Secret

NOFORN

25X1

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

imagery analysis report

High-Frequency Communications Facilities Supporting Licheng Naval Headquarters, Beijing MR, China (S)

Secret

WNINTEL

Z-12081/83
IAR-0047/83
AUGUST 1983
Copy 61

25X1

HIGH-FREQUENCY COMMUNICATIONS FACILITIES SUPPORTING LICHENG NAVAL HEADQUARTERS, BEIJING MR, CHINA (S)

INTRODUCTION

1. This report provides a imagery-derived description and functional analysis, based on a review of available information through April 1983, of two large, adjacent, high-frequency (HF) radio communications (radcom) facilities near Licheng, Shanxi Province, in the southern part of the Beijing Military Region (MR). These two radcom stations are probably involved in naval communications for the Licheng National Naval Alternate Headquarters/Underground Complex and, together with the underground complex, are in close proximity to two other types of national-level communications systems: the Beijing-to-Guangzhou national buried cable trunkline, and the national radio relay (radrel) system. (S/WN) 25X1

2. The Licheng Radcom Transmitter Station and the Lucheng Radcom Receiver Station are capable of providing the Licheng Headquarters/Underground Complex with long-range, HF, point-to-point communications to the naval headquarters in Beijing, all the fleet headquarters, the LF/VLF broadcast stations that support naval command, control, and communications (C^3) operations, and possibly to the Pucheng VLF/LF Station Long-range HF antennas at these two radcom stations also appear to be oriented possibly toward the Yanqing Sigint (signal intelligence) and Radcom Receiver Station/Bunker , elements of the Chinese Strategic Rocket Forces (CSRF) at Xian SSM Technical Training Facility and at Luanchuan SSM Headquarters General , and the Fangxian Alternate National Military Command Center Complex of the General Staff Department (GSD), via the associated communications facilities at Xiangyang Radcom Transmitter Station North and Oumiao Radcom Receiver Station (S/WN) 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1

DISCUSSION

3. Both Licheng and Lucheng radcom stations have long-range HF antennas oriented toward most of the major naval facilities in China, the Fangxian Complex, and possibly towards the CSRF elements at Xian and Luanchuan (Figure 1). In addition, HF antennas appear to be oriented toward the Tongxian Radcom Transmitter Stations Southwest and West-Southwest (the scale of Figure 1 will not permit all these sites to be plotted) and the Dongba Radcom Transmitter Stations Southeast and South southeast of Beijing. Microwave parabolic dish antennas at two of these radcom stations are oriented toward downtown Beijing, and all four installations contain large HF antennas oriented towards Licheng, suggesting that the radcom stations are possibly involved in naval communications. The other antennas at Licheng and Lucheng radcom stations are oriented toward the Beijing, Shenyang, Jinan, Nanjing, Fuzhou, and Guangzhou MR headquarters, providing direct HF communications between coastal MR commanders and the National Naval Alternate Headquarters/ Underground Complex (Figure 1). The Licheng and Lucheng radcom stations are probably connected by buried telecommunications (TC) cable to the National Naval Alternate Headquarters/Underground and to naval headquarters in Beijing by means of the national buried trunkline (Figure 2). (S/WN) 25X1 25X1.1

DESCRIPTION

4. The Licheng Radcom Transmitter Station is 4.2 nautical miles (nm) west-southwest of Licheng and 9.9 nm south-southwest of the Licheng National Naval Alternate Headquarters/Underground Complex. The station consists of two, separate, control/support areas and a large HF antenna field. The two control/support areas appear to be connected by tunnel, which probably houses the transmitter for the HF antennas. The northern control area contains one multistory administration building, one L-shaped multipurpose building (auditorium/messhall/barracks), four quarters-type buildings, five support buildings, an adit to the connecting tunnel, and one control building partly underground. The southern control area contains one multistory administration building, one auditorium, two messhalls, six barracks, two quarters-type buildings, and the other adit. The antenna field contains six double rhombics (RGD), six single rhombics (RG), ten phased dipoles, eight quadrants (angle dipole), 18 horizontal dipoles (VGD), and one log periodic antenna (Figure 3 and Table 1). (S/WN)

25X1

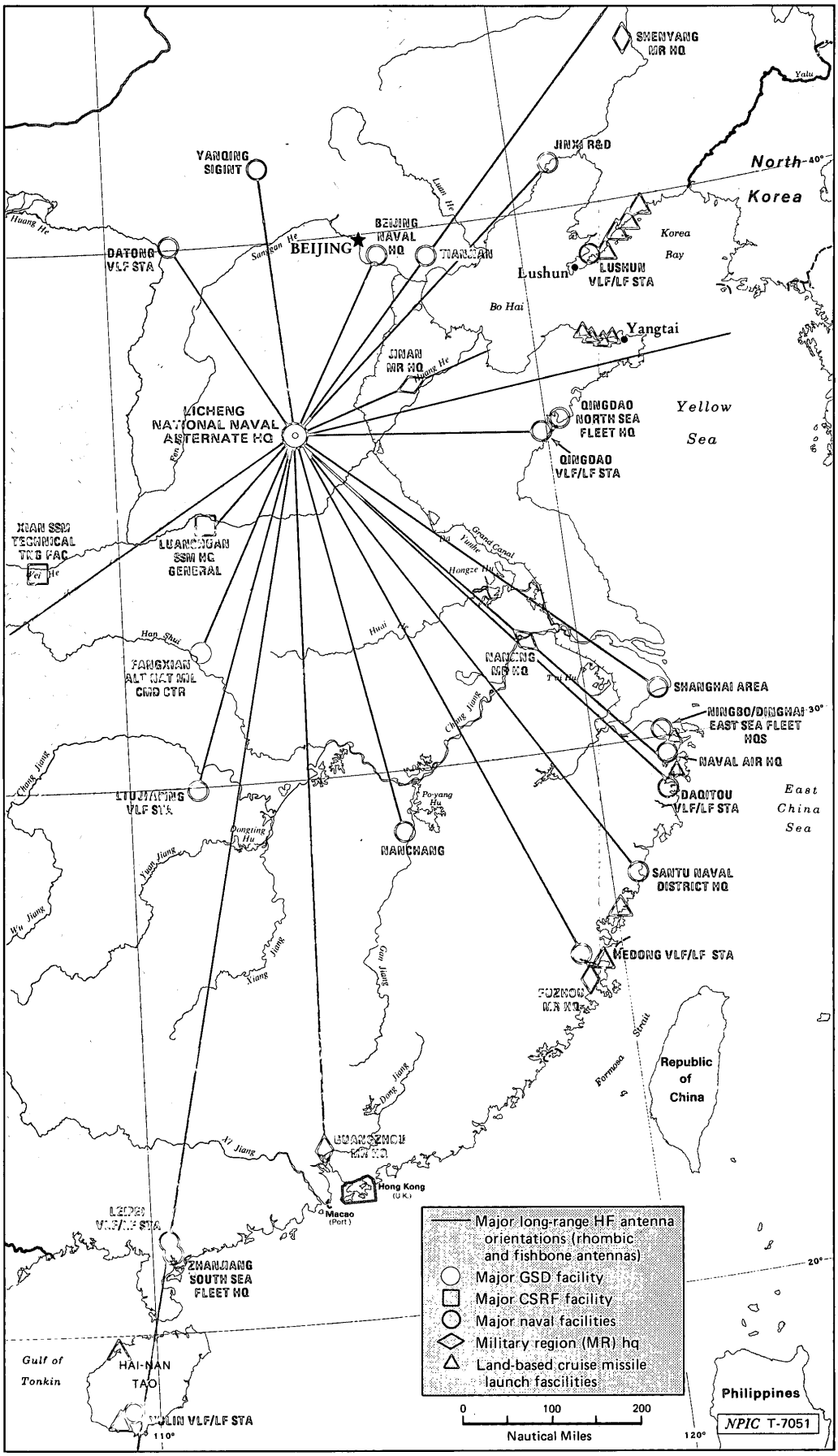

FIGURE 1. MAJOR FACILITIES ASSOCIATED WITH LICHENG NATIONAL NAVAL ALTERNATE HEADQUARTERS/ UNDERGROUND VIA HF COMMUNICATIONS

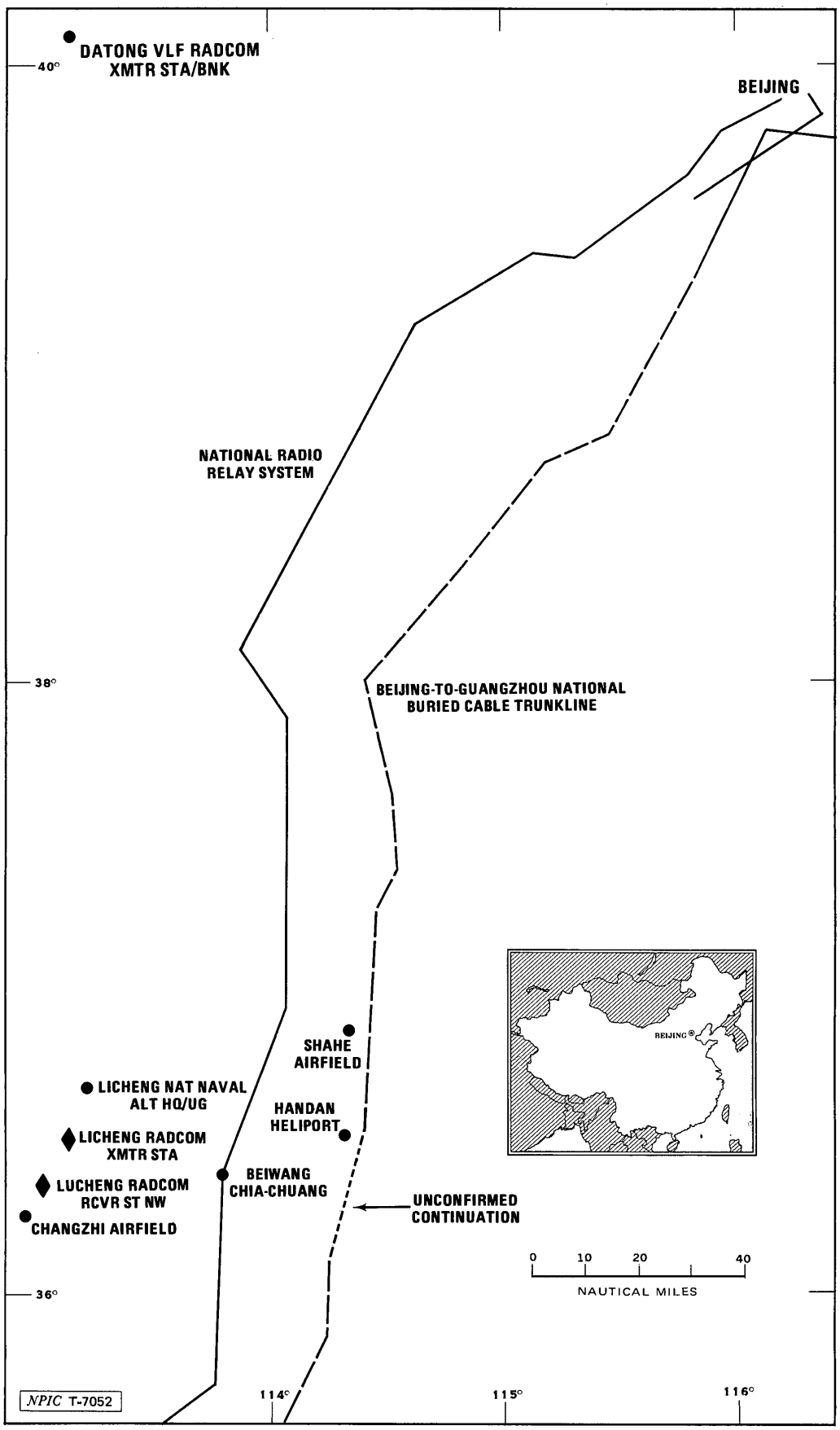

FIGURE 2. HF RADCOM STATIONS AND ASSOCIATED FACILITIES/COMMUNICATION SYSTEMS

Next 2 Page(s) In Document Denied

Table 2.
HF Antennas at Lucheng Radcom Receiver Station NW, China
(Items keyed to Figure 4)

	Major Axis (m)	Minor Axis (m)	End Leg Length (m)	Side Pole Height (m)	End Pole Height (m)	Firing Azimuth (deg)	Pole Separation (m)	Tilt Angle (deg)
Double Rhombic (RGD) Antennas								
A	259	157	146	37	46		29	
B	258	156	145	36	46		29	
C	260	156	144	42	46		29	
D	260	157	145	36	46		29	

25X1

	Overall Length (m)	Distance Between End Poles (m)	Distance Between Side Poles (m)	Height of Poles (m)	Receiving Azimuth (deg)
Fishbone Antennas					
1	96	51	48	25	
2	96	52	48	26	
3	95	52	48	25	
4	95	52	48	25	
5	95	52	47	27	
6	96	52	48	25	
7	96	52	48	24	
8	96	25	48	25	
9	94	26	47	27	
10	95	52	48	27	
11	95	52	47	27	

25X1

Dual-Shunted Angle Dipole Antennas (Frequence Diverse)	**Pole Height (m)**	**Distance Between Poles (m)**	**Remarks**
AA	22	39	
BB	22	39	Omni-Directional
CC	22	39	
DD	22	39	

This table is classified SECRET/WNINTEL in its entirety.

5. The Lucheng Radcom Receiver Station Northwest, 8.7 nm north-northwest of Lucheng and 11.8 nm south-southwest of the National Naval Alternate Headquarters/Underground Complex, consists of a single control/support area and a large HF antenna field. The fence-secured control/support area is strategically placed in a ravine for protection and contains one partly revetted control building with reinforced masonary walls, two administration buildings, five barracks, two messhalls, two storage sheds, one L-shaped vehicle storage shed, and nine support buildings. The antenna field contains four double rhombics (RGD) (receive only), nine 3-3-3 fishbones, two 2-2-2 fishbones, and four dual-shunted angle dipoles (frequence diverse) (Figure 4 and Table 2). (S/WN)

IMAGERY ANALYST'S COMMENTS

6. Imagery strongly suggests that the two radcom stations discussed in this paper are involved in naval-related communications for the Licheng National Naval Alternate Headquarters/Underground Complex.

25X1
25X1

7. The apparent hardening of both the transmitter and receiver/control areas at the two stations indicates the importance given to the function of these two sites. The transmitter is probably located within the hardened tunnel complex at Licheng; the partly revetted receiver/control building at Lucheng is located in a natural ravine. This placement provides protection from surface or near-surface nuclear blasts as well as from tactical air strike. (S/WN)

REFERENCES

All applicable satellite imagery acquired from [redacted] was used in preparation of this report. (S/WN) 25X1

The author wishes to acknowledge the support of the National Security Agency, [redacted] 25X1

Comments and queries regarding this report are welcome. They may be directed to [redacted] East Asian Forces Division, Imagery Exploitation Group, NPIC, [redacted] 25X1 25X1