end of that year.

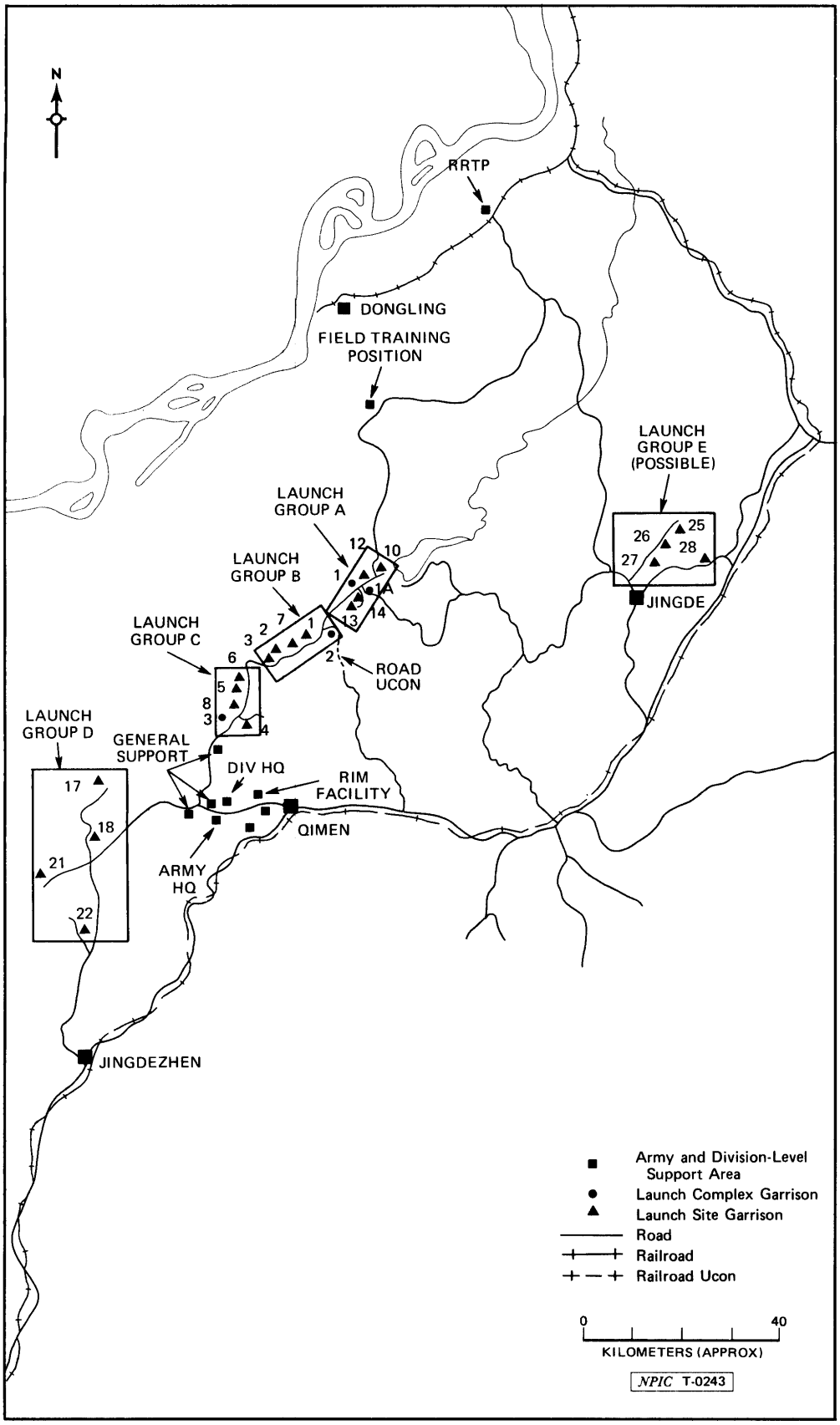

FIGURE 1. LIANXIWANG MISSILE LAUNCH COMPLEX SSM, CHINA

LIANXIWANG MISSILE LAUNCH COMPLEX SSM (S)

1. (S/D) The Lianxiwang Missile Launch-Complex SSM (Figure 1) is in east-central China 160 kilometers (km) south-southwest of Nanjing in Anhwei Province. The complex is in a mountainous area of narrow valleys and steep ridges. Although the general area is accessible by rail, road, and water, the complex itself is served only by road, and during construction could only be reached from the north. The nearest rail line to the north is at the town of Dongling, 75 km away. Another rail line is under construction across the eastern edge of the complex. Port facilities along the Yangtze River are 50 km northwest of the complex. 25X1

2. (S/D) The complex contains 16 launch site garrisons (type C missile support bases) divided into four launch groups (A through D). Four possible launch site garrisons which would constitute a fifth launch group (group E), a field training position (Lianxiwang Field Training Position, 25X1 a rail-to-road transfer point (RTP; Lianxiwang SSM RTP, , a receiving, inspection, and 25X1 maintanence (RIM) facility (Lianxiwang SSM RIM Facility, , a division headquarter 25X1 (Lianxiwang Division Headquarters, 25X1 and an army headquarters (Lianxiwang Army Headquarters, have also been identified 25X1

3. (S/D) Construction at the complex was started between September 1965 and January 1967. The first launch complex garrison (a type B missile base) was completed in 1967. The first launch site garrison (a type C missile support base) was initially complete by December 1970, and some of the launch areas were usable by late 1968-1969. Launch Group E which was still under construction is considered a possible launch group.

4. (S/D) SSM ground support equipment (GSE) has been observed consistently at the complex since early 1972. CSS-1 GSE was first discernible in February 1972, followed by the first observation of CSS-2 GSE in August 1972. Poor resolution and infrequent photographic coverage precluded identification of missile equipment prior to 1972.

5. (S/D) Large numbers of construction workers were still at the complex in 1980. It is likely that additional facilities will be constructed.

LIANXIWANG SSM LAUNCH SITE GARRISONS 10, 12, 13, AND 14
LAUNCH GROUP A
LIANXIWANG MISSILE LAUNCH COMPLEX SSM

ABSTRACT

1. (S/D) Launch Site Garrisons 10, 12, 13, and 14 are component parts of Launch Group A, Lianxiwang Missile Launch Complex SSM. Each launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas. Each launch area contains a launch pad with concrete extensions on all four sides and a missile loading apron. No subsurface propellant lines have been constructed to connect the launch pad to propellant storage caves. The principal GSE storage is provided by a probable drive-through tunnel and two propellant storage caves, but each garrison also contains a missile checkout/storage building and garages. Each launch pad was first usable in 1968-1969. Missile GSE was not observed at the garrisons until 1976 but was present in nearby support areas in 1972 and probably as early as 1968-1969.

INTRODUCTION

2. (S/D) Launch Site Garrisons 10, 12, 13, and 14 are the four type C missile support bases in Launch Group A, Lianxiwang Missile Launch Complex SSM. The layout of Launch Group A, which is also designated Regiment 1 of this complex, is shown on the facing page (Figure 2). In addition to the four launch site garrisons, Launch Group A contains Lianxiwang Launch Complex Garrisons 1 and 1A (BE [redacted] which are considered together as one type B missile support base; a propellant storage area (Lianxiwang Propellant Storage Area 1, [redacted] and the specialized and general support areas of a regiment-level headquarters. A probable hardened command post for the regiment-level headquarters is in a valley spur of Propellant Storage Area 1. The probable hardened command post has not yet been separately targeted. 25X1 25X1

Analyst's Comments

3. (S/D) In 1968 and 1969, the four launch site garrisons in Launch Group A were readied for contingent missile launch operations. Between February 1969 and December 1970, a launch pad and permanent barracks were constructed at each launch site garrison. A missile checkout/storage building was constructed earlier (in 1968) at each of the garrisons.

4. (S/D) Missile equipment was present in the support areas of Launch Group A and Complex Garrison 1 in mid-1972, on the earliest photographic coverage available with enough resolution to identify such equipment. It is likely that GSE was present much earlier, perhaps as early as 1966 or 1967, when the RTP and some missile checkout/storage buildings were first complete.

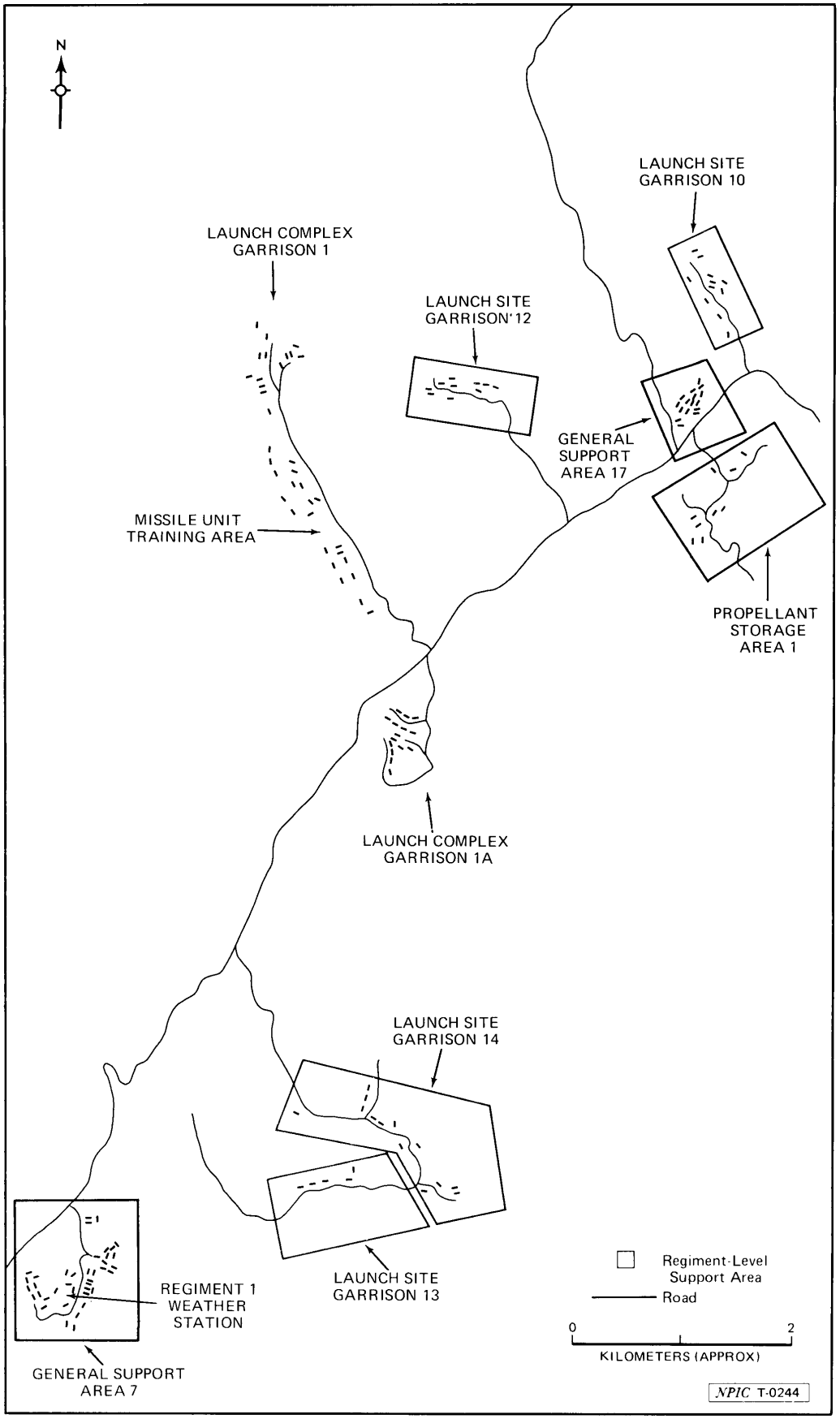

FIGURE 2. LAUNCH GROUP A (REGIMENT 1), LIANXIWANG MISSILE LAUNCH COMPLEX SSM

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 10					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	30-21-17N 117-54-54E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-14, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Sep 65

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 10 (Figure 3) is one of the four launch site garrisons in Launch Group A. The launch site garrison is approximately 118 kilometers (km) by road from the SSM RTP and approximately 100 km from the SSM RIM Facility. The garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [ ] launch pad with a [ ] concrete apron extension on all four sides. Two propellant access ports and one utilities access port are set into the concrete apron extensions near the corners of the [ ] launch pad plus apron. Subsurface propellant lines have not been identified. The missile loading apron is [ ] with a loading azimuth of [ ] 25X1 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of a missile checkout/storage building and a two-bay, a three-bay, and a six-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 90 meters and 150 meters south of the launch pad, and the probable drive-through tunnel is approximately 50 meters southeast of the launch pad. Narrow-gauge rails on a concrete apron extend from both entrances to the probable drive-through tunnel. The entrances to the tunnel are 130 meters apart.

Other Storage

4. (S/D) No POL storage bunker has been identified at this launch site garrison.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are clustered at the head of the valley and along the garrison access road. Launch Site Garrison 10 contains 864 square meters of barracks floorspace for one company-sized unit. The launch site garrison contains a messhall, a basketball court, and a separate single-family quarters. Additional housing is between Launch Site Garrisons 10 and 12 (at Lianxiwang General Support Area 17, [ ] and is probably shared by both garrisons. If so, each garrison would have space for two company-size units, rather than one. 25X1

Construction Status

6. (S/D) Construction of Launch Site Garrison 10 had begun by mid-1966. The missile checkout/-storage building was complete by 1967. The launch pad was completed between October 1968 and February 1969. Construction of the underground storage areas continued through early 1970. No new construction has been started since the building of additional housing facilities in mid-1972.

Missile System Association and Activity

7. (S/D) Construction was complete, security had been established, and the barracks were occupied when the garrison was first observed on high-resolution photography in September 1972. The security guardpost was realigned in early 1975. Missile GSE was first observed between August and September 1978 when both the transporter and transporter-erector for a CSS-2 launch unit were observed. Very little GSE has been observed since 1978, and the equipment identified did indicate which missile system was present. A warhead van has been observed on several dates, as recently as May 1980.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 12					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	30-20-46N 117-53-08				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-14, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Sep 65

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 12 (Figure 4) is one of the four launch site garrisons in Launch Group A. The launch site garrison is approximately 118 kilometers (km) by road from the SSM RTP and approximately 96 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports are set into the concrete apron extensions near the corners of the [redacted] launch pad plus apron. Subsurface propellant lines have not been identified. The missile loading apron is approximately [redacted] with a loading azimuth of 70 degrees. 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage eonsists of a missile checkout/storage building and a two-bay, a three-bay, and a six-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 50 meters south and 100 meters southeast of the launch pad, and the probable drive-through tunnel is approximately 150 meters east of the launch pad. Narrow-gauge rails on a concrete apron extend from both entrances to the probable drive-through tunnel. The entrances to the tunnel are 180 meters apart.

Other Storage

4. (S/D) No POL storage bunker has been identified at this launch site garrison.

Barracks and Housing Areas

5. (S/D) The barracks and housing area is clustered at the head of the valley. Launch Site Garrison 12 contains 1,011 square meters of barracks floorspace for one company-sized unit. This launch site garrison contains a messhall, a basketball court, and a separate single-family quarters. Additional housing is between Launch Site Garrisons 10 and 12 (at General Support Area 17) and is probably shared by both garrisons. If so, each garrison would have space for two company-sized units, rather than one.

Construction Status

6. (S/D) Construction of Launch Site Garrison 12 had begun by mid-1966. The missile checkout/-storage building was complete by 1967. The launch pad was completed between October 1968 and February 1969. Construction of the underground storage areas continued through early 1970. No new construction has been started since the building of additional barracks in late 1972.

Missile System Association and Activity

7. (S/D) Construction was complete, security had been established, and the barracks were occupied when the garrison was first observed on high-resolution photography in September 1972. The security guardpost was relocated in October 1975 and again in October 1976. The first GSE observed was seen in October 1976 when fuel trucks for a CSS-1 launch unit were observed. It is possible that this equipment was not related to the garrison and was in transit. Oxidizer vehicles and other elements of a CSS-1 unit were observed at the same time in support areas of the launch group. No other missile equipment was observed until May 1980 when a CSS-2 transporter was identified along with two other related pieces of GSE.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 13					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	30-15-14N 117-49-54E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-14, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Sep 65

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 13 (Figure 5) is one of the four launch site garrisons in Launch Group A. The launch site garrison is approximately 140 kilometers (km) by road from the SSM RTP and approximately 86 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. No subsurface propellant lines have been identified. The missile loading apron is [redacted] with a loading azimuth of [redacted] 25X1 25X1.1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of a missile checkout/storage building and a two-bay, a three-bay, and a six-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 100 meters west and 150 meters east of the launch pad, and the probable drive-through tunnel, which is shared with Launch Site Garrison 14, is approximately 50 meters east of the launch pad. Narrow-gauge rails on a concrete apron extend from both entrances to the probable drive-through tunnel. The entrances to the tunnel are 365 meters apart.

Other Storage

4. (S/D) No POL storage bunker has been identified at this launch site garrison.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are spread along a U-shaped valley in which Launch Site Garrisons 13 and 14 are located. Additional barracks areas are in side valleys that branch off from the U-shaped valley. Launch Site Garrison 13 contains 1,355 square meters of barracks floorspace for two company-sized units. The garrison contains two messhalls and two basketball courts, one for each unit.

Construction Status

6. (S/D) Construction of Launch Site Garrison 13 had begun by mid-1966. The missile checkout/-storage building was complete by 1967. The launch pad was completed between October 1968 and February 1969. Construction of the underground storage areas continued through mid-1970. No new construction has been started since the refurbishment of housing facilities in late 1974.

Missile System Association and Activity

7. (S/D) Construction was complete, security had been established, and the barracks were occupied when the garrison was first observed on medium- and high-resolution photography in August 1972. No missile GSE was observed, however, until 1977. In March, the guardpost was rebuilt; in September 1977, CSS-1 GSE, which included a transporter-erecter, was observed. Sporadic observations of GSE from 1977 to 1980 have all been related to the CSS-1 system.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 14					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	30-15-38N 117-50-12E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-14, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Sep 65

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 14 (Figure 6) is one of the launch site garrisons in Launch Group A. The launch site garrison is approximately 139 kilometers (km) by road from the SSM RTP and approximately 85 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron. No subsurface propellant lines have been identified. The missile loading apron is [redacted] with a loading azimuth of [redacted] 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of a missile checkout/storage building and two two-bay, a three-bay, and a six-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 150 meters west and 50 meters east of the launch pad, and the probable drive-through tunnel, which is shared with Launch Site Garrison 13, is approximately 1,000 meters southeast of the launch pad. Narrow-gauge rails on a concrete apron extend from both entrances to the probable drive-through tunnel. The entrances to the tunnel are 365 meters apart.

Other Storage

4. (S/D) No POL storage bunker has been identified at this launch site garrison.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are spread along a U-shaped valley which contains both Launch Site Garrisons 13 and 14. Additional barracks areas are in two side valleys that branch off from the U-shaped valley. Launch Site Garrison 14 contains 1,610 square meters of barracks floorspace for two company-sized units. There are two messhalls and two basketball courts, one for each unit.

Construction Status

6. (S/D) Construction of Launch Site Garrison 14 began by mid-1966. The missile checkout/storage building was complete by 1967. The launch pad was completed between October 1968 and February 1969. Construction of the underground storage areas continued through mid-1970. No new construction has been started since the building of additional housing facilities in late 1974.

Missile System Association and Activity

7. (S/D) Construction was complete, security had been established, and the barracks were occupied when the garrison was first observed on medium- and high-resolution photography in August 1972. There were also vehicular tracks leading into the missile/checkout storage building. No missile GSE was observed, however, until 1977. In September, CSS-1 GSE, which included a transporter-erector, was observed. Sporadic observations of GSE from 1977 to 1980 have all been related to the CSS-1 system.

LIANXIWANG SSM LAUNCH SITE GARRISONS 1, 2, 3, AND 7
LAUNCH GROUP B
LIANXIWANG MISSILE LAUNCH COMPLEX SSM (S)

ABSTRACT

1. (S/D) Launch Site Garrisons 1, 2, 3, and 7 are component parts of Launch Group B, Lianxiwang Missile Launch Complex SSM. Each launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas. Each launch area contains a launch pad with concrete extensions on all four sides and a missile loading apron. Subsurface propellant lines connect the launch pad to propellant storage caves. The principal GSE storage is provided by a probable drive-through tunnel and two propellant storage caves. The launch pads were first usable in 1969-1970. Construction at these garrisons continued through 1971 and was then suspended. Missile GSE was first observed in February 1972. Construction to upgrade and complete the garrisons was renewed in 1974 and has only been recently completed in 1980.

INTRODUCTION

2. (S/D) Launch Site Garrisons 1, 2, 3, and 7 are the four type C missile support bases in Launch Group B, Lianxiwang Missile Launch Complex SSM. The layout of Launch Group B, which is also designated Regiment 2 of this complex, is shown on the facing page (Figure 7). In additon to the four launch site garrisons, Launch Group B contains Lianxiwang Launch Complex Garrison 2 (25X1
a type B missile support base; a propellant storage area (Lianxiwang Cave Storage Area, BE 25X1
and the specialized and general support areas of a regiment-level headquarters. A possible 25X1
hardened command post for the regiment-level headquarters is opposite Launch Site Garrison 7 in a portion of Lianxiwang General Support Area 18 Lianxiwang Propellant Storage Area 2 25X1
has been identified as the easternmost barracks area for Launch Site Garrison 2 and, at 25X1
the easternmost end of the valley, contains a possible hardened communications facility or command post for the Regiment 2 headquarters. The Regiment 2 headquarters administration building is in the northern portion of the launch group in an area currently targeted as Lianxiwang General Support Area 6 (BE
25X1

Analyst's Comments

3. (S/D) In 1968 and 1969, the four launch site garrisons in Launch Group B were readied for contingency missile launch firings. Between February 1969 and December 1970, a launch pad and permanent barracks were constructed at each site garrison. A missile checkout/storage building was constructed at one garrison, and some garages were complete at three of the garrisons.

4. (S/D) Construction at these garrisons was suspended in late 1971, at the point where most of the underground facilities were complete but before propellant pipelines and propellant tanks were installed. It appears that the CSS-2 deployment program (started in 1970) did not progress as rapidly as perhaps first intended. CSS-1 equipment was seen at two garrisons in Launch Group B shortly after work was suspended. In 1974 when work was resumed to complete the propellant lines and propellant storage areas and to refurbish the garrisons, CSS-2 equipment was first identified. Only CSS-2 equipment has been observed since late 1974.

5. (S/D) Among the missile equipment observed at launch site garrisons in Launch Group B, some provided unique and important new information about equipment complements in a missile launch unit. Two CSS-1 missile transporters were observed with one transporter-erector during a unit exercise at Launch Site Garrison 3 in August 1974. The observation is evidence that some launch units have a backup missile and/or a refire capability. A transporter-erector was in use at the launch pad but was positioned on the earthen apron instead of on the concrete loading apron. This suggests that the CSS-1 may have to be oriented within 45 degrees of the intended firing azimuth while on the transporter-erector. Lesser adjustments would be made when the missile is on the launch stand. A three-vehicle communications set was observed with a CSS-1 unit as early as September 1972. A missile/checkout tent was erected at Lanch Site Garrison 7 to support CSS-2 launch unit exercises in both 1979 and 1980.

6. (S/D) The trend toward constructing most new barracks areas outside the garrison security gate was also observed in Launch Group B.

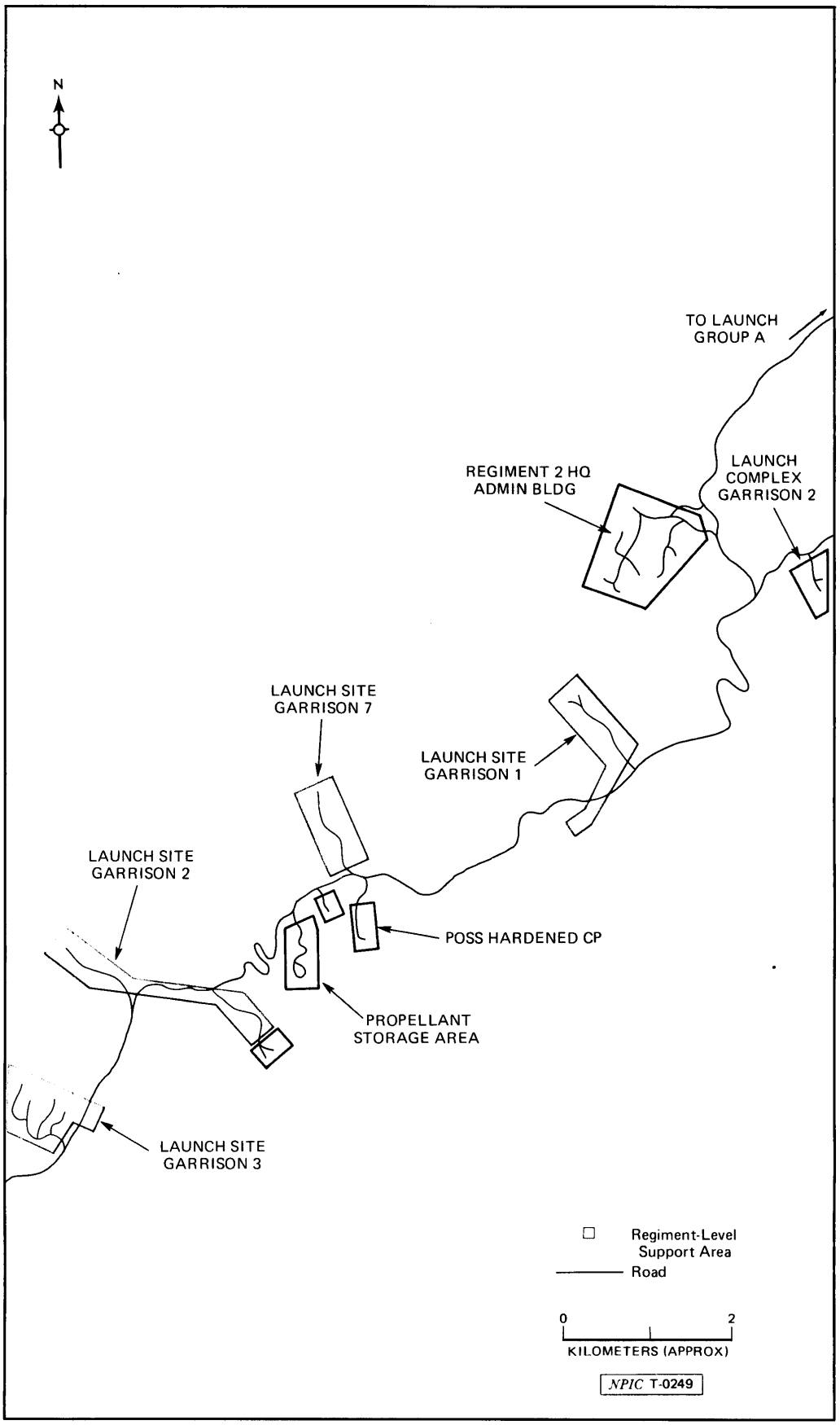

FIGURE 7. LAUNCH GROUP B (REGIMENT 2), LIANXIWANG MISSILE LAUNCH COMPLEX SSM

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 1					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	30-12-28N 117-44-30E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-14, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)	
		25X1.1

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 1 (Figure 8) is one of the four launch site garrisons comprising Launch Group B. The garrison is approximately 156 kilometers (km) by road from the SSM RTP and approximately 80 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports and one utilities access port are set into the concrete apron extensions near the corners of the [redacted] launch pad plus apron. Subsurface propellant lines lead from two of these access ports to propellant storage caves. A buried cable extends from the utilities access port to the southeast entrance to the probable drive-through tunnel. This end of the probable drive-through tunnel may serve as a connection point for an intrasite buried cable network. The missile loading apron is [redacted] with a loading azimuth of 55 degrees. 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) No surface GSE storage buildings have been identified at this launch site garrison. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are approximately 80 and 160 meters southeast of the launch pad, and a probable drive-through tunnel is approximately 100 meters northwest of the launch pad. Possible narrow-gauge rails on concrete aprons have been identified extending from both entrances to the probable drive-through tunnel. The entrances to the tunnel are 170 meters apart.

Other Storage

4. (S/D) A [redacted] POL storage bunker has been constructed at the end of the launch pad access road next to the barracks and housing areas. 25X1

Barracks and Housing Areas

5. (S/D) The barracks and housing areas for this launch site garrison are clustered at the head of the valley and approximately 800 meters west of the junction of the garrison and the complex access road. The second housing area, just outside a local village, has the same construction chronology and history of refurbishment as the housing within the security gate. Launch Site Garrison 1 contains 950 square meters of barracks floorspace divided into areas for two company-sized units. There are two messhalls and two basketball courts, one for each unit. The launch site garrison also contains one single-family quarters building.

Construction Status

6. (S/D) Construction of Launch Site Garrison 1 began between January and August of 1967. The launch pad was completed between February 1969 and December 1970, and the launch area was usable. Construction on the caves and tunnel was complete by February 1972. No changes were observed until 1974. Upgrading began between August and November 1974 and continued until completion between October and December 1977. The upgrading consisted of installing propellant lines and tanks, building the POL storage bunker, and refurbishing the housing area. No new construction has been observed.

Missile System Association and Activity

7. (S/D) The first observed missile GSE at Launch Site Garrision 1 was seen on [redacted] when CSS-2 propellant vehicles or control/alignment vans were identified. The major pieces of equipment for a CSS-2 launch unit, including a transporter-erector, were observed on [redacted] CSS-2 equipment continued to be observed at this garrison as recently as [redacted] 25X1 25X1 25X1 25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 2					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	30-10-48N 117-39-35E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-14, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)	
		25X1

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 2 (Figure 9) is one of the launch site garrisons in Launch Group B. It is approximately 163 kilometers (km) by road from the SSM RTP and approximately 70 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a launch pad with a concrete apron extension on all four sides. Two propellant access ports and one utilities access port are set into the apron extensions near the corners of the launch pad plus apron. Subsurface propellant lines lead from two of these access ports to propellant storage caves. The missile loading apron is with a loading azimuth of 25X1 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of one six-bay vehicle storage building. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are approximately 100 and 200 meters east of the launch pad. A probable drive-through tunnel is approximately 200 meters west of the launch pad. Possible narrow-gauge rails on concrete aprons heve been identified extending from both entrances to the probable drive-through tunnel. The entrances to the tunnel are 170 meters apart.

Other Storage

4. (S/D) A camouflaged, bunkered POL storage building with a vehicle ramp extending to the roof of the building is along the launch pad access road. 25X1

Barracks and Housing Areas

5. (S/D) The barracks and housing buildings for this launch site are clustered at the head of the valley and across the main complex road in a portion of what is presently targeted as Propellant Storage Area 2. Launch Site Garrision 2 contains 1,068 square meters of barracks floorspace divided into two areas for two company-size units. There are two messhalls and two basketball courts.

Construction Status

6. (S/D) Construction of Launch Site Garrison 2 began between January and August 1967. The launch pad was completed between February 1969 and December 1970. Construction of the caves and tunnels was complete by February 1972. Upgrading began between September and December 1974. The upgrading consisted of installing propellant lines and tanks, building the POL storage bunker, and refurbishing the housing area. No new construction has been observed since 1977.

Missile System Association and Activity

7. (S/D) The first observed missile GSE at Launch Site Garrison 2 was seen on By July, the equipment was confirmed as CSS-1 system associated which often appeared to be in use in concert with exercise activity at Launch Site Garrison 3. CSS-1 GSE continued to be observed through September 1974. Since that time, no missile GSE has been observed. 25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 3					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	30-09-16N 117-38-47E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-13, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)	
		25X1

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 3 (Figure 10) is one of the four launch site garrisons in Launch Group B. The garrison is approximately 166 kilometers (km) by road from the SSM RTP and approximately 67 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [ ] launch pad with a [ ] concrete apron extension on all four sides. Two propellant access ports and one utilities access port are set into the eoncrete apron extensions near the corners of the [ ] launch pad plus apron. Subsurface propellant lines lead from two of these access ports to propellant storage caves. The concrete missile loading apron is [ ] meters with a loading azimuth of 55 degrees. 25X1 25X1 25X1

GSF Storage Areas

3. (S/D) Surface GSE storage consists of a six-bay garage and a two-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are approximately 80 meters northeast and 10 meters southwest of the launch pad. The probable drive-through tunnel is approximately 60 meters northwest of the launch pad. No narrow-gauge rails have been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 250 meters apart.

Other Storage

4. (S/D) A [ ] camouflaged, bunkered POL storage building with a vehicle ramp extending to the roof of the building is along the garrison access road. 25X1

Barracks and Housing Areas

5. (S/D) The barracks and housing buildings for this launch site garrison are dispersed in two of four finger valleys which make up this launch site garrison and approximately 300 meters east of the junction of the launch site garrison and complex access roads. The second housing area has the same construction chronology and history of refurbishment as that of the housing areas within the security gate. Launch Site Garrison 3 contains 1,306 square meters of barracks floorspace divided into areas for two company-sized units. There are two messhalls and two basketball courts, one for each unit. The garrison also contains one separate single-family quarters building.

Construction Status

6. (S/D) Construction of Launch Site Garrison 3 began between January and August 1967. The launch pad was completed between February 1969 and December 1970, and the launch area was usable. Construction of the caves and tunnel was complete by February 1972. Upgrading began between September and December 1974 and was completed between September and December 1977. The upgrading consisted of installing propellant lines and possibly some propellant tankage, building the POL storage bunker, and refurbishing the housing areas. No new construction has been observed.

Missile System Association and Activity

7. (S/D) The first observed missile GSE at Launch Site Garrison 3 was seen on [ ] when major elements of a CSS-1 launch unit were identified. CSS-1 equipment continued to be observed through September 1974. At that time, two missile transporters were observed with the launch unit as was a three-vehicle set of communications vans. Propellant vehicles for the CSS-1 unit were rarely observed at Garrison 3 but were frequently identified nearby at Launch Site Garrison 2. Since September 1974, no missile equipment has been observed; however, the housing areas appeared to be used and occupied. 25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 7					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	30-11-32N 117-42-12E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-14, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)	
		25X1

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 7 (Figure 11) is one of the four launch site garrisons in Launch Group B. The garrison is approximately 160 kilometers (km) by road from the SSM RTP and approximately 74 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a launch pad with a concrete apron 25X1
extension on all four sides. Two propellant access ports and one utilities access port are set into the concrete
apron extensions near the corners of the launch pad plus apron. Subsurface propellant lines 25X1
lead from two of the access ports to propellant storage caves. The missile loading apron is 25X1
with a loading azimuth of 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of a missile checkout/storage building. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 60 meters east and 50 meters west of the launch pad. A probable drive-through tunnel is approximately 100-meters northwest of the launch pad. Narrow-gauge rails on concrete aprons have been identified extending from both of the probable drive-through tunnel entrances. The entrances to the tunnel are 120 meters apart.

Other Storage

4. (S/D) A camouflaged, bunkered POL storage building with a vehicle ramp leading 25X1
to the roof of the building is along the garrison access road.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas for the launch site garrison are clustered along the garrison access road and near the junction of the main complex and garrison access roads. Launch Site Garrison 7 contains 910 square meters of barracks floorspace divided into areas for two company-sized units. There are two messhalls and two basketball courts, one for each unit. The garrison also contains one separate single-family quarters building.

Construction Status

6. (S/D) Construction of Launch Site Garrison 7 began between January and August of 1967. The launch pad was completed between February 1969 and December 1970, and the launch area was usable. Construction on the caves and tunnel was complete by February 1972. No changes were observed until 1974. Between August and September, upgrading began and then continued through 1977. During that period, propellant tanks and pipelines were installed, the POL storage building was constructed, and the housing and road system was refurbished. No significant changes have been observed since late 1977 within the security gate; however, the second company-sized housing area was constructed in late 1979 and early 1980.

Missile System Association and Activity

7. (S/D) The first observed missile GSE was identified on when CSS-2 control vans were 25X1
present. CSS-2 support equipment was observed throughout 1974 until October. From October 1974 until August 1978, no missile equipment was observed. CSS-2 equipment has been regularly observed since August 1978, including exercises where a missile checkout tent was erected in July 1979 and again in May 1980.

 25X1

LIANXIWANG SSM LAUNCH SITE GARRISONS 4, 5, 6, AND 8
LAUNCH GROUP C
LIANXIWANG MISSILE LAUNCH COMPLEX SSM (S)

ABSTRACT

1. (S/D) Launch Site Garrison 4, 5, 6, and 8 are component parts of Launch Group C, Lianxiwang Missile Launch Complex SSM. Each launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas. Each launch area contains a launch pad with concrete extensions on all four sides and a missile loading apron. Subsurface propellant lines connect the launch pad to propellant storage caves. The principal GSE storage is provided by a probable drive-through tunnel, two propellant storage caves, and a missile checkout/storage building. The launch pads were first usable in 1969-1970. Construction at these garrisons started in 1967 and continued through 1974; since that time, few changes have been observed. Missile GSE was first observed at Launch Group C in September 1974.

INTRODUCTION

2. (S/D) Launch Site Garrisons 4, 5, 6, and 8 are the four type C missile support bases in Launch Group C, Lianxiwang Missile Launch Complex SSM. The layout of Launch Group C, also designated Regiment 3 of this complex, is shown on the facing page (Figure 12). In addition to the four launch site garrisons, Launch Group C contains Lianxiwang Launch Complex Garrison 3 [redacted] a type B missile support base; Lianxiwang Propellant Storage Area 3 [redacted] and the specialized and general support areas of a regiment-level headquarters. Some of the support areas have been separately identified and designated. Lianxiwang IRBM Launch Site 5 Radio Communications Station/Hardened/-Bunkered [redacted] is the hardened communications facility for the regiment. The headquarters administration building of Regiment 3 is presently designated Lianxiwang SSM Regiment Headquarters [redacted]. The location of the Regiment 3 headquarters command post has not been confirmed. 25X1 25X1 25X1 25X1

Analyst's Comments

3. (S/D) The four launch site garrisons in Launch Group C were readied for contingency missile launch firings in late 1968 and 1969. Between September 1968 and December 1970, a launch pad, a missile checkout/storage building, and barracks for a company-sized unit were constructed at each garrison while work proceeded on the caves and tunnels.

4. (S/D) These launch site garrisons were not identified on satellite imagery until 1972; therefore, the sparse imagery prior to that date provided little information about the construction of the underground portions of the bases. The caves and tunnels at each of the garrisons were complete by the time that high-resolution imagery was acquired. However, imagery of good interpretability of propellant pipeline construction and water and utility line construction was obtained from 1972 to 1974.

5. (S/D) Beginning in late 1972 and 1973, new barracks and housing areas were constructed outside the security gate of each garrison. Some previously completed barracks which were inside the security gate and within sight of the GSE storage area were removed.

6. (S/D) Both CSS-1 and CSS-2 GSE have been observed at garrisons in Launch Group C at the same time. The mixing of these two missile systems in the same launch group is unusual because different propellants and support equipment are used for each system. The mixing of missile systems appears to be the result of the initial completion of construction in Launch Group C and the necessity of removing equipment from garrisons in nearby Launch Group B where refurbishment was starting. CSS-1 equipment was removed at two Launch Group B garrisons in 1974; subsequently, CSS-1 equipment was first seen at some garrisons in Launch Group C.

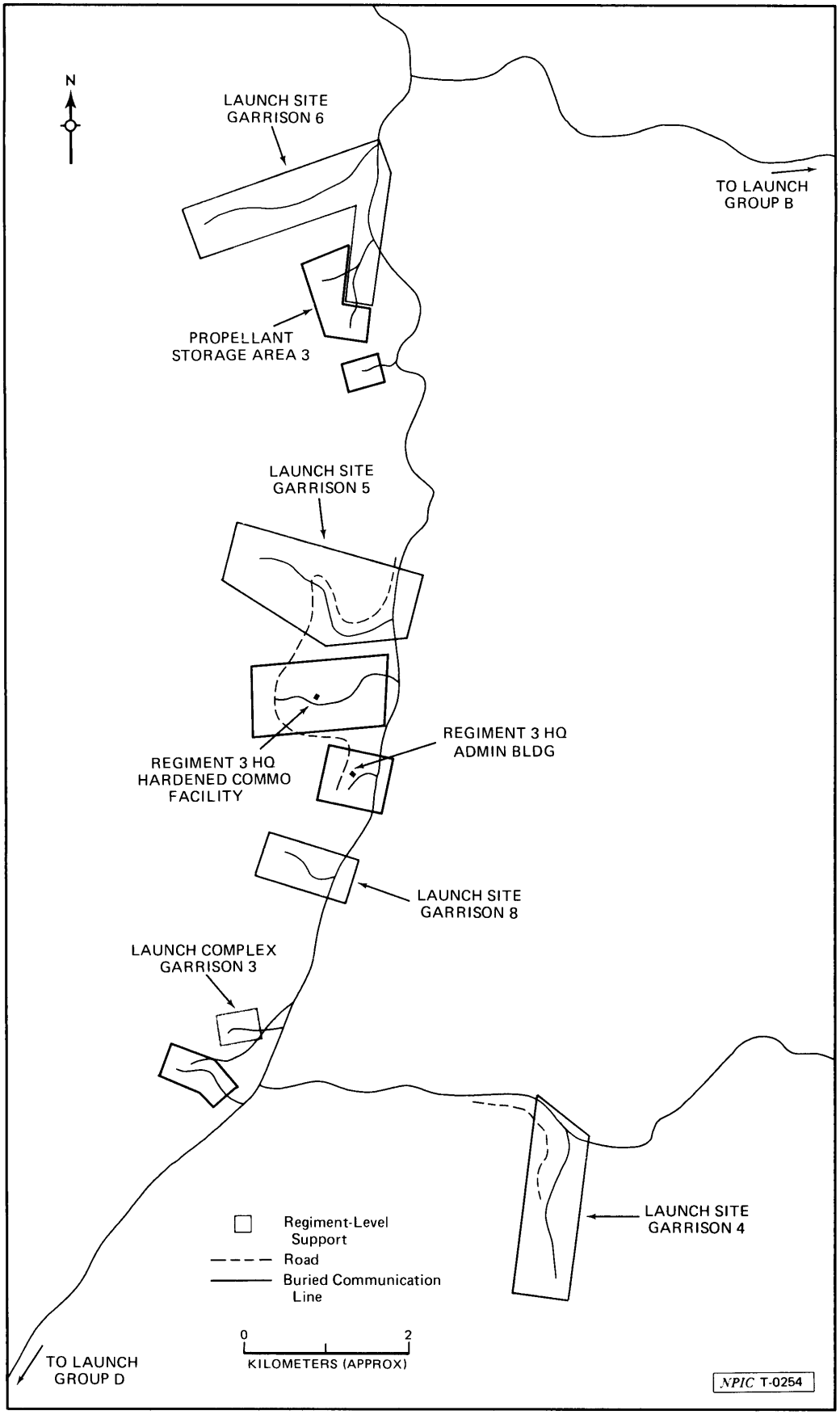

FIGURE 12. LAUNCH GROUP C (REGIMENT 3), LIANXIWANG MISSILE LAUNCH COMPLEX SSM

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 4					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	30-02-21N 117-36-25E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-14, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)	
		25X1

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 4 (Figure 13) is one of the four launch site garrisons in Launch Group C. The garrison is approximately 183 kilometers (km) by road from the SSM RTP and approximately 46 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [ ] launch pad with a [ ] concrete apron extension on all four sides. Two propellant access ports and one utility access port are set into the concrete apron extensions near the corners of the [ ] launch pad plus apron. Subsurface propellant lines lead from two of the access ports to propellant-storage caves. A buried cable extends only a short distance from the utility across port and may connect with a possible buried cable along the garrison access road. The missile loading apron is [ ] with a loading azimuth of [ ] degrees. 25X1 25X1 25X1

GSE Storage Area

3. (S/D) Surface GSE storage consists of a missile checkout/storage building and a six-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 90 meters north and 60 meters south of the launch pad. The probable drive-through tunnel is approximately 300 meters northwest of the launch pad. Narrow-gauge rails on a concrete apron extend 25 meters from both entrances to the probable drive-through tunnel. The entrances to the tunnel are 152 meters apart.

Other Storage

4. (S/D) A POL storage bunker has been constructed approximately 1,050 meters from the launch pad, on the launch site garrison access road, 50 meters inside the security gate.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are clustered at the closed end of the valley and at the junction of the garrison access and main complex roads. Launch Site Garrison 4 contains 1,837 square meters of barracks floorspace divided into three areas for three company-sized units. The two large company areas both contain a messhall and a basketball court. The smallest company area contains an exercise field and a messhall attached to one of the barracks. The garrison also contains multifamily quarters for five families and one separate single-family quarters.

Construction Status

6. (S/D) Construction of Launch Site Garrison 4 began between November and December 1967. The missile checkout/storage building was complete by November 1968. The launch pad was completed in early 1969. Construction of the underground storage areas continued through 1970 and 1971. Between July 1972 and June 1974, the launch pad extensions, propellant lines, rail guides at the two tunnel entrances, a POL storage area, and new barracks were completed. Since 1975, no new construction has been started, but refurbishment of existing structures has been observed.

Missile System Association and Activity

7. (S/D) The launch pad and surface GSE storage buildings have been usable since early 1969. The continuous security of the garrison was not established until June 1973 and possibly as late as mid-1974 when the last of the construction workers' housing buildings was dismantled. On [ ] a full complement of CSS-2 GSE was at the garrison. Since that initial observation, only CSS-2-related GSE has been observed. 25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 5					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	30-06-39N 117-34-51E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-13, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)	
		25X1

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 5 (Figure 14) is one of the four launch site garrisons in Launch Group C. The garrison is approximately 170 kilometers (km) by road from the SSM RTP and approximately 48 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [ ] launch pad with a [ ] concrete apron extension on all four sides. Two propellant access ports and one utility access port are set into the concrete apron extensions near the corners of the [ ] launch pad plus apron. Subsurface propellant lines lead from two of these access ports to propellant storage caves. The missile loading apron is [ ] with a loading azimuth of 340 degrees. 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of a missile checkout/storage building and a six-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 85 meters and 134 meters south of the launch pad. A probable drive-through tunnel is approximately 250 meters southeast of the launch pad. Narrow-gauge rails on concrete aprons extend [ ] from both entrances of the probable drive-through tunnel. The entrances to the tunnel are 168 meters apart. 25X1

Other Storage

4. (S/D) A [ ] camouflaged, bunkered POL storage building with a vehicle ramp leading to the roof of the building is along the garrison access road. 25X1

Barracks and Housing Areas

5. (S/D) The barracks and housing area is clustered at the junction of the garrison access and main complex roads. Launch Site Garrison 5 contains 1,848 square meters of barracks floorspace divided into three areas for three company-sized units. There are three messhalls and two basketball courts. The garrison also contains multifamily quarters for three families and one separate single-family quarters.

Construction Status

6. (S/D) Construction of Launch Site Garrison 5 began between November and December 1967. The launch pad was completed by December 1970. The missile checkout building was also probably completed in December 1970, but this could not be confirmed until July 1972. Construction of the propellant lines and additional barracks was completed in mid-1974. No new construction has been observed since late 1974.

Missile System Association and Activity

7. (S/D) The launch pad and surface GSE storage buildings were probably usable in 1969. Continuous security at the garrison was established in 1974, but missile GSE was never imaged until August 1977. The missile equipment observed at that time and throughout 1977, 1978, 1979, and early 1980 was not system specific. CSS-2-related GSE was confirmed at the garrison on [ ] 25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 6					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	30-08-48N 117-34-34				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-13, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)	
		25X1

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 6 (Figure 15) is one of the four launch site garrisons in Launch Group C. The garrison is approximately 165 kilometers (km) by road from the SSM RTP and approximately 54 km from the SSM RIM Facility. The launch site garrison is divided into two parts. One part is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas. The other part is in what presently is targeted as Lianxiwang SSM Propellant Storage Area 3, which is 1,200 meters southeast of the launch area. 25X1

Launch Area

2. (S/D) The launch area contains a launch pad with a concrete 25X1
apron extension on all four sides. Two propellant access ports are set into the concrete apron extensions
near the corners of the launch pad plus apron. Subsurface propellant lines lead from 25X1
these access ports to propellant storage caves. The missile loading apron is with a 25X1
loading azimuth of 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of a six-bay garage and missile checkout/storage building. The missile checkout/storage building is 1,250 meters southeast of the launch area. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 85 meters and 73 meters west of the launch pad. A probable drive-through tunnel is approximately 175 meters east of the launch pad. No narrow-gauge rails have been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 228 meters apart.

Other Storage

4. (S/D) The POL storage bunker for this garrison is approximately 1,100 meters southeast of the launch area.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are along the garrison access road and in a portion of Propellant Storage Area 3—1,200 meters southeast of the launch area. Launch Site Garrison 6 contains 687 square meters of barracks floorspace in the housing area along the launch pad access road and 790 meters of barracks floorspace in the housing area next to Propellant Storage Area 3. Both housing areas contain space for one company-sized unit. There are a messhall, a basketball court, and a family-quarters building in each housing area.

Construction Status

6. (S/D) Construction of Launch Site Garrison 6 began between November and December 1967. The launch pad was completed before December 1970. The missile checkout/storage building was probably complete in December 1970, but this could not be confirmed until July 1972. Construction of the propellant lines and additional barracks was completed in mid-1974. No new construction has been observed since late 1974.

Missile System Association and Activity

7. (S/D) The launch pad and surface GSE storage buildings were usable in December 1970 and probably usable in 1969. Continuous security was not established until 1974. CSS-1 GSE was observed in November 1974 and again in December 1975. Since the observation of CSS-1 GSE, only prime movers, vans, and cargo trucks have been observed. Such vehicles are used by both the CSS-1 and CSS-2 missile systems.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 8					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	30-04-51N 117-34-44E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-13, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)	
	Nov 67	25X1

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 8 (Figure 16) is one of the four launch site garrisons in Launch Group C. The garrison is approximately 176 kilometers (km) by road from the SSM RTP and approximately 54 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports are set into the concrete apron extensions near the corners of the [redacted] square launch pad plus apron. Subsurface propellant lines lead from these access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of [redacted] 25X1 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of a missile checkout/storage building and a six-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 37 meters northeast and 168 meters northwest of the launch pad. A probable drive-through tunnel is approximately 305 meters north of the launch pad. No narrow-gauge rails have been identified extending from the probable drive-through tunnel entrances. The entrances to the tunnel are 168 meters apart.

Other Storage

4. (S/D) A [redacted] camouflaged, bunkered POL storage building with a vehicle ramp leading to the roof of the building is along the launch site garrison access road. 25X1

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are clustered at the junction of the garrison access and main complex roads and in a separate area approximately 1 km northeast of the junction. Launch Site Garrison 8 contains 1,670 square meters of barracks floorspace divided into two areas for two company-sized units. There are two messhalls and two basketball courts, one in each area. The garrison also contains multifamily quarters for three families and one separate single-family quarters.

Construction Status

6. (S/D) Construction of Launch Site Garrison 8 began between November and December 1967. The launch pad and surface GSE storage buildings were already complete in December 1970. Construction of the propellant lines and additional barracks was completed in mid-1974. Security was established in September 1974, and no new construction has been observed since late 1974.

Missile System Association and Activity

7. (S/D) One three-vehicle set of mobile communications equipment was observed on [redacted] 25X1
[redacted] CSS-1-related equipment was observed in October 1978 and again in January 1979. 25X1

LIANXIWANG SSM LAUNCH SITE GARRISON 17, 18, 21, AND 22
LAUNCH GROUP D
LIANXIWANG MISSILE LAUNCH COMPLEX SSM (S)

ABSTRACT

1. (S/D) Launch Site Garrisons 17, 18, 21, and 22 are component parts of Launch Group D, Lianxiwang Missile Launch Complex SSM. Each launch site garrison is in a steep-walled mountain valley and consists of a launch area, a GSE storage area, and a small housing area. Each launch area contains a launch pad with concrete extensions on all four sides and a missile loading apron. The only GSE storage area at each launch site garrison consists of a probable drive-through tunnel. There are no propellant storage caves. The launch areas and GSE storage tunnels are complete and usable. The lack of any observed missile equipment and the lack of sufficient onsite housing for launch crews both indicate that these garrisons are occupied temporarily, if at all, by complete missile launch units. These launch site garrisons are most likely being maintained as contingency launch positions for launch units based elsewhere in the complex.

INTRODUCTION

2. (S/D) Launch Site Garrison 17, 18, 21, and 22 are the four type C missile support bases in Launch Group D, Lianxiwang Missile Launch Complex SSM. The layout of Launch Group D, which is also designated Regiment 4 of this complex, is shown on the facing page (Figure 17). In addition to the four launch site garrisons, Launch Group D contains a possible propellant storage area (Lianxiwang Propellant Storage Area 4, [redacted] and two partly completed support areas which appear to be a hardened command post or communications facilities. The northernmost of these two support areas was previously targeted as Lianxiwang Launch Site 19 [redacted], while the southernmost was designated as Lianxiwang Launch Site 20 [redacted] Like the four launch site garrisons in Regiment 4, the regiment-level support areas are incomplete and construction has been suspended for the past four years. The functions of each are, therefore, only identified tentatively. Construction workers remain in the area of the launch group. Construction workers' housing and one to three company-sized barracks areas for regiment-level administration are clustered 3 kilometers south-southeast of Launch Site Garrison 18. 25X1 25X1 25X1

Analyst's Comments

3. (S/D) The lack of propellant storage caves at the launch site garrisons and the absence of the extensive regiment-level support facilities common at most of the launch groups are sometimes cited as evidence that these southernmost facilities of Lianxiwang could not be another type C launch group or that the group contains a different type of launch site garrison. However, there is more evidence to support the position that these facilities make up a typical launch group of type C missile support bases where construction has been suspended. The work could have been suspended for political or technical reasons or both, but CSS-2 deployment has never been as extensive as first indicated. This situation is matched in western China at the Delingha SSM launch sites where a launch group of probably type C bases for the CSS-2 was started in the early 1970s. Drive-through tunnels were finally completed, and some caves and launch areas without launch pads were built. Construction was suspended for several years before it was finally resumed. New launch areas and GSE storage caves for the CSS-3 missile system were then started. The same sequence of events may not occur at Launch Group D at Lianxiwang, but a large group of construction workers remains in Launch Group D and in the Lianxiwang Complex.

4. (S/D) The launch site garrisons in Launch Group D are most likely used as contingency launch positions for missile launch units based elsewhere. The possibility that a launcher or the GSE for a missile launch unit has been stored in the drive-through tunnel at each garrison could not be ruled out. If missile equipment is stored in the tunnel, a launch crew, probably propellants and warhead, and any other missing equipment would still have to be transported to each of the garrisons from elsewhere in the launch group or complex to complete the launch unit. All of the launch site garrisons appear to be well maintained and secured, and they appear to be constantly occupied by a small group of from ten to 15 personnel.

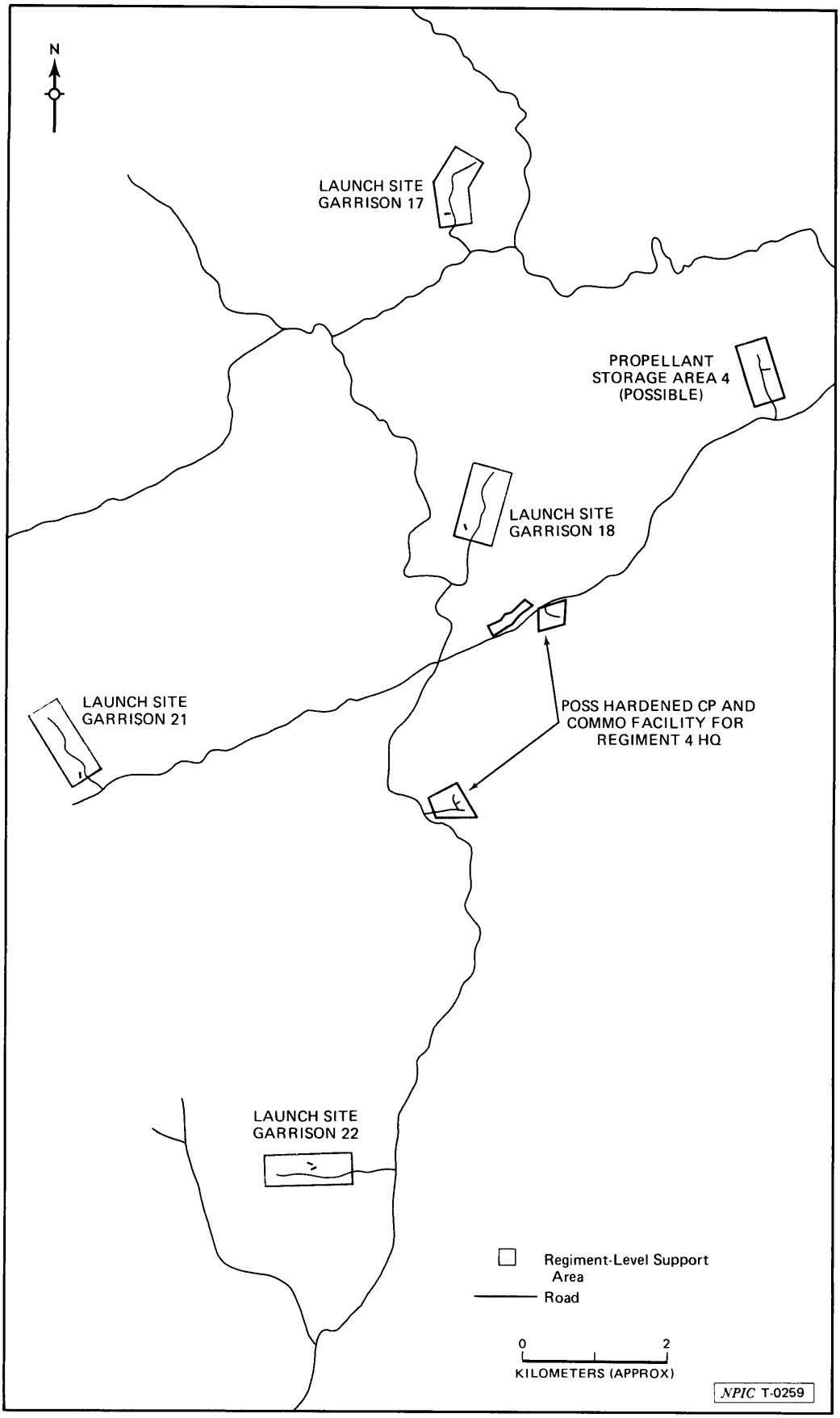

FIGURE 17. LAUNCH GROUP D (REGIMENT 4), LIANXIWANG MISSILE LAUNCH COMPLEX SSM

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 17					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	29-53-38N 117-14-45E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-13, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Dec 70

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 17 (Figure 18) is one of the four launch site garrisons in Launch Group D. The garrison is approximately 240 kilometers (km) by road from the SSM RTP and approximately 70 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and a small barracks area.

Launch Area

2. (S/D) The launch area contains a [ ] launch pad with a [ ] concrete apron extension on all four sides. No propellant access storage caves have been constructed. The missile loading apron is 34 by [ ] with a loading azimuth of [ ] 25X1 225X1

GSE Storage Area

3. (S/D) The launch site garrison contains no surface GSE storage. Underground GSE storage is provided by a probable drive-through tunnel; the probable drive-through tunnel is approximately 75 meters east of the launch pad. No narrow-gauge rails extend from the entrances to the probable drive-through tunnel. The entrances to the tunnel are 150 meters apart.

Other Storage

4. (S/D) No POL storage bunker has been identified.

Barracks and Housing Areas

5. (S/D) Launch Site Garrison 17 contains one barracks with 78 square meters of floorspace, apparently for a small security or maintenance force. There are also a kitchen or small support building and a basketball court.

Construction Status

6. (S/D) Construction of Launch Site Garrison 17 was begun between December 1970 and January 1972. Construction of the launch pad began after August 1972 and was complete with launch pad extensions and loading apron by December 1972. Construction of the underground storage areas continued through late 1974. No new construction has been started since that time except for the small barracks which was constructed between July and October 1979.

Missile System Association and Activity

7. (S/D) No missile equipment has been observed. The launch pad has been usable since December 1972, and the probable drive-through tunnel has been complete since late 1974. A small security or maintenance force has remained at the garrison since construction was finished.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 18					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	29-46-36N 117-13-35E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-13 scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Jul 71

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 18 (Figure 19) is one of the four launch site garrisons in Launch Group D. The garrison is approximately 220 kilometers (km) by road from the SSM RTP and approximately 50 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and a small barracks area.

Launch Area

2. (S/D) The launch area contains a [ ] launch pad with a [ ] concrete apron extension on all four sides. No propellant storage caves have been constructed. The missile loading apron is 34 by [ ] with a loading azimuth of [ ] 25X1 25X1

GSE Storage Area

3. (S/D) The launch site garrison contains no surface GSE storage. Underground GSE storage is provided by a probable drive-through tunnel. The probable drive-through tunnel is approximately 335 meters northeast of the launch pad. No narrow-gauge rails extend from the entrances to the probable drive-through tunnel. The entrances to the tunnel are 240 meters apart.

Other Storage

4. (S/D) A probable POL storage bunker has been constructed across from the northernmost entrance to the probable drive-through tunnel.

Barracks and Housing Areas

5. (S/D) Launch Site Garrison 18 contains one barracks with 78 square meters of floorspace, apparently for a small security or maintenance force. There are also a kitchen or small support building and a basketball court.

Construction Status

6. (S/D) Construction of Launch Site Garrison 18 began between July 1971 and January 1972. The [ ] launch pad was completed on [ ] The pad was either not present or was covered with earth when observed on imagery of [ ] Construction of the underground storage areas continued through late 1976. Between September and December 1975, the launch pad extensions and the loading apron were completed. No new construction has been started since December 1976 except for the small barracks and support building. 25X1 25X1

Missile System Association and Activity

7. (S/D) No missile equipment has been observed. The launch pad has been usable since early 1975. The probable drive-through tunnel was usable after 1976. A small security or maintenance force has remained at the garrison since construction was finished.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 21					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	29-41-53N 117-06-04E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-13, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Dec 69

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 21 (Figure 20) is one of the four launch site garrisons in Launch Group D. The garrison is approximately 240 kilometers (km) by road from the SSM RTP and approximately 60 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and a small barracks area.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. No propellant storage caves have been constructed. The missile loading apron is 34 by [redacted] with a loading azimuth of [redacted] 25X1 25X1

GSE Storage Area

3. (S/D) The launch site garrison contains no surface GSE storage. Underground GSE storage is provided by a probable drive-through tunnel. The probable drive-through tunnel is approximately 60 meters east of the launch pad. No narrow-gauge rails extend from the entrances to the probable drive-through tunnel. The entrances to the tunnel are 195 meters apart.

Other Storage

4. (S/D) No POL storage bunker has been constructed.

Barracks and Housing Areas

5. (S/D) Launch Site Garrison 21 contains one barracks with 78 square meters of floorspace, apparently for a small security or maintenance force. There are also a kitchen or small support building and a basketball court.

Construction Status

6. (S/D) Construction of Launch Site Garrison 21 began between December 1969 and July 1971. Construction of the launch pad was begun after July 1972 and was complete with launch pad extensions and loading apron when next observed in December 1972. Construction of the underground storage areas continued through late 1974. Since late 1974, no new construction has been started except for the small barracks and support buildings.

Missile System Association and Activity

7. (S/D) No missile equipment has been observed. The launch pad has been usable since late 1972. The probable drive-through tunnel was usable after 1974. A small security or maintenance force has remained at the garrison since construction was finished.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Lianxiwang SSM Launch Site Garrison 22					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	29-35-07N 117-12-54E				

25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0493-13, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Dec 70

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 22 (Figure 21) is one of the four launch site garrisons in Launch Group D. The garrison is approximately 250 kilometers (km) by road from the SSM RTP and approximately 70 km from the SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and a small barracks area.

Launch Area

2. (S/D) The launch area contains a [ ] launch pad with a [ ] concrete apron extension on all four sides. No propellant storage caves have been constructed. The missile loading apron is 34 by [ ] with a loading azimuth of [ ]

25X1

225X1

GSE Storage Area

3. (S/D) This launch site garrison contains no surface GSE storage. Underground GSE storage is provided by a probable drive-through tunnel. The probable drive-through tunnel is approximately 210 meters west of the launch pad. No narrow-gauge rails extend from the entrances to the probable drive-through tunnel. The entrances to the tunnel are 230 meters apart.

Other Storage

4. (S/D) No POL storage bunker has been constructed.

Barracks and Housing Areas

5. (S/D) Launch Site Garrison 22 contains one barracks with 78 square meters of floorspace, apparently for a small security or maintenance force. There are also a kitchen or small support building and a basketball court.

Construction Status

6. (S/D) Construction of Launch Site Garrison 22 began between December 1970 and January 1972. Construction of the launch pad was started after October 1973 and was complete with launch pad extensions and loading apron when next observed in December. Construction of the underground storage areas continued through late 1974. Since that time, no new construction has been started except for the small barracks and a support building.

Missile System Association and Activity

7. (S/D) No missile equipment has been observed. The launch pad has been usable since late 1973, and the probable drive-through tunnel has been usable since late 1974. A small maintenance or security force has remained at the garrison since construction was finished.

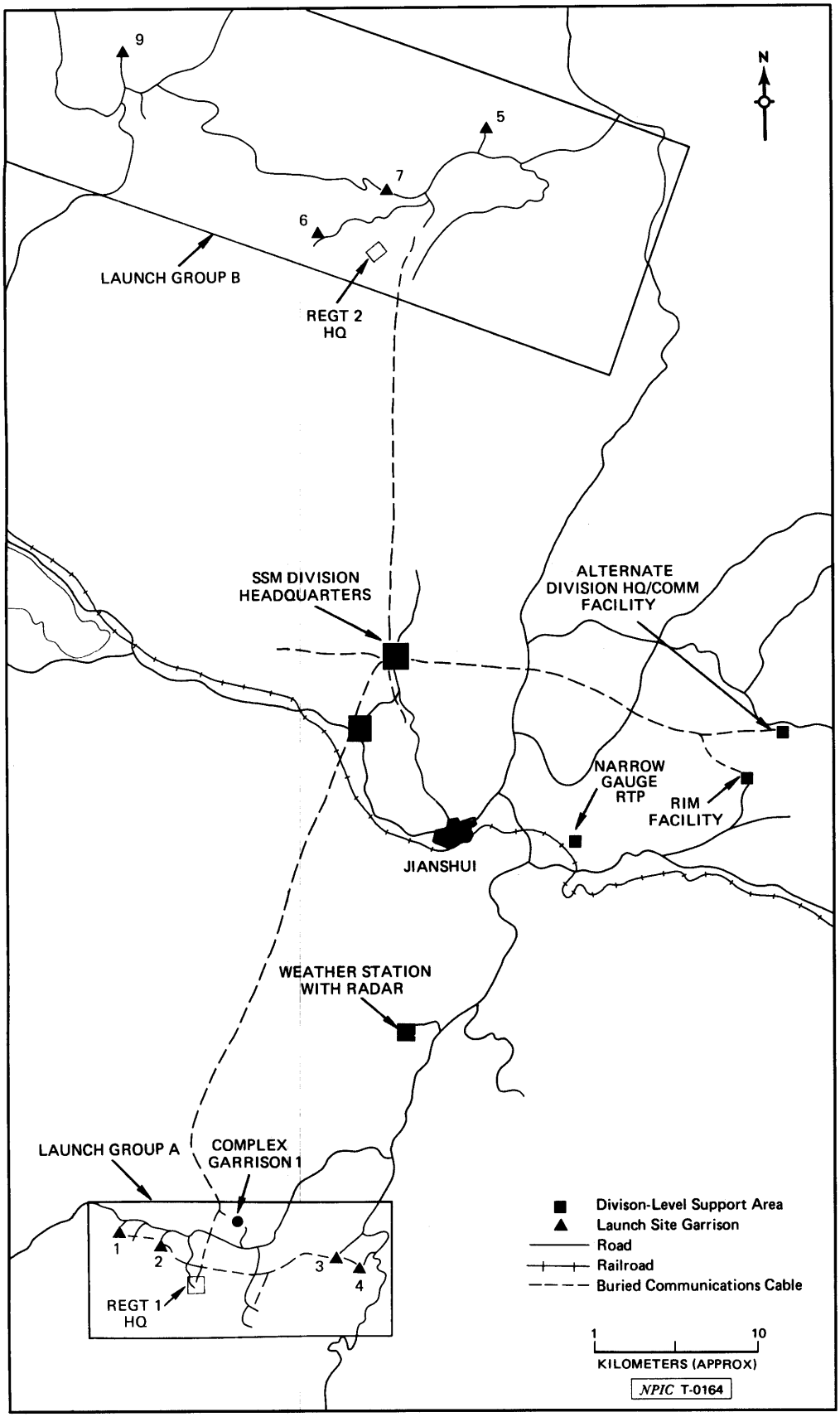

FIGURE 1. JIANSHUI SSM MISSILE LAUNCH COMPLEX, CHINA

JIANSHUI SSM MISSILE LAUNCH COMPLEX (S)

1. (S/D) The Jianshui SSM Missile Launch Complex ( ) is in southwest China, 120 kilometers (km) south of Kunming and 45 km north of the Vietnamese border. The complex contains eight launch site garrisons (type C missile support bases). The launch site garrisons are organized by groups of four into a total of two launch groups, designated A and B (Figure 1). Each launch group is administered by a regiment-level headquarters, SSM regiment headquarters 1 and 2, respectively. One SSM division headquarters installation has been identified in Jianshui. 25X1

2. (S/D) The launch site garrisons are served directly by road. Paved all-weather roads lead to each launch group, but roads within the launch group are composed of packed earth that is probably overlayed with gravel. There is only narrow-gauge rail service directly to the complex, and the specialized missile railcars and propellant railcars cannot use this service. The nearest standard-gauge rail service is at the Kunming SSM Rail-to-Road Transshipment Facility (RTP;) in Kunming. Electric power is supplied from the local power grid via aboveground lines. Aboveground and buried communications lines extend to all the launch site garrisons. 25X1

3. (S/D) The garrisons and support areas of the Jianshui complex are in separate valleys in a mountainous and forested area surrounding the city of Jianshui. The climate is moderate and temperatures are rarely below freezing. The average rainfall is about 40 inches (1,000 millimeters), occurring mostly between May and August. The steep mountainsides provide the isolation and physical security for the missile installations. Fences are not used. There are guardposts along the access road to each valley where a missile installation is located. There is a lift gate across the road leading to each launch site garrison.

4. (S/D) Jianshui complex is probably closely associated with the Kunming SSM Field Garrison (BE , the Kunming SSM Field Training Position 1/2 ( ), and the Kunming SSM RTP. The RTP is the nearest rail service to Jianshui, and the training positions are the only field training areas identified in the region. SRBMs were based at the Kunming SSM Field Garrison in 1966; CSS-1 MRBMs arrived in 1967. Construction at the Jianshui complex was started also in 1967. The first observation of missile equipment at Jianshui was not until 1972, when in July, CSS-2 GSE was observed in Launch Group A. CSS-1 MRBM GSE, identified in Launch Group B in 1976, was the first missile equipment observed in that launch group. In 1980, construction was continuing in Jianshui complex at one of the launch site garrisons and at many of the support areas. 25X1 25X1

RCA-01/0007/80 25X1

JIANSHUI SSM LAUNCH SITE GARRISONS 1, 2, 3, AND 4
LAUNCH GROUP A
JIANSHUI SSM MISSILE LAUNCH COMPLEX (S)

ABSTRACT

1. (S/D) Launch Site Garrisons 1, 2, 3, and 4 are component parts of Launch Group A, Jianshui SSM Missile Launch Complex. Each site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas. Each launch area contains a launch pad and a missile loading apron. Subsurface propellant lines connect the launch pad to propellant storage caves. The principal storage is provided by a probable drive-through tunnel and two propellant storage caves. Construction at these garrisons began in early 1967 and continued through early 1972. The launch pad at Launch Site Garrison 4 was completed for contingency missile firings in 1969 and at Launch Site Garrison 3 in 1970. CSS-2 missile GSE was observed at all the garrisons by late 1972 and early 1973. During 1975, additional housing and GSE storage buildings were completed at all four garrisons.

INTRODUCTION

2. (S/D) Launch Site Garrisons 1, 2, 3, and 4 are the four type C missile support bases in Launch, Group A, Jianshui SSM Missile Launch Complex. The layout of Launch Group A, also designated Regiment 1 of this complex, is shown on the facing page (Figure 2). In addition to the four launch site garrisons, Launch Group A contains Jianshui Launch Complex Garrison 1 [redacted] a type B missile support base; Jianshui Propellant Storage Area 1 [redacted] and the specialized and general support areas of a regiment-level headquarters. A hardened command post for the regiment-level headquarters (Jianshui SSM Regiment Headquarters 1, [redacted] its associated hardened communications facility (Jianshui Communications Facility/Hard/Bunker, [redacted] and the regiment weather station are in the southern part of the launch group area. The administration building, auditorium, and family housing areas for the regiment-level headquarters are in the northernmost support area. 25X1 25X1 25X1 25X1

Analyst's Comments

3. (S/D) From 1972 to 1974, observations of GSE indicated that at least one launch unit was present at each of the launch site garrisons. From 1973 to 1975, two company-sized housing areas and above-ground GSE storage buildings were added to all four garrisons. Building floorspace at each garrison was more than doubled. Because at least one launch unit was deployed and maintained over some years without these structures, the expansion of building space is significant evidence that additional launch units or a refire capability had been added to these garrisons.

4. (S/D) Considerable insight into the operation of the type C missile support bases has been gained from the observations of GSE at this launch group. A missile transporter and a crane have been observed next to the rail guides serving an entrance to the probable drive-through tunnel. Also, during missile training exercises as early as 1973, a full complement of propellant vehicles was present. The complement of propellant vehicles was being used to fuel the missile, directly bypassing the pipelines connecting the launch pad and storage tanks. The propellant vehicle complement also allows a CSS-2 launch unit to deploy to another launch position, even hastily constructed field positions where there are no propellant pipelines and storage areas. The exercises observed indicate considerable and frequent training to carry out this deployment option.

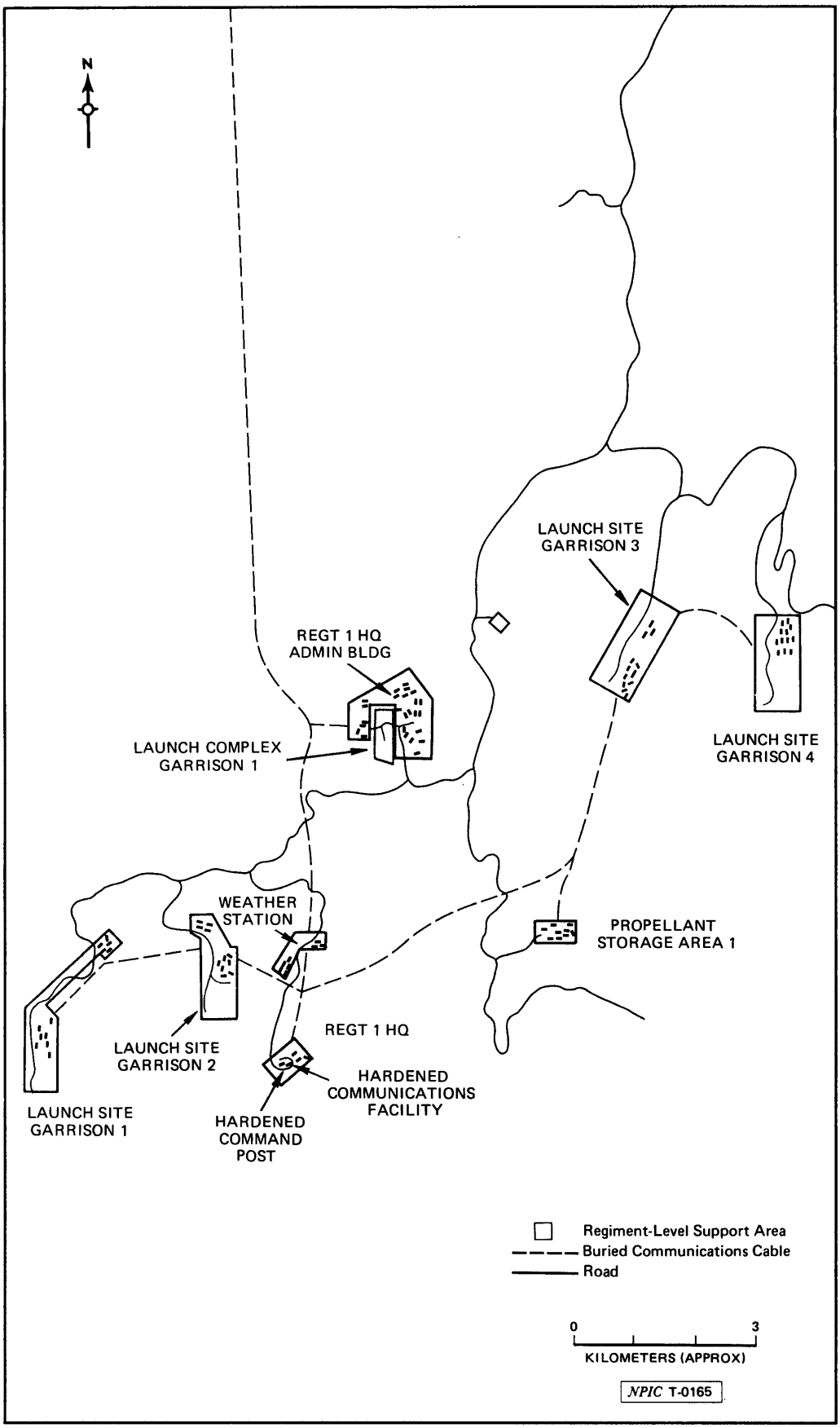

FIGURE 2. LAUNCH GROUP A, JIANSHUI SSM MISSILE LAUNCH COMPLEX

INSTALLATION OR ACTIVITY NAME					COUNTRY
Jianshui SSM Launch Site Garrison 1					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	23-23-10N 102-43-10E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0616-02, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
May 80	Feb 67

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 1 (Figure 3) is one of the four launch site garrisons in Launch Group A. The garrison is approximately 289 kilometers (km) by road from the Kunming SSM RTP and approximately 50 km from the Jianshui SSM Receiving, Inspection, and Maintenance (RIM) Facility [redacted] The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas. 25X1

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on all four sides. Two propellant access ports and one utilities access port are set into the concrete apron extensions near the corners of the [redacted] launch pad plus apron. Subsurface propellant lines lead from two of the access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of [redacted] 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) This launch site garrison contains one four-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 127 meters north and 130 meters south of the launch pad. The probable drive-through tunnel is approximately 75 meters south of the launch pad. Narrow-gauge rails do not extend from the entrances of the probable drive-through tunnel. The entrances to the tunnel are 152 meters apart.

Other Storage

4. (S/D) No POL storage bunker has been identified. There are two small caves without blast doors. One cave, 70 meters south of the launch pad, could be for POL storage. The other small cave, 40 meters west of the launch pad, is probably a launch control bunker.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are 300 meters north and 2 km north of the launch pad. Launch Site Garrison 1 contains 2,523 square meters of barracks floorspace in 20 barracks divided into four areas for four company-sized units. There are four messhalls and four basketball courts, one for each unit. The launch site garrison also contains multifamily quarters for four families and one separate single-family quarters.

Construction Status

6. (S/D) Construction of Launch Site Garrison 1 had begun by August 1967. Construction of the launch pad was complete, including the launch pad extensions, by January 1972. Construction of the underground storage areas was not complete until mid-1972. Additional housing facilities were constructed from mid-1973 through 1975. A new missile loading apron was completed by January 1975, changing the missile loading azimuth from [redacted] No new construction has been started since 1975. 25X1

Missile System Association and Activity

7. (S/D) Missile GSE was first observed at this launch site garrison during April 1973. A truck-mounted crane and a possible CSS-2 canvas-covered launch stand transporter were observed in January 1974. CSS-2 GSE has been observed consistently, as recently as December 1979.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Jianshui SSM Launch Site Garrison 2					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	23-23-28N 102-44-32E				

25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0616-02, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
May 80	Feb 67

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 2 (Figure 4) is one of the four launch site garrisons in Launch Group A. The garrison is approximately 290 kilometers (km) by road from the Kunming SSM RTP and approximately 48 km from the Jianshui SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on two sides. Two propellant access ports are set into the concrete apron extensions near the corners. Subsurface propellant lines lead from two of the access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of [redacted]

25X1

225X1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of a six bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 162 meters and 132 meters south of the launch pad, and the probable drive-through tunnel is approximately 51 meters south of the launch pad. Narrow-gauge rails do not extend from the entrances of the probable drive through tunnel. The entrances to the tunnel are 258 meters apart.

Other Storage

4. (S/D) A POL storage bunker has not been identified.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are 365 meters and 600 meters north of the launch pad. Launch Site Garrison 2 contains 2,274 square meters of barracks floorspace in 15 barracks for four company-sized units. There are four messhalls and four basketball courts, one for each unit. The launch site garrison also contains multifamily quarters for four families and one separate single-family quarters.

Construction Status

6. (S/D) Construction of Launch Site Garrison 2 had begun by August 1967. Launch pad construction was complete by January 1972. Construction of the underground storage areas was not complete until early 1972. New housing and GSE storage buildings were added in 1973 and 1974. Between March 1974 and January 1975, the launch pad extensions and the missile loading apron were completed. No new construction has been started since 1975.

Missile System Association and Activity

7. (S/D) Missile GSE has been observed at Launch Site Garrison 2 since January 1973 with the identification of a cherry-picker/crane. A CSS-2 launch stand transporter and four CSS-2 fuel vehicles were observed in March 1973. CSS-2 GSE has been observed consistently, as recently as January 1980.

[redacted] 25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Jianshui SSM Launch Site Garrison 3					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	23-24-19N 102-49-40E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0616-02, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Feb 67

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 3 (Figure 5) is one of the four launch site garrisons in Launch Group A. The garrison is approximately 290 kilometers (km) by road from the Kunming SSM RTP and approximately 38 km from the Jianshui SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on two sides. Two propellant access ports are set into the concrete apron extensions near the corners. Subsurface propellant lines lead from two of the access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of 265 degrees. 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of a missile checkout/storage building and a six- bay, two four-bay, and a five-bay garage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 100 meters north and 100 meters west of the launch pad. The probable drive-through tunnel is approximately 145 meters north of the launch pad. Narrow-gauge rails on a concrete apron extend from one entrance of the probable drive-through tunnel. The entrances to the tunnel are 175 meters apart.

Other Storage

4. (S/D) A POL storage bunker has been constructed approximately 550 meters northwest of the launch pad, on the site garrison access road.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are 240 meters southeast and 365 meters northeast of the launch pad. Launch Site Garrison 3 contains 2,500 square meters of floorspace in 16 barracks for four company-sized units. There are four messhalls and four basketball courts, one for each unit. The launch site garrison also contains multifamily quarters for four families and one separate single-family quarters.

Construction Status

6. (S/D) Construction of Launch Site Garrison 3 had begun by December 1968. Launch pad construction was completed between March 1970 and April 1971. Construction of the underground storage areas was not complete until early 1972. Between January and July 1975, the launch pad extensions and the missile loading aprons were completed. The missile checkout/storage building, garages, and additional housing facilities were complete by early 1975. No new construction has been started since late 1975.

Missile System Association and Activity

7. (S/D) Missile GSE has been observed at this launch site garrison since November 1972 with the identification of a CSS-2 missile transporter. CSS-2 GSE has been observed consistently, as recently as January 1980.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Jianshui SSM Launch Site Garrison 4					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	23-24-18N 102-50-58E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0616-02, scale 1:200000

LATEST IMAGERY USED	NEGATION DATE (If required)
May 80	Feb 67

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 4 (Figure 6) is one of the four launch site garrisons in Launch Group A. The garrison is approximately 290 kilometers (km) by road from the Kunming SSM RTP and approximately 45 km from the Jianshui SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extension on two sides. Two propellant access ports are set into the concrete apron extensions near the corners of the launch pad. Subsurface propellant lines lead from two of the access ports to propellant storage caves. The missile loading apron is [redacted] with a loading azimuth of [redacted] 25X1 25X1.1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of a missile checkout/storage building and an eight-bay and a five-bay garage. This was the first launch site garrison of this group at which a missile checkout building was constructed. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 155 meters and 70 meters north of the launch pad. The probable drive-through tunnel is approximately 180 meters north of the launch pad. Narrow-gauge rails on a concrete apron extend from one entrance of the probable drive-through tunnel. The entrances to the tunnel are 145 meters apart.

Other Storage

4. (S/D) A POL storage bunker has been constructed approximately 1,000 meters north from the launch pad, on the launch site garrison access road.

Barracks and Housing Areas

5. (S/D) The barracks and housing area is 640 meters north of the launch pad. Launch Site Garrison 4 contains 2,227 square meters of barracks floorspace in 14 barracks for four company-sized units. This launch site garrison contains four messhalls and three basketball courts.

Construction Status

6. (S/D) Construction of Launch Site Garrison 4 had begun by August 1967. Launch pad construction was observed during February 1969 and was complete by March 1970. Construction of the underground storage areas continued through early 1972. Between February 1974 and January 1975, the launch pad extensions, and the loading apron were completed. The missile checkout/storage building, the garages, and additional housing were added in 1975. No new construction has been started since late 1975.

Missile System Association and Activity

7. (S/D) Missile GSE has been observed at Launch Site Garrison 4 since November 1972 with the identification of a CSS-2 missile transporter. CSS-2 GSE has been observed consistently, as recently as January 1980.

JIANSHUI SSM LAUNCH SITE GARRISONS 5, 6, 7, AND 9
LAUNCH GROUP B
JIANSHUI SSM MISSILE LAUNCH COMPLEX (S)

ABSTRACT

1. (S/D) Launch Site Garrisons 5, 6, 7, and 9 are component parts of Launch Group B, Jianshui SSM Missile Launch Complex. Each launch site garrison contains a housing area, a probable drive-through tunnel and two propellant storage caves. No subsurface propellant lines connect the single launch pad to the propellant storage caves in these garrisons. Launch Site Garrison 9 was still under construction and did yet contain a launch position, unless the launch pad at Jianshui SSM Field Training Position (BE [redacted] is considered as part of Launch Site Garrison 9. Construction in Launch Group B began in 1968, and the first of the launch areas was usable in 1972. However, new construction and improvements have been observed at all of the garrisons through the end of 1977, and work continues at Launch Site Garrison 9 through June 1980. Major elements of a CSS-1 MRBM launch unit were observed in the launch group in 1976. Elements of two launch units—one MRBM and one unknown—were identified in late 1979. CSS-2 GSE was first confirmed in the launch group in August 1980. 25X1

INTRODUCTION

2. (S/D) Launch Site Garrisons 5, 6, 7, and 9 are the four type C missile support bases in Launch Group B, Jianshui SSM Missile Launch Complex. The layout of Launch Group B, which is also designated Regiment 2, is shown on the facing page (Figure 7). Jianshui SSM Field Training Position may be the launch position for Launch Site Garrison 9. Launch Group B also contains Jianshui Propellant Storage Area 2 [redacted] and the specialized and general support areas of a regiment-level headquarters. 25X1
The hardened command post for the regiment headquarters (Jianshui SSM Regiment Headquarters 2, BE [redacted] has been identified, but an associated hardened communications facility has not been located. The Regiment Headquarters 2 administration building, weather station, motor pool, and most of its associated housing areas are grouped together in the northeasternmost support area. 25X1

Analyst's Comments

3. (S/D) In June 1980, there was still no launch pad for Launch Site Garrison 9 within the confines of the valley where all GSE storage areas are. The possibility is becoming stronger that what presently is referred to as an SSM Field Training Position is the launch area for this garrison. The distance between the launch pad at the field training position and the GSE storage area of Launch Site Garrison 9 is about the same as the distance between the launch pad and GSE storage area at Launch Site Garrison 7. The SSM Field Training Position is perhaps mistitled in any event. There are no other facilities there except the launch pad and apron. There is also nothing to distinguish the launch pad as one that is to be used for training, and no field training exercises have ever been observed at the field position since its construction in 1978.

4. (S/D) It is unlikely that propellant lines will be constructed at the launch site garrisons in Launch Group B. Except at Launch Site Garrision 6, the propellant storage caves are too widely separated from the launch pad. The same may be true for Launch Site Garrison 9, depending on the location of the launch pad. At Launch Site Garrison 6, both propellant storage caves are separated from the launch pad by a wide stream, and it would be difficult to construct a hardened propellant line conduit under it.

5. (S/D) Details of the construction and configuration of launch pads, launch pad extensions, and missile loading aprons are observable on excellent photographic coverage acquired from 1972 through 1975 photography of Launch Group B.

7. (S/D) The regiment motor pool area (and apparently Launch Site Garrison 5) has been used by a MRBM launch unit for training exercises since at least 1976. It is possible that this unit has been based in these two areas. The motor pool area has been identified as such because of its similarity to the one in Jianshui Launch Group A. There is a maintenance building with vehicle lift and vehicle stalls too narrow for most CSS-2 GSE in the motor pool area. However, the vehicle stalls can accommodate CSS-1 GSE, and the motor pool area contains one drive-in/possibly drive-through building that is 21 meters long and 12 meters wide. The building is large enough to be a missile checkout/storage building, and the motor pool area should be designated for targeting as a type B missile support base (Launch Complex Garrison).

[redacted] 25X1

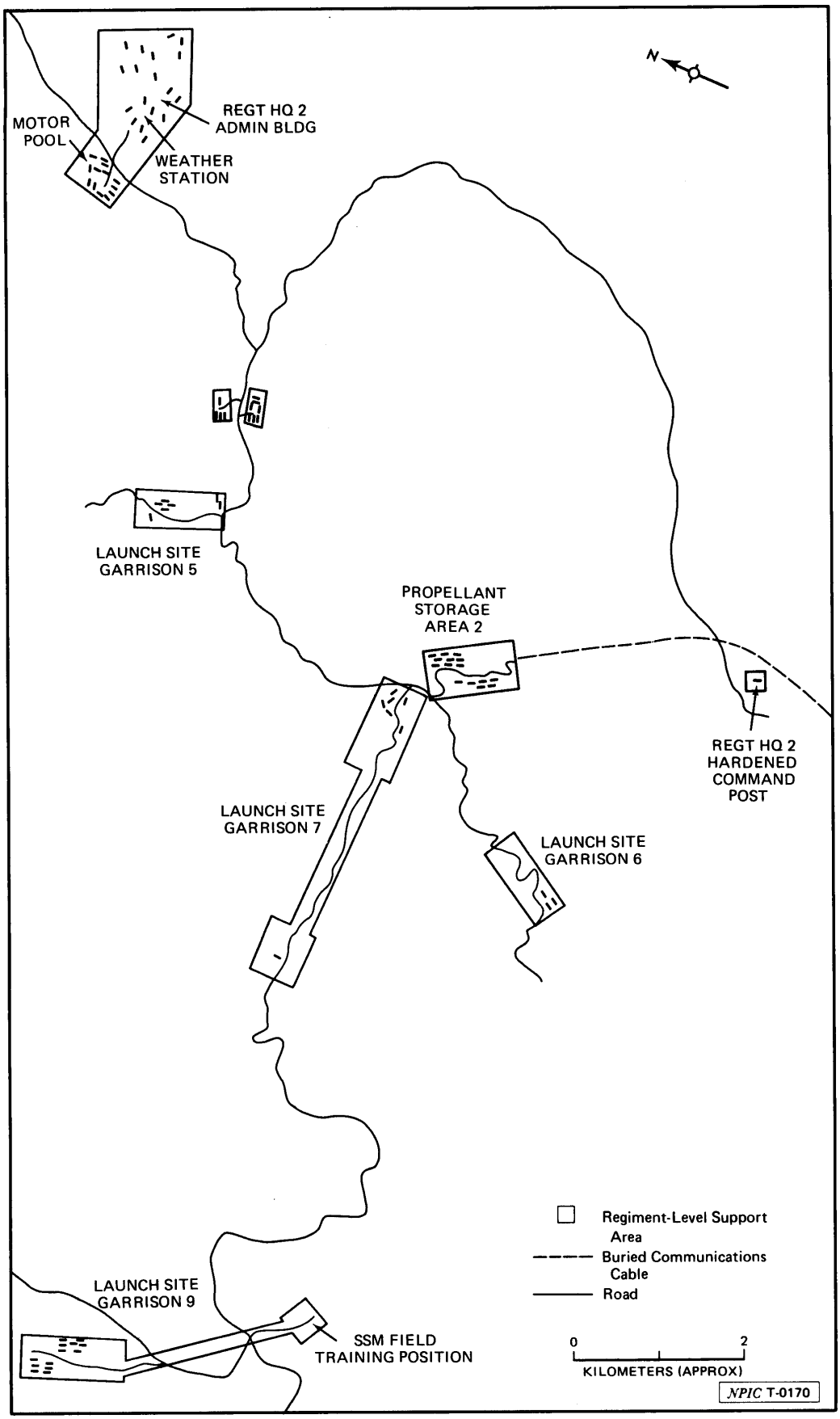

FIGURE 7. LAUNCH GROUP B, JIANSHUI SSM MISSILE LAUNCH COMPLEX

INSTALLATION OR ACTIVITY NAME					COUNTRY
Jianshui SSM Launch Site Garrison 5					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	23-55-41N 102-44-11E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0616-02, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Jan 68

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 5 (Figure 8) is one of the four launch site garrisons in Launch Group B. The garrison is approximately 190 kilometers (km) by road from the Kunming SSM RTP and approximately 60 km from the Jianshui SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [ ] launch pad with a [ ] concrete apron extension on two sides. The missile loading apron is [ ] with a loading azimuth of [ ] 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of a missile checkout/storage building. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 114 meters northwest and 752 meters south of the launch pad. The probable drive-through tunnel is approximately 105 meters west of the launch pad. Narrow-gauge rails do not extend from the entrances of the probable drive-through tunnel. The entrances to the tunnel are 256 meters apart.

Other Storage

4. (S/D) A POL storage bunker has been constructed approximately 800 meters south of the launch pad, on the site garrison access road.

Barracks and Housing Areas

5. (S/D) The barracks and housing areas are across the stream from the launch area and also near the southern propellant storage adit. Launch Site Garrison 5 contains 719 square meters of barracks floorspace in five buildings for one company-sized unit. There are one messhall and one basketball court. A possible family quarters building was also observed.

Construction Status

6. (S/D) Construction of Launch Site Garrison 5 began between January and December 1968. The launch pad was constructed in January and February 1972. By late 1972, construction within the caves was complete, and the garrison was usable; however, only the probable drive-through tunnel and one propellant storage cave had been built. No changes were seen until late 1974 when work was started on a permanent housing area. In 1975, a second propellant storage cave and POL storage bunker were under construction. The extensions to the launch pad and the missile loading apron were constructed in April/-May 1975. By November, a missile checkout/storage building and the new housing area were completed. Work on the second propellant storage cave was complete in 1976. Work to complete the POL storage area continued through 1977, and all the buildings used to house the workers were removed in early 1978.

Missile System Association and Activity

7. (S/D) The launch pad was usable for contingency missile operations in mid-1972. Missile GSE was first observed in September 1976 with the identification of a CSS-1 system-related A-frame crane. A CSS-1 transporter-erector was observed at that time in a nearby support area of Regiment 2. CSS-1 GSE was also observed throughout 1977—in April, August, and November. The small number of vehicles seen in 1978 and 1979 could not be related to a specific missile system, but in February and March 1980, CSS-1-associated GSE was again confirmed at the garrison.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Jianshui SSM Launch Site Garrison 6					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	23-52-42N 102-41-31E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0616-02, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Jan 68

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 6 (Figure 9) is one of the launch site garrisons in Launch Group B. The garrison is approximately 190 kilometers (km) by road from the Kunming SSM RTP and approximately 60 km from the Jianshui SSM RIM Facility. The launch site garrison is in a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete 25X1
apron extensions on two sides. The missile loading apron is [redacted] with a loading azimuth of 25X1
170 degrees.

GSE Storage Areas

3. (S/D) This launch site garrison contains no surface GSE storage. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 130 meters north and 100 meters southwest of the launch pad. The probable drive-through tunnel is approximately 900 meters northeast of the launch pad. Narrow-gauge rails do not extend from the entrances of the probable drive-through tunnel. The entrances to the tunnel are 212 meters apart.

Other Storage

4. (S/D) No POL storage bunker has been constructed.

Barracks and Housing Areas

5. (S/D) The barracks and housing area is on a hillside above the launch area and consists of a two-story, dormitory-style barracks. Launch Site Garrison 6 contains 545 square meters of barracks floorspace which is enough space for one company-sized unit. There are one messhall and one basketball court serving the unit. A volleyball court has also been constructed. A possible family housing building is on the garrison access road just inside the security gate.

Construction Status

6. (S/D) Construction of Launch Site Garrison 6 began between January and December 1968. Cave and tunnel construction continued sporadically through 1972. The launch pad was constructed between July and November 1972. A security gate was observed shortly thereafter, and few changes occurred until 1975. Between May and October, the launch pad extensions and missile loading apron were constructed. The permanent housing area was built between March and September 1976. Work to complete the cave and tunnel headworks and blast doors was observed from 1975 through early 1977. All housing for construction workers had all been removed by March 1977, and no new construction has been observed.

Missile System Association and Activity

7. (S/D) The launch pad has been usable since late 1972, and a security gate has been present since that time. However, construction workers were at the garrison almost continuously through March 1977. Vehicles, mostly cargo trucks, were observed on numerous occasions, but no missile GSE was confirmed until December 1979. At that time, 11 single-axle trailers of the type associated with a CSS-1 launch unit were parked in the launch area.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Jianshui SSM Launch Site Garrison 7					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	23-53-57N 102-43-02E				25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0616-02, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jun 80	Jan 68

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 7 (Figure 10) is one of the four launch site garrisons in Launch Group B. The garrison is approximately 190 kilometers (km) by road from the Kunming SSM RTP and approximately 70 km from the Jianshui SSM RIM Facility. The launch site garrison extends 3 km through a steep-walled stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad with a [redacted] concrete apron extensions on two sites. The missile loading apron is [redacted] with a loading azimuth of [redacted] 25X1 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage consists of one four-bay garage in the housing area. Underground GSE storage is provided by two propellant storage caves and a probable drive-through tunnel. The propellant storage caves are 200 meters west and 2.8 km east of the launch pad. The probable drive-through tunnel is approximately 2.6 km east of the launch pad. Narrow-gauge rails on a concrete apron extend from both entrances of the probable drive-through tunnel. The entrances to the tunnel are 142 meters apart.

Other Storage

4. (S/D) A possible POL storage bunker is on the south side of the access road, between the housing area and the probable drive-through tunnel.

Barracks and Housing Areas

5. (S/D) The barracks and housing area is 3 km east of the launch pad. Launch Site Garrison 7 contains 1,185 square meters of floorspace in two multistory barracks for two company-sized units. The garrison contains two messhalls, one for each unit. A basketball court, a volleyball court, and a badminton court were in the housing area. Two support buildings, one with an unusual three-story tower section, are next to the probable drive-through tunnel.

Construction Status

6. (S/D) Construction of Launch Site Garrison 7 had begun by December 1968. Construction of the launch pad was in progress by March 1973. The launch pad extensions and missile loading apron were completed between August 1974 and April 1975. The construction workers support and housing buildings that were used during construction of the pad extensions, the missile loading apron, and the second propellant storage cave were removed from the launch pad area in December 1976. The multistory barracks were built between November 1975 and September 1977. Construction of the underground GSE storage areas was also completed in late 1977.

7. (S/D) The launch pad has been usable since mid-1973; however, the earthen apron around the pad was not leveled and usable until April 1975. A security gate had been erected west of the launch pad between March 1976 and January 1977.

8. (S/D) An A-frame crane, associated with the CSS-1 missile system, was identified in March 1976 and a small-chassis van truck was observed in September 1976. GSE was not observed again until 1979, on 23 October, when a three-vehicle, probable communications unit was set up in an operating configuration. A truck-mounted crane was also observed during late 1979. The equipment observed in 1979 is used with both the CSS-1 and CSS-2 missile systems.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Jianshui SSM Launch Site Garrison 9					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	23-55-21N 102-34-56E				

25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0616-02, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Aug 80	Jan 75

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 9 (Figure 11), a new facility in Launch Group B, was still under construction. The garrison is approximately 190 kilometers (km) by road from Kunming SSM RTP and approximately 90 km by road from the Jianshui SSM RIM Facility. The probable launch site garrison is in a steep-walled valley and consists of a GSE storage area and barracks and housing areas.

Launch Area

2. (S/D) Neither a launch pad nor a launch area has been identified within the secured valley that contains other areas of the probable launch site garrison. Jianshui SSM Field Training Position (BE [redacted] is 2.4 km to the southeast and could serve as the launch area for this garrison. The distance between that launch pad and the GSE storage area is shorter than between the same areas of Launch Site Garrison 7.

25X1

GSE Storage Areas

3. (S/D) As of August 1980, a four-bay garage in the barracks and housing area was the only surface GSE storage building that had been constructed. Underground GSE storage is provided by a probable drive-through tunnel and two propellant storage caves. The propellant caves are 450 meters north and 360 meters north-northwest of the barracks area. Each propellant storage cave, however, has two drive-in entrances—one larger than the other and both protected by clamshell-shaped blast doors. It is likely that the propellant tanks have been stored in one area of the cave while the corresponding vehicle complement is stored in another area. Separate entrances have been constructed into both areas of the propellant storage cave. The configuration shown in Figure 11 is tentative and must be qualified, but it is not unlike the configuration of some of the large, separate propellant storage facilities in other launch groups. Propellant tanks were observed outside one of the propellant storage caves at Launch Site Garrison 9 during May 1979. The probable drive-through tunnel is approximately 800 meters north of the barracks area. Narrow-gauge rails extend from both entrances of the tunnel. The tunnel entrances are 140 meters apart.

Other Storage

4. (S/D) A probable POL storage bunker or cave is 40 meters north of the housing area. There are two entrances to underground chambers in the POL storage area and a wall-secured courtyard in front of them. A pumphouse is directly in front on one entrance, and a possible loading dock is in front of the other entrance. A gravity-feed loading area is on a higher elevation to the east, and a dispenser is on a lower elevation to the west. Because the facility is outside the security gate of the garrison, probably too near the housing area, it is unlikely that this facility is used to store propellants or nuclear material.

Barracks and Housing Areas

5. (S/D) The barracks and housing area is along the garrison access road but outside the security gate. Launch Site Garrison 9 contains 1,209 square meters of floorspace in two multistory, dormitory-style barracks for two units. There are two messhalls, but only one basketball court has been constructed.

Construction Status

6. (S/D) Work on the garrison was still underway in August 1980, but approximately one-third of the construction support buildings had been removed. Construction began between January 1975 and December 1976. A very large amount of work occurred during the gap in photographic coverage between 1976 and 1978. Excavation of all of the caves was complete by the end of 1978, and blast doors and headworks at the cave entrances were constructed in 1979. The probable POL storage area and the housing area were complete by November 1979. As of August 1980, all the caves have been completed and camouflage covers and nets have been installed over all the entrances. Except for the construction of a launch area, all work appeared to be complete. If SSM Training Launch Site 1 is the launch area for the garrison, it was constructed between February and November 1978 and is also complete.

Missile System Association and Activity

7. (S/D) CSS-2 missile GSE was observed at the garrison in August 1980.

[redacted] 25X1

LIUQINGKOU SSM LAUNCH COMPLEX (S)

1. (S/D) The Liuqingkou SSM Launch Complex (Figure 1) is in the Lanzhou Military Region in north-central China. Most of the complex is west of and within 21 kilometers (km) of the town of Qilian. The village of Liuqingkou is immediately northwest of Qilian. The complex is in the Qilian Shan (Mountains), an area of very high elevation. Some of the mountain peaks in the area are over 4,570 meters high. The launch site garrisons are situated in mountain valleys above 3,000 meters in elevation. An improved road network serves most areas within the complex. The closest rail-to-road transfer point (RTP), Liuqingkou RTP ([redacted] is 100 km by road south of the complex. A second possible RTP (Liuqingkou RTP, [redacted] is in the town of Shandan, approximately 180 by road to the northeast. Other SSM-related installations in the region include the CSS-3 roll-out-to-launch sites at Delingha and Daqaidam and the field garrison at Datong. 25X1

2. (S/D) The complex currently consists of one launch group of four launch site garrisons, two field training positions (Liuqingkou Field Training Positions, [redacted] and BE [redacted] a launch complex garrison (Liuqingkou Launch Complex Garrison, [redacted] and a command post/bunker facility (Liuqingkou Command Post/Bunker Facility, [redacted] There may be related installations in the town of Qilian. 25X1 25X1 25X1

3. (S/D) Construction of the four launch site garrisons began between March 1968 and November 1970. All the launch areas were usable by the end of 1970. The garrisons were essentially complete by June 1975 but have been improved since then. An intersite communications cable trench linking major installations within the complex was observed in mid-1973. Communications cable trenches linking most of the underground storage facilities within each launch site garrison were constructed in mid-1978. In mid-1980, construction workers were still working within one launch site garrison and in two support areas.

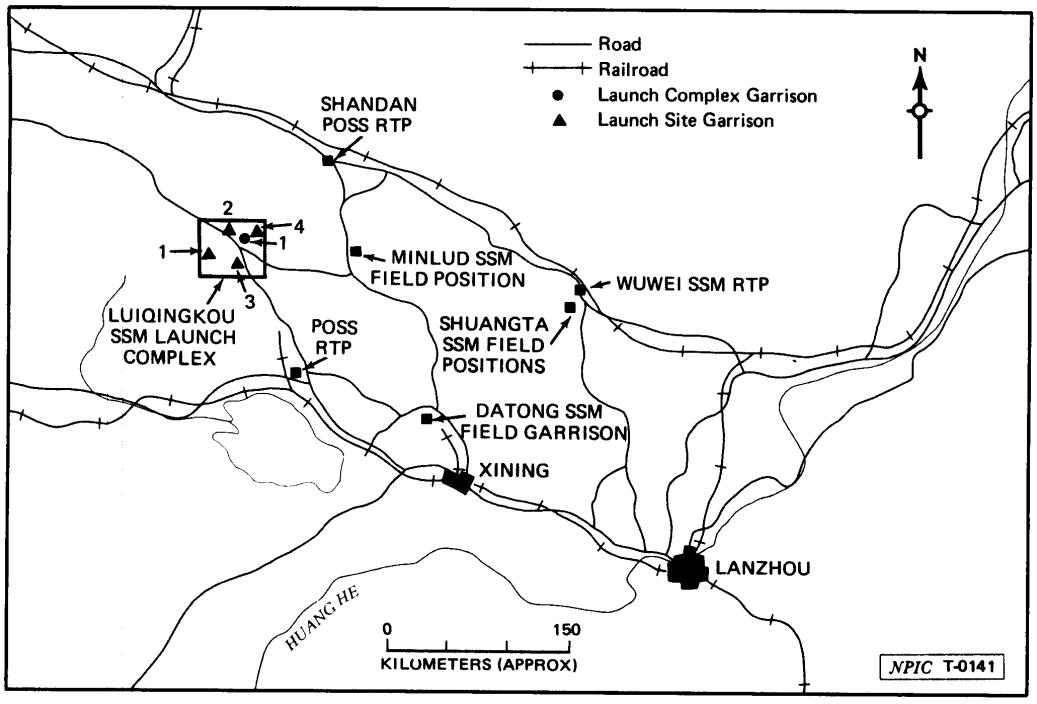

FIGURE 1. LIUQINGKOU SSM LAUNCH COMPLEX, CHINA

LIUQINGKOU SSM LAUNCH SITE GARRISONS 1, 2, 3, AND 4
LAUNCH GROUP A
LIUQINGKOU SSM LAUNCH COMPLEX (S)

ABSTRACT

1. (S/D) Launch Site Garrisons 1, 2, 3, and 4 are component parts of Launch Group A, the only launch group of Liuqingkou SSM Launch Complex. Each launch site garrison is in a mountain valley and consists of a launch area, a GSE storage area, and barracks and housing areas. Each launch area contains a launch pad and a missile loading apron. No subsurface propellant lines connect the launch pad and the two propellant storage caves at each garrison. The large probable drive-through tunnel structure for underground missile and GSE storage is not present at these garrisons. Instead, six to nine caves that are protected by blast doors have been substituted and probably provide a similar amount of underground storage space as a tunnel. Missile GSE has not been observed in these four garrisons; however, CSS-2 IRBM equipment has been identified in the associated launch complex garrison since October 1976.

INTRODUCTION

2. (S/D) Launch Site Garrisons 1, 2, 3, and 4 are the four type C missile support bases in Launch Group A, Liuqingkou SSM Launch Complex. The layout of Launch Group A, which is also designated Regiment 1 of this complex, is shown on the facing page (Figure 2). In addition to the four launch site garrisons, Launch Group A includes Liuqingkou SSM Launch Complex Garrison ( ) a 25X1
type B missile support base, and the specialized and general support areas of a regiment-level headquarters. A hardened command post for Regiment 1 (Liuqingkou Cave Storage Area,) is 25X1
centrally located among the four launch site garrisons. A hardened communications facility (Liuqingkou Hardened Communications Facility,) in two separate valleys is 5 kilometers south of the 25X1
command post. The Liuqingkou Propellant Storage Area) is next to the hardened 25X1
communications facility. There are also two field positions—one on the west edge of the launch group area (Liuqingkou Field Training Position 1,) and one on the east edge (Liuqingkou Field 25X1
Training Position 2,) not shown on graphic) that have been designated to as training 25X1
positions. However, no training or indications of training have been observed at either position. These may be alternate missile firing positions (type I) and still intended for use during hostilities.

Analyst's Comments

3. (S/D) The launch areas of Launch Site Garrisons 1 and 2 and Field Position 1 were prepared for contingency missile firings in 1969 during tensions with the USSR. Trenches were bulldozed, covered with a framework supporting an earthen cover, and heavily camouflaged. These GSE shelters were constructed at both Launch Site Garrisons 1 and 2. The total length of the shelters at each garrison was about 200 meters. These shelters provided space for the GSE of one complete missile launch unit with refire capability or the major elements of two launch units.

4. (S/D) Six to nine caves with blast doors have been used instead of the probable drive-through tunnel seen at most type C missile support bases. The caves, some of which are quite large judging from the size of the spoil pile, offer the same or better amount of space and protection as provided in the more commonly observed drive-through tunnel.

5. (S/D) With the exception of one or two vans, GSE has yet to be observed at any of the launch site garrisons. On the other hand, elements of from two to four CSS-2 launch units have been observed at the nearby complex garrison where there is no building space to store the GSE under cover. It is possible to move and store GSE in the underground storage areas without detection, particularly if movement is accomplished at night.

6. (S/D) The buried cable network between elements of the launch group was constructed from 1973 through 1975. Because of the lack of vegetation and tree cover at this complex, excellent photography was acquired of the buried cable communications network and the two hardened antennas. More importantly, the buried cable communications network under construction in each launch site garrison was imaged in 1978 and found to be much more extensive than that observed at other launch site garrisons. Virtually every cave and bunker was connected. This pattern of a complete hardened communications connection between all elements of the launch site garrison and the hardened regiment headquarters command post probably is similar at all complexes. However, because of the short time necessary to lay the buried cable, the increased vegetation, and the faster growth of vegetation over trenches at other complexes, this prevented detection of many parts of the buried communications network.

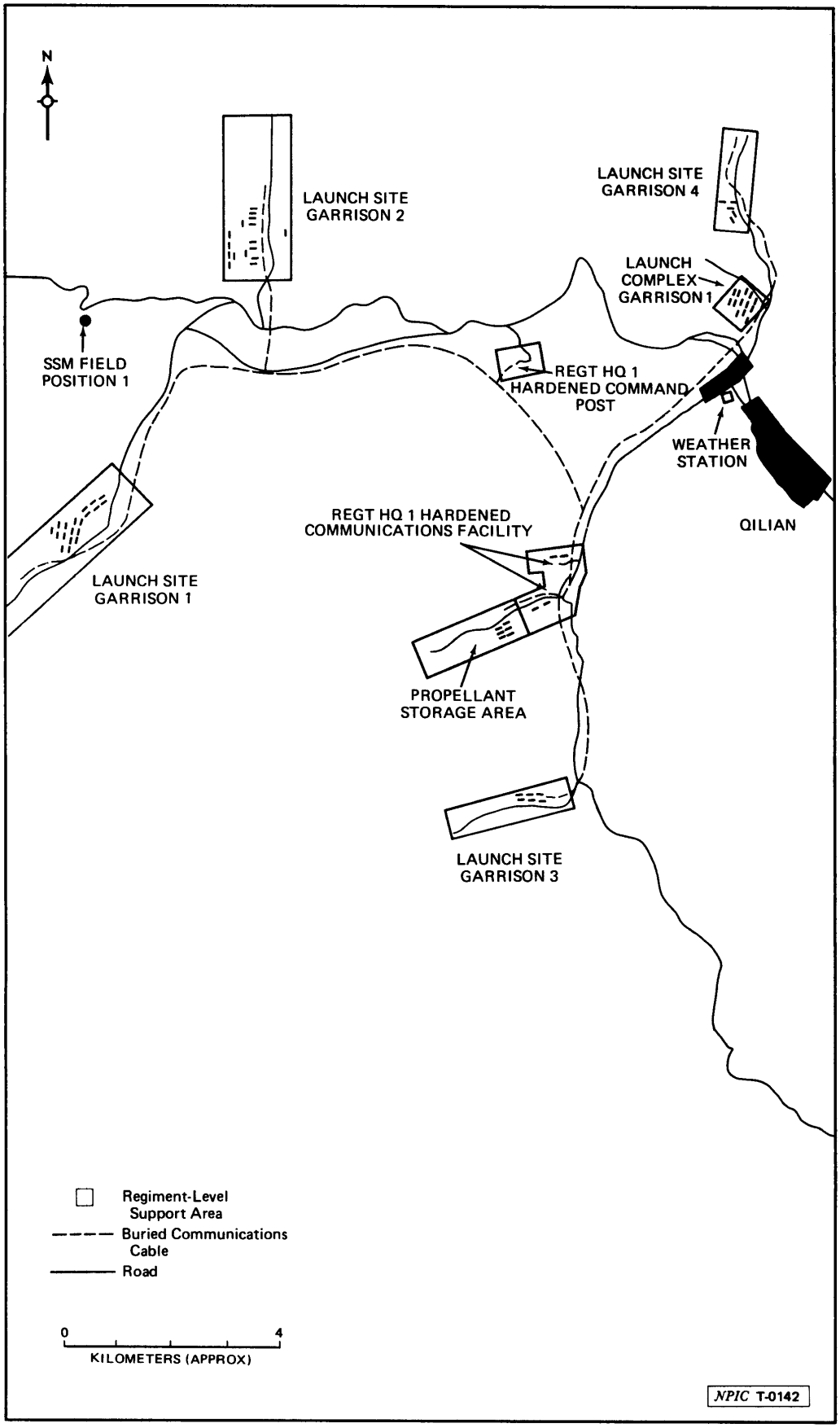

FIGURE 2. LAUNCH GROUP A, LIUQINGKOU SSM LAUNCH COMPLEX

INSTALLATION OR ACTIVITY NAME					COUNTRY
Liuqingkou SSM Launch Site Garrison 1					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	38-10-06N 100-00-06E				25X1

MAP REFERENCE

DMAAC. USATC, Series 200, Sheet 0332-14, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jul 80	Mar 68

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 1 (Figure 3) is one of the four launch site garrisons in Launch Group A, Liuqingkou SSM Launch Complex. The garrison is 28 kilometers by road west-southwest of Liuqingkou. The launch site garrison is in a forested stream valley and consists of a launch area, a GSE area, a temporary construction support area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad and a missile loading apron. The missile loading apron is [redacted] with a loading azimuth of [redacted] No subsurface propellant lines have been constructed. 25X1 25X11

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by a six-bay garage in the barracks and housing area. Underground GSE storage is provided by two propellant storage caves and nine caves with clamshell doors. There are also two drive-in bunkers, apparently without blast doors. The propellant storage caves are 213 meters west and 700 meters east of the launch pad. Nine GSE storage caves are across a stream from the launch pad. One of the caves, 710 meters west of the launch pad, has rail guides extending 29 meters from the entrance.

Other Storage

4. (S/D) A POL storage bunker is approximately 200 meters southeast of the housing/support area near the security gate at the entrance into the launch site garrison.

Barracks and Housing Area

5. (S/D) The barracks and housing area is along the site access road. Launch Site Garrison 1 contains 2,131 square meters of floorspace in 16 barracks supporting four company-sized units. There are four messhalls and two basketball courts. Eight temporary construction support structures were 250 meters east of the launch pad.

Construction Status

6. (S/D) Construction of this launch site garrison began between March 1968 and May 1969. The launch pad was observed complete by November 1970 and had probably been completed in May 1969. Temporary drive-through GSE storage shelters, initially constructed in the late 1960s, had been dismantled by May 1974. The missile loading apron was probably constructed in mid-1974 but was not observed clearly until early 1975. In July 1978, the GSE storage caves were connected by buried communications cable. The original construction support structures were dismantled in 1975. Housing for construction workers and support buildings were again erected in 1976 and 1977 to support new cave construction. As of July 1980, the date of the latest imagery used for this report, the caves were almost complete. The barracks and housing area was expanded gradually from a one company-sized area in 1970 to four company-sized areas in late 1975.

Missile System Association and Activity

7. (S/D) No SSM GSE has been observed at Launch Site Garrison 1. Small numbers of cargo trucks have been observed on numerous occasions. The launch area and temporary GSE storage structures were constructed in 1969. The launch area has probably been usable for missile launch firings since early 1969.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Liuqingkou SSM Launch Site Garrison 2					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	38-14-00N 100-03-51E				

25X1

MAP REFERENCE

DMACC. USATC, Series 200, Sheet 0332-14, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jul 80	Mar 68

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 2 (Figure 4) is one of the four launch site garrisons in Launch Group A, Liuqingkou SSM Launch Complex. The garrison is 20 kilometers by road west-northwest of Liuqingkou. The launch site garrison is in a barren valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains an [redacted] launch pad. The missile loading apron is [redacted] meters with a loading azimuth of [redacted] No subsurface propellant lines have been constructed. 25X1 25X1

GSE Storage Areas

3. (S/D) Surface GSE storage is provided by a six-bay garage in the housing area. Subsurface GSE storage is provided by two propellant storage caves and six other GSE storage caves, all with clamshell blast doors. There are also three drive-in bunkers without clamshell blast doors.

Other Storage

4. (S/D) A POL storage bunker is 244 meters southwest of the housing area.

Barracks and Housing Area

5. (S/D) The barracks and housing area is along the site access road. Launch Site Garrison 2 contains 2,056 square meters of floorspace in 16 barracks supporting four company-sized units. There are four messhalls and one basketball court.

Construction Status

6. (S/D) Construction of this launch site garrison began between March and August 1968. The launch pad was probably already complete in November 1970. Temporary GSE storage bunkers had also been constructed in 1969/70. The missile loading apron was probably constructed in mid-1974. Except for one cave, most of the underground GSE storage areas were complete in May 1974. Although many of the temporary construction support structures had been removed in 1972, they were all dismantled by late 1976. In July 1978, an intrasite buried communications cable system was installed between all the underground GSE storage areas. During January and February 1979, personnel were observed in and near the housing area with a high count of 285 people in late January. The barracks and housing area was expanded gradually, from one company area in 1970 to four company-sized areas by the end of 1975.

Missile System Association and Activity

7. (S/D) The launch area was usable for contingency missile launch firings, and temporary GSE storage bunkers were constructed in the May 1969—November 1970 interval in photographic coverage. A cab-over-engine van truck, possibly associated with the CSS-2 missile system, was observed at Launch Site Garrison 2 on [redacted] No other missile or missile-related equipment has been observed. 25X1

INSTALLATION OR ACTIVITY NAME					COUNTRY
Liuqingkou SSM Launch Site Garrison 3					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	38-05-09N 100-10-42E				25X1

MAP REFERENCE

DMAAC. USATC, Series 200, Sheet 0332-14, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jul 80	Dec 69

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 3 (Figure 5) is one of the four launch site garrisons in Launch Group A, Liuqingkou SSM Launch Complex. The garrison is 16 kilometers by road south-southwest of Liuqingkou. This launch site garrison is in a sparsely wooded stream valley and consists of a launch area, GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [redacted] launch pad and a missile loading apron. The missile 25X1
loading apron is [redacted] with a loading azimuth of 90 degrees. No subsurface propellant lines have 25X1
been constructed.

GSE Storage Area

3. (S/D) No surface GSE storage buildings are present at this garrison. Subsurface GSE storage consists of ten caves with clamshell doors, two caves have an adjacent vented earth-mounded structure. There are also two drive-in bunkers, apparently without blast doors. The caves which are for propellant storage have not been identified at this garrison; however, the three caves west of the launch area probably serve that function. Propellant storage tanks were observed in that area of the garrison.

Other Storage

4. (S/D) A POL storage bunker is 91 meters west of the housing area.

Barracks and Housing Area

5. (S/D) The barracks and housing area is along the site access road. Launch Site Garrison 3 contains 518 square meters of floorspace in four barracks supporting one company-sized unit. There are a messhall and a basketball court.

Construction Status

6. (S/D) Construction of this launch site garrison began between December 1969 and November 1970. The launch pad was complete by November 1970. The missile loading apron was constructed in mid-1974. Cave construction was complete, and all of the construction support structures had been removed by January 1975. In July 1978, the GSE storage caves were connected by a buried communications cable. Otherwise, there have been few changes observed since 1975.

Missile System Association and Activity

7. (S/D) No missile or missile-related equipment has been observed at Launch Site Garrison 3. Small numbers of cargo trucks have been observed on several occasions. The launch area was usable for contingency missile launch firings in 1970.

INSTALLATION OR ACTIVITY NAME					COUNTRY
Liuqingkou SSM Launch Site Garrison 4					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	38-13-48N 100-15-48E				25X1

MAP REFERENCE

DMAAC. USATC, Series 200, Sheet 0332-14, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
Jul 80	Dec 69

BASIC DESCRIPTION

Location

1. (S/D) Launch Site Garrison 4 (Figure 6) is one of the four launch site garrisons in Launch Group A, Liuqingkou SSM Launch Complex. The garrison is 6 kilometers by road northeast of Liuqingkou. The launch site garrison is in a stream valley and consists of a launch area, a GSE storage area, and barracks and housing areas.

Launch Area

2. (S/D) The launch area contains a [ ] launch pad and missile loading apron. The missile loading apron is [ ] with a loading azimuth of [ ] No subsurface propellant lines have been constructed. 25X1 25X1

GSE Storage

3. (S/D) The launch site garrison does not contain surface GSE storage. Subsurface GSE storage consists of eight caves with clamshell blast doors. There is also one drive-in bunker or cave, apparently without blast doors. One cave, 1,050 meters northeast of the launch pad, has rail guides extending [ ] from the cave entrance. The caves which are for propellant storage could not be identified; however, they are probably among the four which are south of the launch area. 25X1

Other Storage

4. (S/D) A POL storage bunker is approximately 2,125 meters southwest of the launch pad.

Barracks and Housing Area

5. (S/D) The barracks and housing area consists of only one barracks with a kitchen section, a small storage building, and a basketball court. Other housing space is probably provided at the SSM Complex Garrison [ ] 25X1

Construction Status

6. (S/D) Construction of this launch site garrison began between December 1969 and November 1970. The launch pad was probably complete in early 1970. Most of the GSE storage caves were complete by January 1975. The missile loading apron was constructed in May 1975. In June 1978, most of the GSE storage caves were connected by a buried communications cable. The construction support structures had been dismantled by early 1977.

Missile System Association and Activity

7. (S/D) Security had already been established when the garrison was first seen on medium-resolution imagery. No missile or missile-related equipment has been observed. The launch area was usable for contingency missile launch firings in 1970.