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Imagery Analysis Monthly Review

February 1980

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Imagery Analysis Monthly Review

February 1980

This publication of the Office of Imagery Analysis contains substantive findings and analytical judgments that were derived principally from analysis of imagery. Although information from other sources of intelligence may be included for background, this publication does not reflect an all-source assessment and has not been formally coordinated within CIA. (U)

Comments and queries on the contents of this publication are welcomed. They should be directed to the analyst whose name and green line extension appear after each article. (U)

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Soviets Construct Specialized Driver Training Areas at SS-20 Bases

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The Soviets have constructed specialized vehicle driver training areas at five SS-20 mobile IRBM bases, and there are indications that they will soon be constructed at others. These areas appear to be designed to train drivers of the SS-20 transporter-erector-launchers (TELs) and other launch-related vehicles in entering and exiting garages and in aligning the vehicles in presurveyed areas prior to launch. These training areas could be used to maintain driver proficiency of existing personnel or for the initial training of newly assigned personnel. However, it is unclear why these areas have only recently begun to be constructed as some of the SS-20 bases have been considered to be operational for over 15 months.

There are two types of specialized training areas. One type consists of building facades with building outlines on the ground for a sliding-roof building (SRB) and a single bay of a three-bay garage. Training areas of this type were identified on 24 January 1980 imagery at Drovyanaya Mobile IRBM Bases 1, 2 and 3. The other type consists of graded areas where leveled impressions have been made in the ground for the placement of the TEL's leveling and suspension isolation jacking plates. Training areas of this type were identified at Drovyanaya Mobile IRBM Base 3 and at Verkhnaya Salda Mobile IRBM Base 1

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Air Defense Tracking/Fire Control System Under Development at Sosnovyy Bor, USSR

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Imagery analysis of an RDT&E facility at Sosnovyy Bor, located 70 kilometers west of Leningrad, indicates that components of an air defense tracking/fire control system have been undergoing tests for the past two years. The correlation of imagery physical facilities, and subordination of the Sosnovyy Bor facility indicates that the facility is designed to develop passive and low-power active electro-optical devices for the Soviet military. Sosnovyy Bor is a branch of the State Optical Institute i/n Vavilov which is a scientific research institute subordinate to the Ministry of Defense Industry

An active test program under way on a linear range at Sosnovyy Bor since May 1978 has involved a device mounted in a railcar and a target airframe mounted on a dolly at the end of the range. The airframe has been positioned at various aspect angles to the railcar. Standard Soviet modulation transfer function targets, used to evaluate scanning imaging systems, are mounted on a reference panel located 33 meters behind the target airframe and a radial target is mounted on a nearby tower.

Construction of the Sosnovyy Bor facility began by early 1965 and has continued at an increased pace since 1973. It consists of an R&D area, the linear test range 2,600 meters long, and a fan-shaped test range 650 meters long.

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The R&D area consists primarily of laboratories and administrative, engineering/assembly, and support buildings. It is probably involved with specialized design, fabrication, and testing of components such as semiconductors, lenses, and mirrors for electro-optical and laser devices. One building located in this section may contain a test chamber used to simulate dynamic engagements during the evaluation of guidance and control systems and devices such as optical and infrared seekers.

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First Test Flight of Soviet Typhoon Missile

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the first test flight of a Typhoon missile occurred from Launch Facility D at the Nenoksa Missile Test Center. The Typhoon missile is thought to be a three-stage solid propellant missile that the Soviets are developing for deployment on the Typhoon submarine. The first Typhoon submarine is currently under construction at the Severodvinsk Shipyard. Although early indications are that this first missile malfunctioned and impacted only 1,700 nautical miles downrange, it is estimated to have a design range of at least 4,000 nautical miles.

the cover had been removed from the missile erector at Launch Facility D, and that both the erector and launch tube cap were cleared of snow--indicating that the Typhoon missile had already been loaded into the launch tube obtained about 11 hours after the launch showed evidence of burn activity on the roof of the launch building. In addition, both a large crane and a flatcar with a launch tube maintenance hoist that were in Launch Facility D had been removed

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Launches from Nenoksa are the second phase in the three-phase development cycle for new naval missiles. The first phase--the underwater launch or "pop-up" testing for the missile--started for the Typhoon missile in early 1978 and was completed by mid-1979 in the Black Sea at Balaklava Missile Test Center. Following the pop-up testing, the land-based flight tests, such as the one take place from Nenoksa. About the time the tests are completed at Nenoksa, the missile will be sea launched from a modified test submarine. Assuming no major problems occur, we expect this third phase in the missile development cycle to begin sometime in late 1981.

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Self-Propelled Tracked MRLs Recently Identified in China

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What appear to be 130-mm multiple rocket launchers (MRLs) mounted on a tracked chassis were recently identified on satellite photography of northern China. The tracked self-propelled MRLs are very similar to those shown in the *PLA Pictorial* and in *Commilit*, a military magazine published in Hong Kong. *Commilit* identified the weapon system as the 19-tube, 130-mm MRL mounted on an M-1967 armored personnel carrier chassis. The tracked MRLs seen on satellite photography have measurements which closely conform to the know dimensions of the 130-mm MRL pod and the M-1967 chassis. Previously, the 130-mm MRL was thought to exist only in a truck-mounted version.

These MRLs, along with tracked self-propelled howitzers first identified on overhead photography in early 1978, are deployed in an artillery regiment at Xincheng. This regiment is the only known tracked artillery unit in China. A review of previous imagery of the Xincheng area indicates that both types of weapons have been deployed here since the early 1970s. The artillery regiment at Xincheng is subordinated to an armored division and appears to be organized into two 18-gun howitzer battalions and an 18-launcher 130-mm MRL battalion. A few additional tracked MRLs also may be present, but it could not be determined if they are the same as the 130-mm MRL.

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Production and deployment of both types of vehicles apparently occurred in the early 1970s. No additional deployment has been detected since November 1973, suggesting the Chinese may have produced only enough vehicles to form one regiment. They may have decided to concentrate their limited tracked vehicle production capacity on tanks and APCs or they may have experienced technical problems with the weapon systems.

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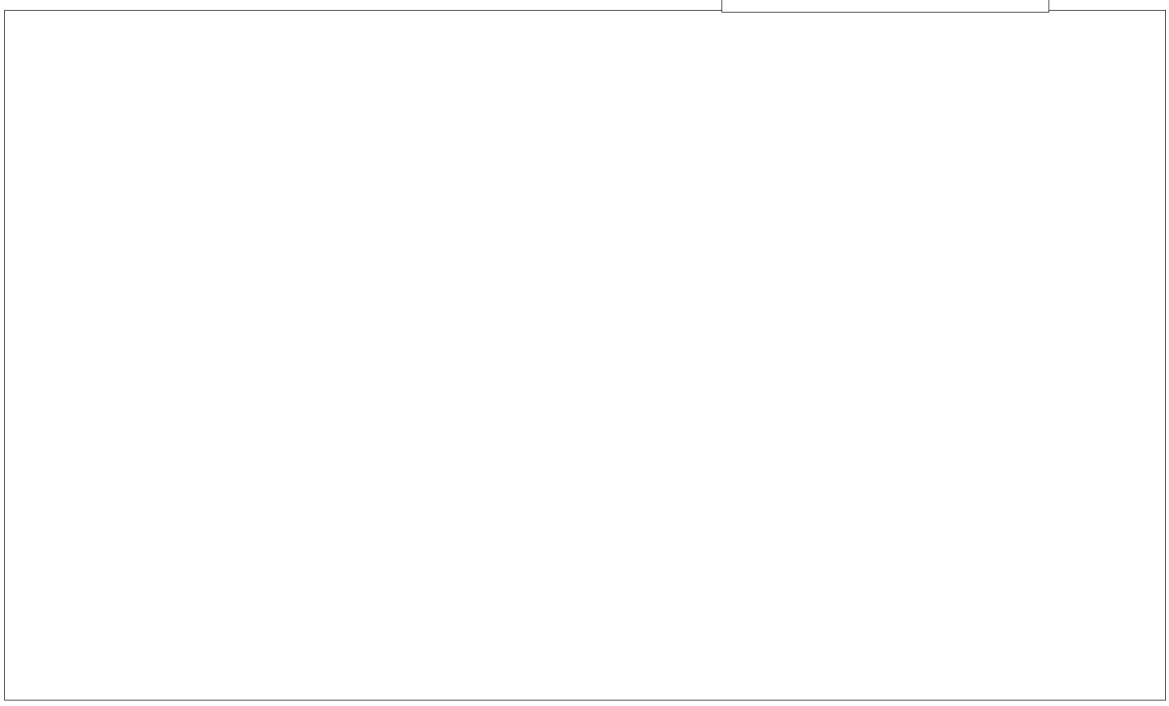

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New Generation Chinese Missile Ground Support Equipment

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New generation four-axle vehicles recently have been identified with some Chinese IRBM units. These vehicles are probably intended to improve the off-road mobility and load carrying capability of the IRBM units. They are being used as prime movers, propellant transporters, and launch stand transporters.

These vehicles are very similar to a four-axle, cab-over-engine prime mover shown in a photograph released by the Chinese in 1974, and in all likelihood have the same performance characteristics. The vehicle shown in the photograph is about 1 meter longer than the one seen with the IRBM units, has a double cab over engine, and has two wheels on each front axle and four wheels on each of the two rear axles. It is reported to have a 500-horsepower engine and apparently was designed as a prime mover.

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Photographs of the four-axle vehicle have been released by the Chinese several times since 1974, and production has been ascribed to various motor vehicle plants. However, we have not observed the vehicle being produced at any of these plants.

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New Generation Chinese Four-axle Prime Mover (U)

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Anechoic Research Chamber Identified in China

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A building which likely contains an anechoic chamber has been identified on satellite imagery of the Nanjiang University. Anechoic chambers are reflection-free environments in which antenna radiation patterns can be studied. They may also be used for sound propagation studies. Anechoic chambers are necessary for the study and development of sophisticated electronics equipment.

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The existence of an anechoic chamber at Nanjiang was revealed in a 1979 issue of *China Pictorial*. This is probably also the same chamber that was reported in Chinese scientific publications to have internal dimensions of 13.7 by 1.1 by 9.0 meters and radio-signal-absorbing walls 1.2 meters thick.

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At Nanjiang University, a windowless building that is about 32 meters long, 19 meters wide and 13 meters high probably contains the anechoic chamber pictured in the Chinese publication.

Anechoic Chamber, Nanjiang University, China

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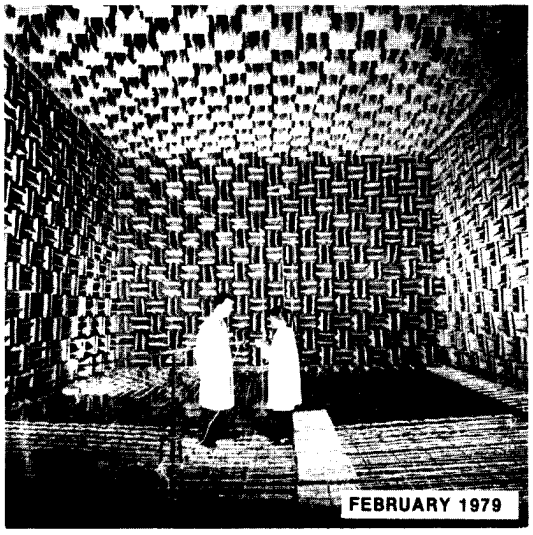

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New Explosives Plant Identified in Egypt [redacted] 25X1

A new Egyptian explosives production plant in a mid-to-late stage of construction has been identified on imagery of late October 1979. This plant, Egypt's second major explosives production plant, appears to be designed to produce nitroglycerin, single/double-base propellants, and composite propellants. The new plant is located about 10 kilometers north-northeast of Cairo and is near Egypt's other major explosive plant, Abu Zabal Explosives Plant MF 18. Plant MF 18 produces military propellants and industrial explosives. [redacted]

In recent years Egypt has attempted to expand its arms production industry. The completion of this new plant, probably by late 1980, will give the Egyptians the capability to produce composite propellants, which could be used as fuel for various types of missiles including antitank, air-to-surface, surface-to-air, and tactical surface-to-surface. [redacted] 25X1

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New North Korean DMZ Defense Barrier

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Recent photography shows that North Korea has nearly finished the construction of a defensive barrier along the Han estuary opposite South Korea. Construction of the barrier began by August 1979 and appears to be part of a massive effort to strengthen the North's static DMZ defenses. On the segments covered by satellite imagery, the barrier forms a continuous defensive line, except where terrain is so steep that it serves as a natural obstruction to vehicles.

For years North Korea has placed heavy emphasis on its forward defenses. Elaborate underground facilities have been constructed to support its large force of infantry and fire support units deployed along the Han estuary and elsewhere in the forward zone. This active defense was augmented near the DMZ by constructing antitank barriers in streambeds--the points most vulnerable to an attack. But no attempt had been made to form these isolated obstacles into a continuous barrier like the new defense line.

The barrier consists of segments of various types configured to deny passage to a mechanized invasion force. In low flat areas the barrier consists of a trench or trench and earthen wall combination, and, where the terrain is hilly, steep escarpments have been cut along the slope. Existing dams have been incorporated into the barrier. Some sections of the barrier have been reinforced with what appears to be stone or masonry. Measures are also under way to install obstructive devices where streams and roads cut through the barrier. Dragon's teeth have been observed in at least one streambed, and drop blocks are being emplaced along roads that intersect the barrier.

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Recent satellite coverage shows this barrier extending along the Han estuary from the Yesong River to the western terminus of the DMZ, a distance of over 30 kilometers. There are indications it may eventually be extended to other areas of the DMZ. Six kilometers of barrier construction was observed immediately west of the Imjin River--the only other section of the DMZ covered on recent satellite imagery. In addition, several US military reports also indicate the North Koreans are strengthening the barrier defenses elsewhere along the DMZ.

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It is unclear why North Korea perceives a need for these new defensive barriers. Certainly, the South's armed forces have not recently shown major improvement in their offensive capability. However, the South has been building an antitank barrier system on their side of the DMZ for over a year, and the North's new line of defense may be in response to this.

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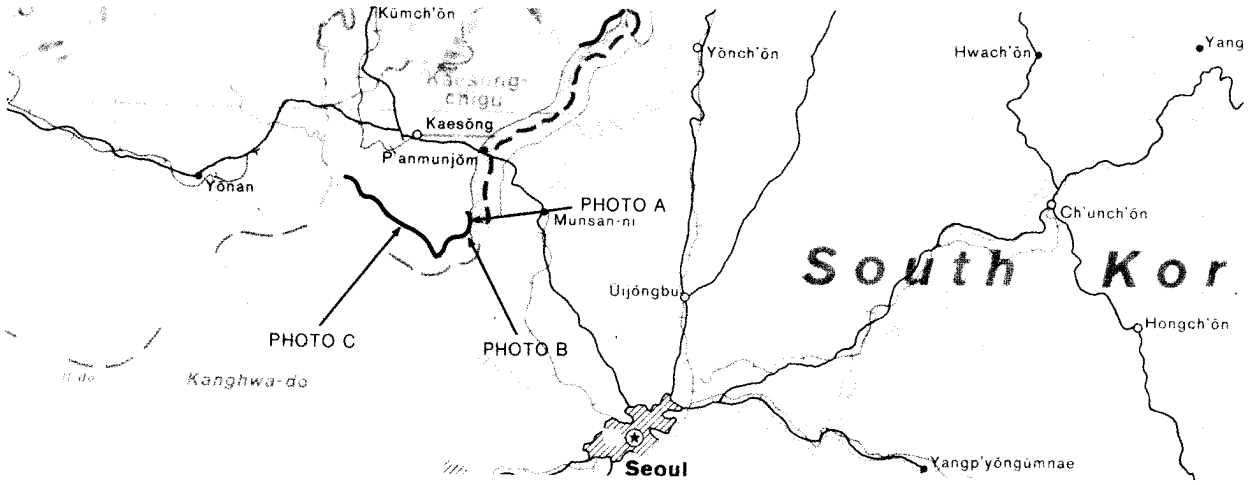
New Defensive Barrier
Along Korean DMZ [redacted] 25X1



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New OIA Publications

The following reports have been published by the Office of Imagery Analysis since the last issue of the *Imagery Analysis Monthly Review*.

Imagery Research Papers

1. IS 80-10176K *Poland's Petroleum Refining Industry*, January 1980 (Top Secret RUFF 25X1 25X1
2. IS 80-10009J *Soviet T-72 Tank Production*, January 1980 (Top Secret RUFF 25X1 25X1

Imagery Analysis Memorandums

1. IS 80-10021, *Oilfield Development Near Dagang (Ta-kang), China* (Secret 25X1
2. IS 80-10025K, *Urban Area Size, Land Use Data, Industrial Clusters, and Civil Defense Training Sites in 57 Soviet Cities* (Top Secret RUFF 25X1 25X1
3. IS 80-10023K, *Construction Status of Imported Ammonia Plants in the Soviet Union* (Top Secret RUFF) 25X1
4. IS 80-10008K *Specially Designed Support Buildings for the SS-18 ICBM System* (Top Secret RUFF 25X1 25X1
5. IS 80-10013JX, *Evidence of Fire at Pechora Ballistic Missile Early Warning Radar* (Top Secret RUFF 25X1 25X1
6. IS 80-10015K, *Differences Between the Original and the Modified Type IIIX Launch Control Facilities at Soviet ICBM Complexes* (Top Secret RUFF 25X1 25X1
7. IS 80-10018K, *Analysis of the SS-18 ICBM Umbilical Frame* (Top Secret RUFF 25X1 25X1
8. IS 80-10024J *Production of Space- and Missile-Related Components at Omsk Airframe Plant 166, USSR* (Top Secret RUFF 25X1 25X1
9. IS 80-10026K, *Possible Calibration Device Identified for 64-Element Telemetry Array* (Top Secret RUFF 25X1 25X1
10. IS 80-10016K, *Photographic Assessment of Changes at the Makat at ASM Impact Area, May 1976 Through May 1979* (Top Secret RUFF) 25X1
11. IS 80-10002K, *Military Exports from Nikolayev Port Facilities South* (Top Secret RUFF) 25X1
12. IS 80-10004K, *Rhodesia's Armor Inventory* (Top Secret 25X1 25X1

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13. IS 80-10027K, *Soviet Brigade Activity in Cuba--18 December 1979 through 3 February 1980* (Top Secret RUFF) 25X1

14. IS 80-10037K, *Status of Surface-to-Air Missile Sites in Ethiopia* (Top Secret RUFF) 25X1

15. IS 80-10033J, *Recent Trends and Improvements in Soviet Signals Equipment* (Top Secret RUFF 25X1

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