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NORTH KOREA COUNTRY HANDBOOK

MARINE CORPS INTELLIGENCE ACTIVITY

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SUBJECT: Country Handbook—North Korea

1. This handbook provides essential information on North Korea. It is intended to provide Marines and other U.S. military personnel with a base of information for conducting effective operations on the Korean Peninsula. By making this handbook unclassified and in a cargo-pocket size format, the handbook will fulfill the need for a "field" ready-reference publication. Local reproduction is authorized.
2. This product is in response to PR#J582-97-0002. The Information cutoff date for this handbook is 30 April 1997.
3. This handbook is one of several scheduled for publication by the Marine Corps Intelligence Activity.
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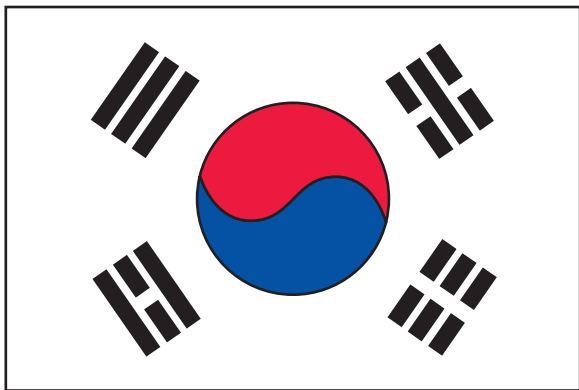
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SECTION 1

KOREAN PENINSULA GENERAL INFORMATION



National Flag of the Republic of Korea



National Flag of the Democratic People's Republic of Korea

North Korea—Political and Economic Overview

The long form name of North Korea is the Democratic People's Republic of Korea (DPRK). The DPRK is a Communist state led by a Stalinist type dictatorship, with its capital city as Pyongyang.

Administrative divisions include nine provinces (do, singular and plural); Chagang-do, Hamgyong-namdo, Hamg-yong-pukto, Hwanghae-namdo, Hwanghae-pukto, Kangwon-do, Pyongan-pukto, Pyongan-namdo, Yanggang-do; and three special cities (jikhalsi, singular and plural); Kaesong-si, Nampo-si, and Pyongyang-si.

In August 1945, the Japanese in Korea surrendered to the former Soviet Union, which gained control of the Korean peninsula south to the 38th parallel. In August 1948, supposedly following general elections throughout the peninsula, the DPRK was established, with Kim Il-song heading the central government. These factitious elections are the basis for Pyongyang's claim as the only legitimate government of Korea, and Pyongyang has made a national goal of reunifying the country on its terms. In pressing this claim, the DPRK has engaged in a political, economic, and military competition with the Republic of Korea (ROK). However, in any comparison except military power, Pyongyang is a poor second.

On Saturday, 24 June 1950, DPRK forces invaded the ROK. The United States, acting with a mandate from the UN, took the lead in defending the ROK. The Chinese entered into the fighting, and the war's inconclusive end led to a return to the status quo at the 38th parallel. An armistice, signed in July 1953, was followed 2 months later by the signing of a mutual defense treaty between the United States and the ROK.

The country is currently being led by Kim Chong-il who succeeded his father upon the latter's death on 8 July 1994. The elder Kim was a ruthless, charismatic leader who retained tremendous loyalty from the people, despite their hardships. Kim Chong-il has been described as paranoid, spoiled, and suspicious, not having his father's abilities, and



Kim Chong-il (Left) and the Late Kim Il-song

his access to the government bureaucracy is through a clique. The country is facing insurmountable internal problems and is unstable politically, economically, and socially.

Other political setbacks have further isolated the DPRK and include the 1990 formal recognition of the ROK by the former Soviet Union, and the 1991 entrance of both Koreas to the UN. The DPRK lost one of its major supporters with the demise of the Soviet Union. Moreover, although the People's Republic of China (PRC) remains the only credible supporter of the DPRK, economic and political rapprochement between the PRC and the ROK continues. The DPRK will continue to be both economically and socially repressed and will become increasingly isolated. The DPRK

will likely cling to its outmoded style of communism and political change will not occur until the current leaders are gone.

Negative economic growth, chronic shortages of raw materials (especially oil), ineffective centralized economic planning, and an emphasis on military power have contributed to the economic failure of North Korea. The requirement by Russia and the PRC that materials exported to the DPRK be paid for with cash has further degraded North Korea's economic viability. The DPRK can no longer generate sufficient electrical power to meet industrial needs, social services have been severely degraded, and segments of society have been reduced to one meal a day. There are chronic shortages of many of the basic commodities required for subsistence and industrial production. Critical resources continue to be dedicated to the military with increasing detriment to the economy. There will be no relief from the severe shortages, which could foster growing dissatisfaction among the intelligentsia, workers, students, and bureaucrats. The DPRK's management of its economy provides no freedom of action for producers, real incentives for individuals to excel, or a government responsive to scientific and technological progress. If the DPRK keeps its emphasis on its military and does not reform its economic system, the country could eventually be in grave danger of imploding. The DPRK is, and will likely remain, one of the most dangerous countries in the world.

Transportation

Railroads

North Korea: 4,915 km (3,055 mi) total; 4,250 km (2,641 mi) 1.435 m (4.7 ft) standard gauge, 665 km (413 mi) 0.762 m (2.54 ft) narrow gauge; 159 km (99 mi) double track; 3,397 km (2,111 mi) electrified; government owned (1995).

South Korea: 3,149 km (1,957 mi) total operating in 1995; 3,129 km (1,944 mi) 1.435 m (4.7 ft) standard gauge, 20 km (12 mi) 0.61 m (2.0 ft)

narrow gauge; 847 km (526 mi) double track; 525 km (326 mi) electrified; government owned.

Highways

North Korea: Approximately 30,000 km (18,645 mi) 1995; 85 percent crushed stone, or earth surface; 15 percent paved.

South Korea: Approximately 63,171 km (39,253 mi) 1995; 46,500 km (28,894 mi) paved of which 1,521 km (945 mi) are expressways and 12,190 km (7,575 mi) national highway; 49,460 km (30,740 mi) provincial and local roads.

Inland Waterways

North Korea: 2,253 km (1,400 mi); mostly navigable by small craft only.

South Korea: 1,609 km (1,000 mi); use restricted to small craft.

Pipelines

North Korea: Crude oil 37 km (23 mi).

South Korea: Crude oil 455 km (283 mi).

Ports

North Korea: Chongjin, Haeju, Hamhung, Nampo, Wonsan, Songnim, Najin, Sonbong (formerly Unggi), and Kim Chaek.

South Korea: Pusan, Inchon, Kunsan, Mokpo, Ulsan, Chinae and Pohang.

Airports

North Korea: 51 total, 51 usable (est); about 24 with permanent surface runways.

South Korea: 105 total, 97 usable; 60 with permanent surface runways.



South Korean Transportation System

heavy rolling stock, scarcity of heavy rail lines, and lack of centralized traffic control hamper the rail system. Poor surfaces and maintenance and an insufficient number of roads constrain the highway system.

About 75 percent of the DPRK's 4,915-km railroads are electric. A major priority is to electrify all primary rail lines, which would nearly double the rail capacity without additional track. However, electric railroads could become a liability during wartime if key transformers or hydroelectric power plants were rendered nonfunctional. The DPRK produces both diesel and electric locomotives. Diesel locomotives operate mostly in yards. Most steam locomotives, acquired from various sources shortly after World War II, still operate. The DPRK also manufactures several types of railcars, including 60- and 100-metric ton freight cars. However, rolling stock shortages are frequent.

The DPRK's economic plans include upgrading and expanding several primary maritime ports. Construction of the Nampo Lockgate stabilized Taedong River water levels, allowing Nampo Port expansion and facility development farther up the river. Songnim Port is an example of this process.

Some of the DPRK's rivers are navigable by small craft and are used as an auxiliary means of transportation to ease the strain on the railroads and highways. The Taedong, in the west central region, serves as a major artery for commerce.

The DPRK's civil airlift remains limited. In addition to Sunan International Airfield, the Civil Air Administration operates a few domestic terminals throughout the country. Personnel and equipment assigned to civilian flights do not have a direct military function, but could offer limited support during wartime.

Cultural Overview

The people of the DPRK (a population of over 22,000,000) are mostly ethnic Korean, speak the Korean language, and use the Korean phonetic alphabet. The Koreans take pride in both their antiquity and in the conti-

nity of their society, which dates back to pre-Christian times. They descended from migratory groups that entered the region from Siberia, Manchuria, and inner Asia several thousand years ago. The society is a clearly defined ethnic, cultural, and linguistic unit distinct from the neighboring populations of the Asian mainland and Japan. The North Korean society is a mixture of ancient, indigenous traditions with a system of totalitarian ideology imposed by the Soviet Union at the end of World War II. This ethnic solidarity has deep geographic, historical, and political roots. Until the imposition of communism, the people lived for centuries in an exceptionally homogeneous society and culture. With the partition of the peninsula, sharp political and economic differences developed, with some cultural variations, between both North and South Korea.

Traditionally, Koreans have never conceived of society as merely an aggregate of individuals, each pursuing private ends, but as a harmonious and collective whole; more important than the individuals composing it. This emphasis on harmony has justified the DPRK government's paternalistic intervention in the lives of the people. In the DPRK today, the dominant ideology is Marxist-Leninist, strongly influenced by traditional Confucian values and Kim Il-song's *chuche* (self-reliance) ideology. By Western standards, life in the DPRK is regimented and grim. The centralized party state maintains tight control over all aspects of daily life, and citizens must dedicate their lives to state-defined goals rather than personal interests. Proper attitudes and correct human relations are stressed. It would be a mistake to assume that North Koreans see their lives as harsh and colorless, since the majority have spent their entire life under a totalitarian regime. The average person is unaware of conditions abroad, and is subject to a constant barrage of propaganda extolling the virtues of Kim Chong-il's rule and the heroic myth of Kim Il-song's past. In addition, this propaganda campaign harshly denounces the United States and the ROK.

Korean is a Uralic language, remotely related to Japanese, Mongolian, Hungarian, and Finnish. Although there are dialects, the Korean spoken throughout the peninsula is comprehensible to nearly all the populace.

Chinese characters were used before the invention of the Korean Hangul alphabet in the 15th century. A number of specialized terms have been introduced in the north, especially in written usage.

Korea's traditional religions are Buddhism, Shamanism, and Chonggyo. Christian missionaries arrived in the 19th century and founded schools, hospitals, and other modern institutions throughout Korea. Major centers of missionary activity included Seoul and Pyongyang. Although religious groups nominally exist in the DPRK, most available evidence suggests that the government severely restricts religious activity, allowing these groups to exist only for the sake of its international image.

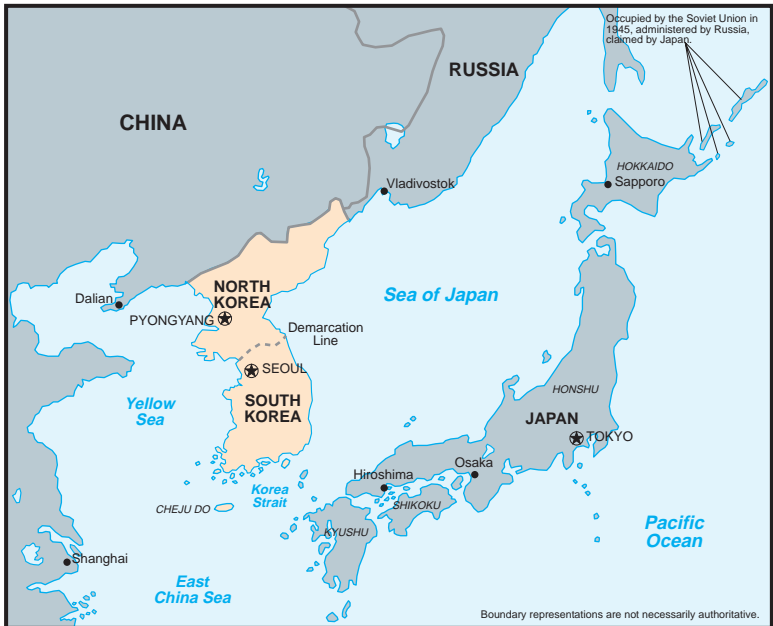
Korean Peninsula Geographic Position

The Korean Peninsula protrudes southward from the Asian mainland separating the Yellow Sea (West Sea) to the west from the East Sea (Sea of Japan) to the east. The Peninsula is roughly 346 km (215 mi) wide at its broadest point (approximately 38°10'N), roughly 169 km (105 mi) at its narrowest point (approximately 39°20'N), and approximately 965 km (600 mi) long. The northern-most point of the peninsula is located on the Chinese border at approximately 43°N (about the same latitude as Buffalo, New York), the southern-most point on the peninsula is located at approximately 34°20'N (about the same latitude as Wilmington, North Carolina) on the East China Sea. The western-most point on the peninsula is located at 124°40'E on the Yellow Sea, and the eastern most point on the peninsula is located at 129°35'E on the East Sea (Sea of Japan)/Korea Strait (Straits of Tsushima).

The total land area for North Korea is 120,410 km (46,490 mi), or slightly smaller than Mississippi. The total land area for South Korea is 98,190 km (84,401 mi), or slightly larger than Indiana. North Korea's coastline is 2,495 km (1,551 mi) and South Korea's is 2,413 km (1,550 mi).

Borders and Neighbors

The northern border with Russia is 19 km (12 mi) long, and follows the Tumen River northwest from its mouth. The border with China is 1,416 km (880 mi) long. Starting from where the Russian border ends, it follows the Tumen River to its headwaters (approx. 42°N 128°05'E); it then follows the Yalu (Amnok) River from its headwaters (approx. 42°N 128°05'E), southwest, to the Yellow Sea. The border between North and South Korea is the military demarcation line (MDL), that marks the line of separation between the two belligerent sides at the close of the Korean War. A demilitarized zone (DMZ) extends for 2 km (1.24 mi) on either side of the MDL and extends out to sea. Both the DPRK and



Eastern Asia

ROK governments hold that the MDL is only a temporary administrative line, not a permanent border. Korea's remaining borders are coastlines, generally following the peninsula, but in places the border leaves the peninsula to encompass islands and archipelagoes.

Korea's closest sea-neighbors are Japan and China. The Japanese island of Tsushima is approximately 50 km (31 mi) off Korea's southeast coast (34°42'N 129°20'E), while the main island of Honshu is approximately 180 km (112 mi). The Shandong Peninsula of China is approximately 190 km (118 mi) to the west and bisects the Korean bay to the north and the Yellow Sea to the south.

East Asia — Korean Peninsula Geography

Korea's geographic position serves as a natural bridge between the Asian continent and the Japanese islands. The coastline is highly indented with approximately 3,500 islands, mostly located off the south and west coasts. Korea, though comparatively small in size, is noted for the extraordinary variety of its geography. The country is punctuated with rough mountains, large streams, and rugged narrow passes with only about 20 percent of the peninsula suitable for cultivation. Another factor is the shallowness of the Yellow Sea, contributing to the extreme tidal range (9.7 m (32 ft), the second largest in the world) on the west coast.

Mountains

The Korean Peninsula is primarily a region of mountains (approximately 70 percent) and they are the defining characteristics of the terrain. The mountains are generally of medium height, about 1,500 m (4,921 ft), with lower mountains 200-500 m (656-1,640 ft) high (all elevations of 2,000 m (6,600 ft) or more are found in North Korea). Relief differentials (as measured from valley floor to peak or ridge tops) for even the lowest mountains, are generally 300-400 m (980-1,300 ft). The elevated places are heavily bisected by river valleys, which frequently have deep narrow passes and canyons, with steep slopes or near vertical or vertical walls. Paektu-san, at 2,744 m (9,003 ft), is the highest moun-

tain in the Koreas, rising out of the Kaema Plateau, in the far northeast, which is the headwater for the Yalu and Tumen Rivers.

Mountain ranges generally parallel the coastlines, but nearly all emit a number of mountain chains that extend in various directions and intersect one another, making the country's relief system complex and tangled. Korea's mountain system may be broken into three segments:

North Korean Mountain Regions

These are divided into the Tumen and the Yalu (Amnok) River mountain regions. The Tumen region (the area between the Tumen River and the East Sea (Sea of Japan)) is in the northeast corner of North Korea. These mountains are relatively low and passable in the northeast, but gradually increase in elevation toward the southwest, becoming less and less accessible. Their high region reaches 2,500 m (8,202 ft). Their southwest direction is interrupted by the Materyong mountains, which extend southeast from the Manchurian border to the East Sea (Sea of Japan).

The Yalu (Amnok) mountain region is between the Yalu River and the Yellow Sea. The region forms the mountain roof of the Korean Peninsula. These ranges are noted for their complicated structure, severity, inaccessibility, and lack of settlers. The western portion of this region becomes gradually lower, rarely exceeding 1,000 m (3,281 ft), but the ranges have steep slopes, are highly dissected, and contain dense forests. Communication is usually only practical via the deep river valleys.

East Korean Mountain Region

These mountains extend south along the shore of the East Sea (Sea of Japan) in three parallel lines to the southern extreme of the peninsula. These mountains reach 1,500 m (4,921 ft) and are characterized by narrow, jagged crests and steep slopes that are cut by deep gorges. The relief difference between the flat littoral valleys and the abrupt elevation change of the mountains handicap cross-country movement.



North Korean Topography

South Korean Mountain Region

This region consists of a series of short ranges that extend in parallel rows to the southern shore of the peninsula. These mountains reach

1,500 m (4,921 ft) and most of the region is easily accessible, except for the central region which is characterized by sharp jagged crests with high passes and steep rugged slopes.

Lowlands

The largest and most important tracks of lowland lie near the shorelines (coastal alluvial plains). Besides these coastal alluvial plains, erosional basins were formed in the mountains at the junctions of rivers and streams and are usually found in central and southern Korea (mostly expanded river valleys or nearly closed inter-mountain valleys). Between the mountains lie lowlands that were formed by river valleys and sea terraces. Most lowlands are settled/cultivated.

The wide range of temperature fluctuations (between summer highs and winter lows) and concentrated summer rains induce intense weathering and erosion of surface material. Gentle slopes at the foot of mountains, hills, and near basins, are covered with thick deposits of weathered materials formed from the erosion of upland material. Alluvial fans are rarely developed.

The largest lowlands are river deltas found along coast of the Yellow Sea. The lowlands of the eastern and southern coastline are usually river deltas and as a rule are small, due to the mountains in the east abruptly dropping into the sea. Large tidal ranges (west coast) and funnel shaped river mouths prevent the formation of large active (growing) deltas, although rivers transport large amounts of deposited material during the wet season (summer). The wide coastal plains near the river mouths change abruptly into narrow flood plains a short distance upriver. Most river delta lowlands, especially those on the Yellow Sea, are subject to inundations by seasonal river flooding (summer) and high tides. During the flood season (summer), small dikes (2-3 m /6.5-9.8 ft) are built to protect fields and homes. While mountains are the dominate geological feature, lowlands have played a key role in Korea's culture/history.

Major Rivers

Name	Length km (mi)	Navigable Length km (mi)
Ch'ongch'on	198 (123)	152 (94)
Han	514 (319)	330 (205)
Imjin	254 (158)	124 (77)
Kum	401 (249)	130 (81)
Naktong	525 (326)	334 (208)
Somjin	212 (132)	39 (24)
Taebong	438 (272)	260 (161)
Tumen	520 (323)	85 (53)
Yalu (Amnok)	790 (491)	698 (434)
Yesong	174 (108)	65 (40)

The Yalu (Amnok) and Tumen Rivers form the border between the DPRK and the PRC; the Tumen River forms the border between the DPRK and Russia. All river flows fluctuate widely, with the river discharges swelling during the summer wet season, often flooding valley floors. In the other seasons, which are relatively dry, water levels become very low, often exposing the river beds. River gradients are mostly very flat in their lower reaches, permitting navigation for long stretches above the river mouths.

All of Korea's principal rivers (with the exception of the Tumen) empty into the Yellow Sea or the Korean Strait (Straights of Tsushima). The Tumen is the only river of consequence that flows into the East Sea (Sea of Japan). With the introduction of motor transportation, primarily impacting South Korea, rivers have become secondary means of transportation. However, farmers depend on the rivers for over 70 percent of the water required to irrigate their crops, and they are a major source of power (hydroelectric), surpassing coal. Many of the rivers are dammed

for either hydroelectric or irrigation use. The majority of the rivers in Korea are less than 100 km (62 mi) long and generally 20 to 30 m (66-98 ft) wide. During the dry season (winter), rivers are fordable (via foot) for nearly their entire course, especially rivers in the eastern portion of the peninsula where the watershed divide is closest to the shoreline. During the rainy season (summer), rivers, streams, and intermittent streams quickly fill. Mountain streams are steep sloping, strewn with boulders, have numerous rapids, and may contain many waterfalls (especially during the rainy season).

Yellow Sea

The Yellow Sea forms the western coastline. With an average depth of only 45 m (150 ft), and with the large quantity of water the Pacific Ocean pumps into the shallow basin, the tides along the coastline of the Yellow Sea are tremendous. At Inchon, the tides may reach 9.7 m (32 ft), and average 5.8 m (19 ft).

Mean Neap Tide Range	3.47 m (11.4 ft)
Mean Tidal Range	5.72 m (18.8 ft)
Mean Spring Tidal Range	7.98 m (26.2 ft)
Maximum Tidal Range	9.84 m (32.3 ft)

The rapid ebb and flow of the tides create strong currents, exceeding 7 kts, in the channels between islands. At low tide approximately 1,000 sq mi of mudflats are exposed and may extend for miles away from the coastline. When the tides flow back, the speed of their advance may outpace that of a running man.

Effects of Terrain on Military Operations

The Korean Peninsula is extremely mountainous, offering excellent observation along avenues of approach and lines of communication (LOCs) in the northern and central mountain areas. Observation in the eastern coastal lowland area is limited, but improves the further west

one travels. Observation in the northwest, southwest, and southern plains areas is fair to limited. Fields of fire are poorest in extremely rugged regions of the northern and central mountain areas, due to numerous spurs and areas offering cover from direct fire weapons. The regions offering the best fields of fire would be the northwest, southwest, and southern plains, where the terrain is relatively flat and open, except in built-up areas.

The Korean Peninsula comprises numerous ridge lines and hills. Only 20 percent of the total land area consists of plains and lowlands. The folds in these ridgelines and hills afford excellent cover and some degree of concealment from direct fire and ground observation.

The majority of ridge lines run in a north-south direction, severely restricting east-west movement. This restriction of lateral movement becomes more prevalent the further north operations move. The major water obstacles on the peninsula are its rivers. During most of the year, the rivers are shallow, exposing very wide, gravel river beds; however, these rivers can become formidable obstacles as a result of the increased precipitation during the rainy season.

Climate

Korea's climate is defined by its latitude, peninsular shape, terrain, currents and close proximity to the Asian continent. It is characterized by continental winters and monsoonal summers. Though Korea juts far out into the sea, the west coast climate is less maritime due to the shallowness of the Yellow Sea; its shallow (depths average 45 m/150 ft) water basin heats and cools rapidly, contributing little to moderating the climate, where as the East Sea (Sea of Japan) moderates the east coast's climate due to its deeper waters (1,500 m/ 5,000 ft).

The southern climate is less continental and more subtropical with a significant warm period lasting approximately 6 to 7 months. In the north, winter conditions may last for 6 months, while in the south it may only last for 3 months. However, 3 successive cold days are typically

followed by 4 successive days of warm weather. The peninsula's west coast is generally open to the influence of the cool air masses that roar out of the Asian mainland, while the east coast is protected by the chain of mountains that parallel the coast (Chungnyong Mountains) and is warmed by the East Sea (Sea of Japan).

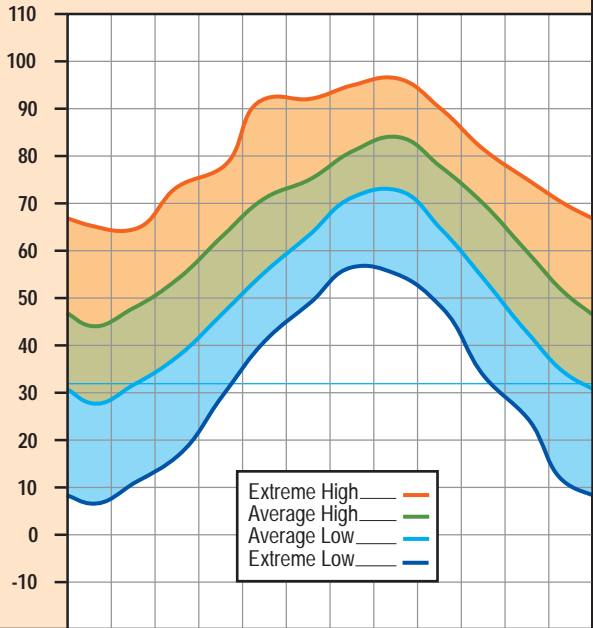
In the northernmost regions, the winter lasts a full 6 months and in January the average temperatures may fall below -18°C (0°F). The hottest time of the year is the summer, with average temperature ranges between 25° - 27°C (77° - 80°F) in most of the southern regions and milder temperatures of 22°C (72°F) along the northeast coast. The range of temperatures is much greater in the north and in the interior than along the coasts. The annual average difference in temperature between the coldest and hottest months for Seoul is approximately 28.3°C (83°F).

Korea is located in the East Asian Monsoon belt. Seasonal monsoon winds affect Korea's weather throughout the year. The Southwest Monsoon blows in from the south and southeast during the summer, bringing hot, humid weather. The cold, dry, Northwest Monsoon blows in from the north and northwest during the winter, bringing cold weather. Korea's massive mountains protect the peninsula's east coast from the winter monsoon, though occasional heavy snows can fall along the eastern mountain ranges. As a result, the east coast generally has warmer winters than the rest of Korea.

Heavy rainfall from June through September accounts for about 70 percent of Korea's yearly precipitation, with annual precipitation averages between less than 500 mm (20 in) in the northeastern inland areas and 1,500 mm (59 in) along the southern coast. Mean precipitation decreases from south to north. Some regions will have particularly heavy rains due to orographic effects (air uplifted by mountains) and the convergence of moist air masses. In most years, one or two typhoons hit the peninsula during July and August.

PUSAN,
South Korea
35° 10'N
129° 08'E

TEMPERATURE
DEGREES (F)

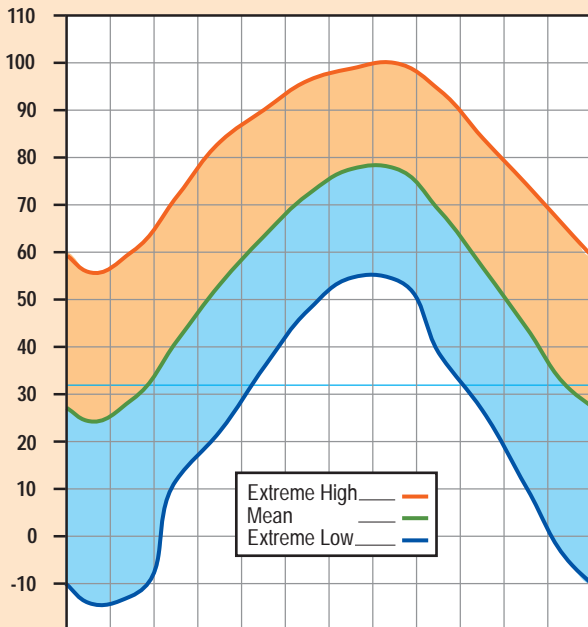


Extreme High ————
Average High ————
Average Low ————
Extreme Low ————

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precipitation (In) Mean	0.8	2.9	3.3	4.9	5.1	6.1	8.5	6.8	7.1	2.9	2.7	1.0
Max Precipitation 24 Hours	2.9	4.4	2.9	7.0	5.7	7.2	9.9	8.2	8.0	7.0	5.5	2.7
Mean (In) Snow	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Surface Wind Direction	NW	NW	NW	NW	NW	NW	SW	SW	NW	NW	NW	NW
Surface Wind Speed (Kts) Mean	9	8	8	7	7	6	6	7	7	8	8	8
Surface Wind Speed (Kts) Max	52	51	47	58	54	56	52	61	68	45	45	56
Relative Humidity 0400 LST	66	68	73	78	82	84	90	88	87	82	79	73
Relative Humidity 1300 LST	54	56	60	63	67	74	79	74	70	60	58	55
Dewpoint	20	24	33	44	52	61	70	71	62	50	41	28

SEOUL,
South Korea
37° 26'N
127° 07'E

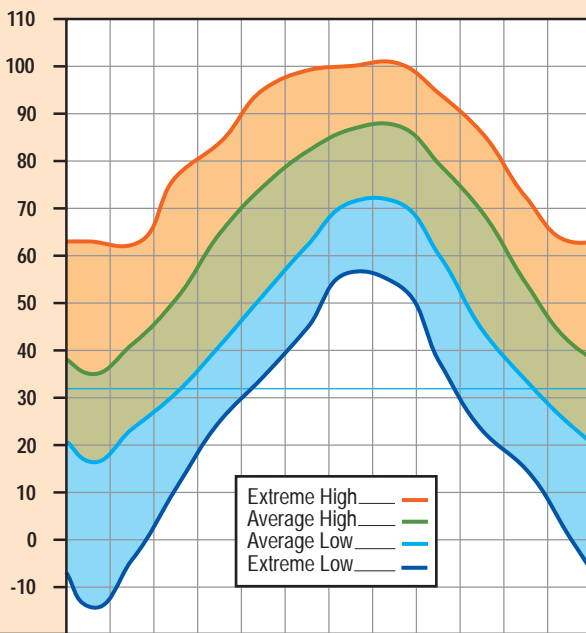
TEMPERATURE
DEGREES (F)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precipitation (In) Mean	1.2	1.3	2.3	4.4	3.3	5.0	12.0	10.0	6.0	1.7	1.7	1.2
Precipitation (In) Extreme Max	4.5	5.0	5.5	18.0	9.5	15.0	25.0	35.0	15.0	8.0	6.0	4.5
Precipitation (In) Extreme Min	0.1	0.1	0.2	0.2	0.3	0.3	1.2	1.2	0.8	0.6	0.3	0.3
Max Precipitation 24 Hours	1.6	2.6	2.6	5.6	6.0	7.0	11.0	13.0	13.0	5.4	2.9	2.8
Mean (In) Snow	7.0	4.0	2.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	2.0	4.0
Surface Wind Direction	WNW	W	W	W	W	S	S	S	S	W	WNW	NW
Surface Wind Speed (Kts) Mean	3	3	3	3	3	2	2	2	2	2	3	3
Relative Humidity 0700 LST	75	75	80	82	83	86	90	89	90	90	84	79
Relative Humidity 1300 LST	57	54	52	51	52	60	68	66	60	55	57	59
Dewpoint	14	18	28	40	51	61	70	70	60	47	34	21

TAEJON,
South Korea
36° 27'N
127° 26'E

TEMPERATURE
DEGREES (F)

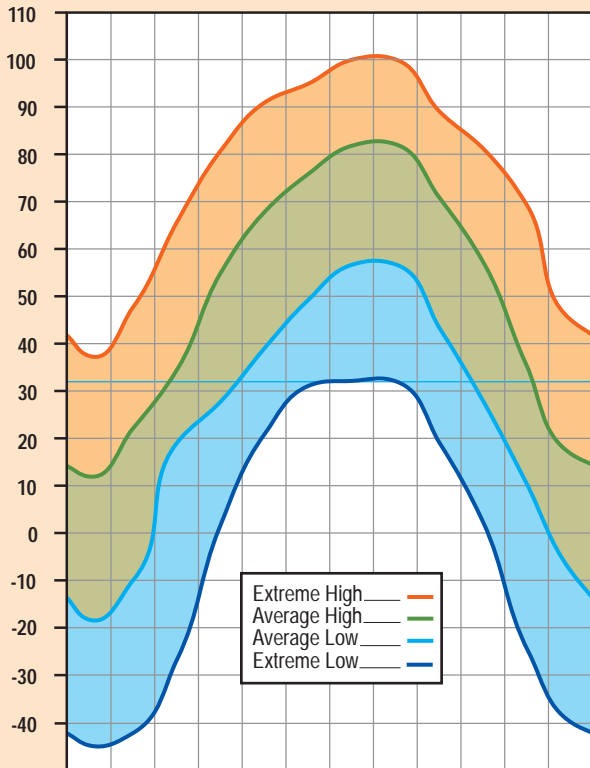


Extreme High _____ —
 Average High _____ —
 Average Low _____ —
 Extreme Low _____ —

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precipitation (In) Mean	1.3	1.2	1.8	3.5	3.3	5.6	12.6	8.4	5.2	1.5	1.6	1.5
Max Precipitation 24 Hours	2.0	1.8	2.1	4.1	3.8	6.9	8.9	9.5	3.5	1.9	1.3	2.1
Mean (In) Snow	6.0	3.0	2.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.1
Surface Wind Direction	N	N	N	SW	SW	E	E	E	N	N	N	N
Surface Wind Speed (Kts) Mean	2	3	3	4	3	3	3	3	2	2	2	2
Surface Wind Speed (Kts) Max	27	27	27	33	33	33	21	40	27	40	27	27
Relative Humidity 0400 LST	81	82	84	85	86	88	91	91	92	91	89	85
Relative Humidity 1300 LST	69	58	64	62	57	62	74	68	65	59	62	66
Dewpoint	20	25	34	45	54	62	72	72	62	49	37	26

**HYESAN,
North Korea
41° 24'N
126° 12'E**

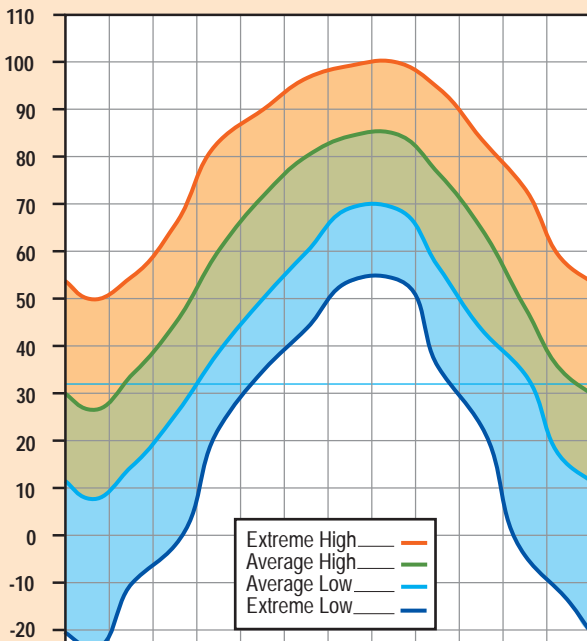
**TEMPERATURE
DEGREES (F)**



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precipitation (In) Mean	0.4	0.3	0.4	1.0	2.4	3.6	5.2	5.2	2.3	1.1	0.6	0.5
Max Precipitation 24 Hours	1.0	0.9	0.8	1.1	1.7	1.7	2.6	2.6	4.9	1.4	0.8	1.2
Surface Wind Direction	W	NE	W	W	NE	NE	NE	NE	NE	W	NE	NE
Surface Wind Speed (Kts) Mean	2	3	4	4	5	2	2	2	3	2	2	2
Surface Wind Speed (Kts) Max	23	27	23	29	31	16	17	17	19	19	27	27
Relative Humidity 0600 LST	85	85	81	79	77	90	92	92	90	85	84	86
Relative Humidity 1400 LST	60	56	49	38	33	56	58	58	46	40	53	58
Dewpoint	-14	-3	11	21	28	43	55	54	38	24	13	-2

PYONGYANG,
North Korea
39° 01'N
125° 49'E

TEMPERATURE
DEGREES (F)

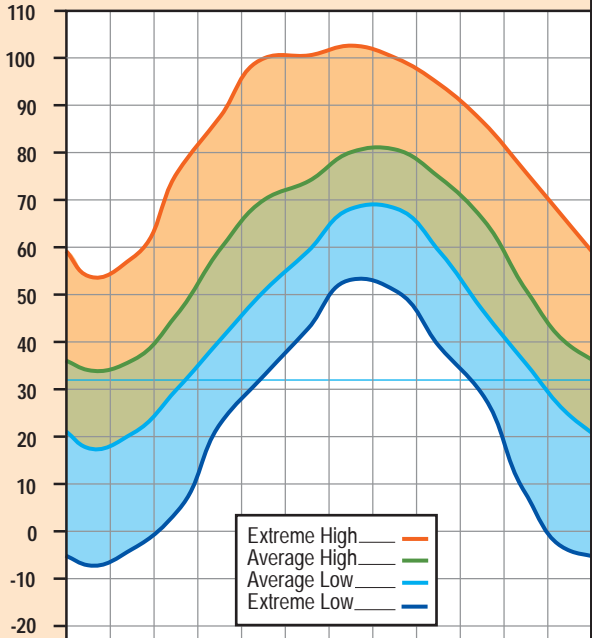


Extreme High ———— orange
Average High ———— green
Average Low ———— light blue
Extreme Low ———— dark blue

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precipitation (In) Mean	0.6	0.4	1.2	2.1	2.5	3.3	9.9	9.2	4.6	1.8	1.6	0.8
Max Precipitation 24 Hours	1.2	2.0	2.0	1.9	3.7	4.1	9.5	8.3	7.0	4.0	1.9	1.8
Mean (In) Snow	3.0	3.0	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	1.0	2.0
Surface Wind Direction	NW	NW	NW	NW	NW	W	E	E	E	NW	NW	NW
Surface Wind Speed (Kts) Mean	4	4	6	5	5	4	4	3	3	3	4	4
Surface Wind Speed (Kts) Max	32	31	36	35	32	30	31	32	36	28	31	31
Relative Humidity 0600 LST	81	82	81	82	81	88	92	92	91	88	84	83
Relative Humidity 1300 LST	57	52	48	44	47	50	66	65	55	50	55	58
Dewpoint	13	17	26	37	48	59	68	69	57	45	32	19

WONSAN,
North Korea
39° 11'N
127° 26'E

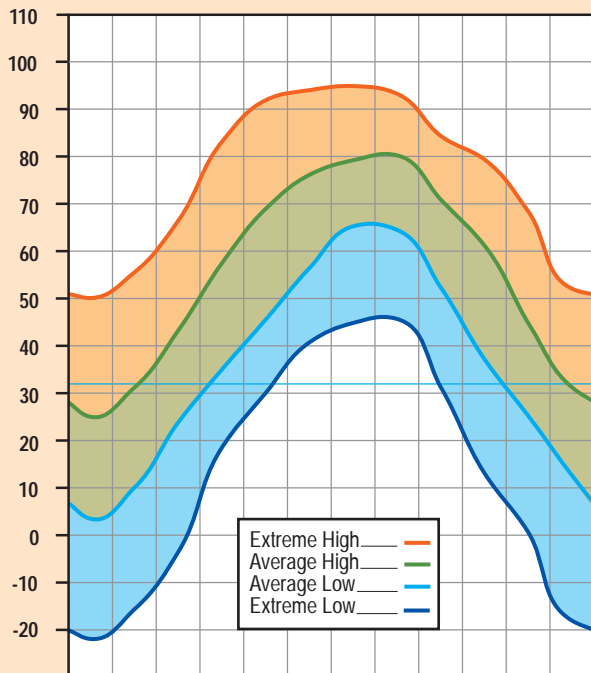
TEMPERATURE
DEGREES (F)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precipitation (In) Mean	1.0	1.2	1.9	2.6	3.2	4.8	11.3	12.9	6.9	2.8	2.5	1.2
Max Precipitation 24 Hours	2.9	2.9	3.0	4.7	5.0	4.8	6.9	14.2	9.6	8.8	3.4	3.3
Mean (In) Snow	5.0	10.0	7.0	1.0	0.1	0.0	0.0	0.0	0.0	0.1	1.0	6.0
Surface Wind Direction	W	W	W	WSW	WSW	NE	ENE	SW	SW	SW	WSW	W
Surface Wind Speed (Kts) Mean	6	6	6	6	5	5	5	5	5	5	6	6
Surface Wind Speed (Kts) Max	28	29	29	35	33	36	51	42	43	36	40	27
Relative Humidity 0600 LST	58	67	65	69	75	84	88	90	85	76	66	58
Relative Humidity 1300 LST	45	49	50	52	56	66	74	74	65	55	50	47
Dewpoint	13	16	24	36	47	58	67	68	58	45	30	17

**YANGDOK,
North Korea
39° 10'N
127° 18'E**

**TEMPERATURE
DEGREES (F)**



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Precipitation (In) Mean	0.6	0.6	1.0	2.1	3.2	4.3	10.4	9.1	4.3	2.1	1.3	0.8
Surface Wind Direction	W	W	W	NW	W	SE	SE	SE	SE	W	W	W
Surface Wind Speed (Kts) Mean	6	6	7	7	7	5	5	5	5	6	6	6
Relative Humidity 0600 LST	86	89	86	84	85	89	92	92	93	91	87	87
Relative Humidity 1300 LST	62	57	52	43	43	55	69	66	58	49	62	62
Dewpoint	8	12	24	33	43	57	63	63	53	40	17	17

Spring Pattern (April-May)

April marks the start of the transition from the cold, dry winter to the summer rainy season. This transition lasts nearly 2 months. Low pressure systems start forming near the Gulf of Bo Hai and the Shantung Peninsula. These lows significantly erode the dominance of the Siberian High ("Asiatic High") pressure system. As a result, cloudiness and precipitation increase during the spring months. Korea is occasionally influenced by the "Yellow Wind" during the spring months. The Yellow Wind occurs when storm winds behind a trough cause dust from the Gobi Desert to become suspended in the air. The dust laden air is subsequently transported over Korea. During a strong yellow wind, visibility can be reduced to less than 1 mile. Spring is also the time for heavy sea fog to form over the coastal areas. The fog forms as the warmer air passes over the cooler Yellow Sea and the East Sea (Sea of Japan). Wind gusts of up to 59 kts have been recorded as well as tornados. The average April temperature in the north is approximately 10 °C (50 °F) and in the south 12 °C (54 °F); spring is generally cooler than fall.

Summer Pattern (June-September)

Summer is the rainy season in Korea. During the summer, southern monsoon winds engulf the country, the winds shift to the southwest, and the warm, moisture laden air moving off the oceans clashes with the drier air to the north. These fronts oscillate back and forth across Korea during the summer months. The interior highlands disturb the winds, forcing them into a westerly/southwesterly direction. The majority of the annual precipitation falls between late June and the middle of September, with rains fully developing along the entire peninsula by mid-June. Seoul receives approximately 126 mm (5 in) of precipitation during the winter (December-March), but in July alone receives approximately 383 mm (14.3 in).

Thunderstorms usually occur about 2 to 5 days per month during this period. Summer precipitation in Korea is as likely to occur at 0200 as at 1400. Humidity is very high and fog will develop whenever a cold air mass confronts this moisture laden air, often forming on cloudless days. The typhoon season occurs from July through September. About once each year, a typhoon will pass very close to or move over Korea, causing heavy showers. Strong winds are usually confined to islands and exposed coastal areas. Although winds might not pose a problem, the associated rainfall can cause significant flash flooding, a very real threat during the rainy season, especially in rough terrain. The mean temperature for Seoul in August is 25.3 °C (78 °C)

Fall Pattern (October-November)

October is the transition month between the summer rainy season and the cold, dry winter. The predominantly tropical cloudy weather of the summer is replaced by cooler, drier, and less cloudy conditions. The primary weather producers during October are cold frontal systems from the Asian mainland. On the average, one frontal passage per week can be expected during the month. A typical frontal passage is preceded by increasing middle and high cloudiness with light rain. Following the frontal passage, mostly clear skies can be expected for 3 or 4 days. During this clear period it is very likely for fog to form. Fog is especially prevalent in river valleys and in low lying areas.

Winter Pattern (December-March)

The winter in Korea is controlled by the large Siberian High (Asiatic High) pressure system which results in predominantly cold, dry northwesterly winds. About every 4 to 5 days a low-pressure trough will move through Korea, bringing with it cloudiness and light precipitation. The amount of precipitation locally depends mostly on the elevation of the station and the length of time that the air has been over the Yellow Sea. Maximum snowfall occurs over the northwest coast, which is the most exposed to the northwesterly flow, and in the mountain areas. Normally less than 10 percent of the annual precipitation falls during the

winter. Frequently the weather is cloudless, clear, and dry, except for the southwestern region of the peninsula. The mean January temperature in Seoul is -4.4 °C (24 °F)

Effects of Climate on Military Operations

Extremely cold outbreaks during winter could have a serious impact on ground and air operations. During colder temperatures, hypothermia, frostbite, and cold related injuries will slow the tempo of ground operations. Cold weather also impacts the turnaround time of aircraft as maintenance, refueling, and ammunition loading are affected. Trafficability is favorably impacted by the state of the ground. The ground freezes around 10 November in the extreme north, around 20 December along the DMZ, and not until 30 January in the extreme south. Thawing begins around 30 January in Pusan, mid-February along the DMZ, and not until 20 March in the far north. Ice also impacts naval operations from December until March.

Rain is the biggest problem for military operations in Korea. Heavy rains during the Southwest Monsoon saturate the ground and make conditions ideal for flash flooding. Trafficability is impaired by the wet ground and the effects of suddenly changing shallow, slow moving streams into rapid, deep rivers. In addition, mountain passes and rough mountain terrain become even more difficult to traverse due to the rains. Winter snows have an impact on aircraft takeoff/recovery at coastal bases and in mountainous terrain where snows are normally more significant. With limited highway LOCs available, heavier snowfalls can cause a significant impact on supply/resupply operations. The worst flying weather of the year occurs during the summer rainy season. About half the season, ceilings and visibilities are less than 3,000 ft and 3 mi, respectively.

In determining the effect of surface winds, direction is the most significant criteria. During the Northwest Monsoon (November-March), the effects of nuclear, biological, and chemical (NBC) warfare to the south are heightened. Although temperatures modify the effect of NBC

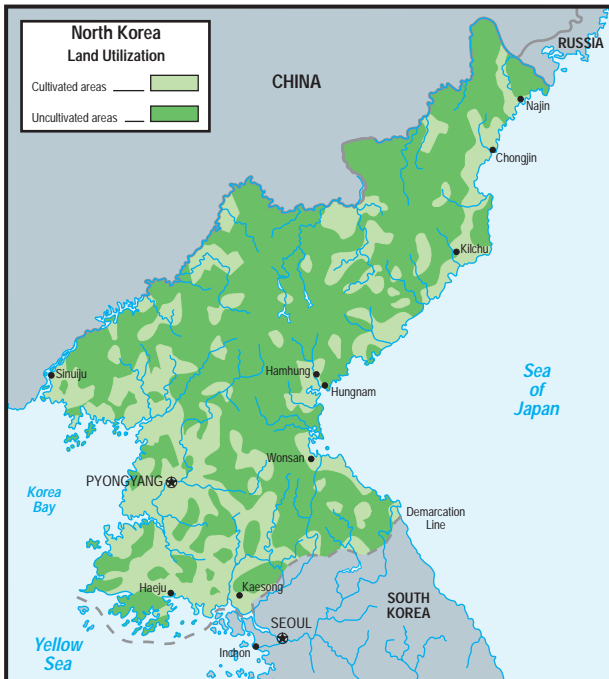
agents at this time, dispersion patterns would be favorable for North Korean use. The Southwest Monsoon (June-September) has temperatures and humidity favorable to North Korean NBC use, but dispersion patterns are less favorable. The Southwest Monsoon pattern also has periods of strong wind speeds which may adversely affect air operations, air defense, and communications which are antenna-dependent.

The best period for air and ground observation is the generally clear winter period, December through March. Flying weather in the winter is the best of any time of the year, although pilots must take note of frequent severe turbulence and icing. Both hazards can be associated with the passage of a trough. The fall period, October through November, permits good air and ground observation; however, air operations are frequently marginal during morning hours due to periods of ground fog in river valleys and low-lying areas. During the spring, April through June, air and ground observation are often limited as a result of increasing cloud cover and precipitation. Additionally, the spring period brings with it an increase in early morning fog that burns off by late morning. Also during the spring, dust resulting from Yellow Wind can reduce visibility at times to less than 1 mile, affecting both ground and air observation. Periods of rain during the summer, when the peninsula receives the majority of its annual precipitation in the form of monsoons, greatly reduce air and ground observation capability.

Vegetation

During World War II and the Korean War, the Korean Peninsula was nearly deforested. As a result, only scrub tree growth and relatively young forests exist. Areas not classified as cultivated or built-up are generally categorized as forests. Areas that contain trees over 6.1 m (20 ft) occupy only one-third of South Korea and are usually dense with tightly spaced trees that are generally less than 10 m (33 ft) tall. In these forests, maneuvering vehicles is difficult because trees are so closely spaced. The valley floors are consistently terraced and planted with rice crops, assuming that adequate supplies of water are available for these terraced

fields. Low, dry crops are planted where adequate supplies of water are not available, usually on the edges of valleys. The terrain and climate conditions of Korea are favorable for growth of coniferous forest including pine, fir, larch, and spruce trees. In the past, most of the forest land on the peninsula has been denuded, and the only remaining mature natural forests are on the higher mountains, particularly in the north. Most of the peninsula's woodlands are 20- to 30-year-old scrub deciduous forests. The central regions have a mixed cover of hardwoods and conifers, but near urban areas the forests have virtually disappeared. In the southern portion, scattered stands of bamboo and pine are found among the generally deciduous growth.



Effects of Vegetation on Military Operations

Because large stands of trees and forests are virtually nonexistent, except for remote mountainous areas in the northern half of the peninsula, vegetation will have little impact on observation and fields of fire.

The concealment afforded by vegetation is generally good year round but is restricted mainly to evergreen trees in mountainous areas. As operations move north into the more mountainous terrain, concealment increases. Concealment for ground troops is fair in areas of cultivation, mainly in rice paddies and orchards, but these are seasonal except in dikes and ditches. Concealment, especially from aerial observation, is limited in the young forests throughout Korea.

Surface Materials

The predominant surface material throughout the peninsula is sand composed of rocks and silt. The soil cover is usually thin outside the valleys, on hills, and on mountains. In the valleys, natural soils are normally thick sands, and silty sands with considerable cobble-sized rock in the upper reaches of the valleys. In the wide valleys of the western portion of the peninsula, minimal rock is present in the natural soil. Cultivated soils, especially in terraced rice paddies, are artificially developed through regular plowing, irrigating, and fertilizing over long periods. Settling of silts from annual irrigation and also from occasional flooding of rivers has changed the soil composition from its original character. In most areas, rice paddy soil is a uniform silty-loam, which is totally unlike the natural soils in the vicinity. During spring planting these soils are usually supersaturated to allow an easy transition for the transplanting of rice seedlings. The introduction of this moisture in the spring and constant flooding throughout most of the summer months make these fields impossible for off-road movement of even the lightest motor vehicles. During early fall, these rice paddies are drained to allow for the rice harvest and for the turning of the soil for nutrient retention. The turning of the soil allows the ground to dry and become hard enough for some trafficability.

SECTION 2

MILITARY FORCES OF THE DPRK

General

The DPRK remains the world's most militaristic state. It commits roughly 25 percent of its GDP to military spending. Out of every 1,000 people, 40 serve in uniform. By comparison, the ROK spends 4 percent of its GDP on the military and 14 of every 1,000 people serve in uniform. The DPRK maintains imposing forces in terms of numbers. Over 1,200,000 personnel serve in the active forces, with reserve forces totaling over 5,000,000, making it the fourth largest military force in the world. The majority of DPRK forces are forward deployed, in attack positions, within 65 km (40.4 mi) of the DMZ. This concentration along the border supports a military strategy that is directed against the ROK. Technically, a state of war exists between the two Koreas, as no peace treaty or terms were agreed upon at the end of the Korean War. Although the armistice of 1953 marked the end of conventional combat for the DPRK, it did not signify the end of hostilities or the preparation for continuing battle.

National Military Organization

DPRK defense activities are coordinated by the Ministry of the People's Armed Forces (MPAF). The MPAF is headed by the Minister of National Defense and consists of the Political Department, Operations Department, and Rear Services Department. The Minister of Defense reports to the Supreme Commander of the Armed Forces, as well to the Central People's Committee, the main political committee of the Korean's Worker Party. There is a separate General Staff that acts as an advisory committee to the MPAF. The DPRK maintains an Army, Air Force, Navy, and a Special Operations Force (SOF). There is no separate Marine Corps, although the Navy does conduct some amphibious and ground support operations.

The DPRK enforces a mandatory conscription law for citizens age 17 and over. Minimum service periods are as follows: 5 to 8 years (army), 3 to 4 years (air force), and 5 to 10 years (navy). Those not able to serve actively for that period of time are enlisted Red Guard militia, a large paramilitary force. Active service is followed by part-time service in the military reserves or service in the Worker-Peasant Red Guard to age 60. The DPRK military has an estimated manpower pool of approximately 5,000,000 personnel, although the estimate for reserve troops actually assigned to a military unit number is closer to 750,000 in the army and 40,000 in the navy.

The Worker-Peasant Red Guard militia is the largest civilian defense force in the DPRK with a strength of approximately 3.8 million. The militia is organized on a provincial/town/village level. Command structure is brigade, battalion, company, and platoon. The militia maintains infantry small arms, mortars, and air defense artillery, although some units are unarmed. Those under conscription age are assigned to the Red Youth Guards for training. Membership in the Red Youth Guards is approximately 1,000,000. In addition, the security forces and border guards, numbering approximately 115,000 personnel, are used for internal security duties.

The North Korean Army (NKA)

The ground forces are by far the largest and most formidable of the DPRK's military forces. In the 1980s, NKA force structure became increasingly mobile and mechanized, with a steady increase in tanks, self-propelled artillery, armored personnel carriers, and trucks.

The NKA ground combat vehicle inventory consists of medium and light tanks, which include the T-62 and T-54/55 main battle tanks. The NKA light tank inventory includes the indigenously produced M-1975, the former Soviet PT-76, and the Chinese Type 62 and 63 variants. The NKA armored personnel carrier inventory includes the M-1973/M-1967 and a few BTR-60s.

The NKA relies on massive numbers of artillery systems to support ground operations. The North Korean Air Force's perceived vulnerability contributes to this reliance on field artillery as the major combat multiplier. In the 1980s, the DPRK produced a significant amount of self-propelled artillery by mating towed artillery tubes with chassis already in the inventory. Also produced are a variety of self-propelled guns, howitzers, gun-howitzers (ranging from 122-mm to 152-mm), and two versions of the KOKSAN gun (170-mm). The DPRK also manufactures at least three calibers of multiple rocket launchers - 107-mm, 122-mm, and 240-mm - and mounts many of them on heavy trucks.

The DPRK produces a wide range of former Soviet antitank guns, from 57-mm to 100-mm. This includes the 76-mm field gun and SU-85 100-mm SP. Infantry fire support weapons include mortars ranging from 60-mm to 160-mm, hand-held rocket-propelled grenade launchers, and AT-1/SNAPPER and AT-3/SAGGER wire-guided antitank missiles. The DPRK probably produces the AT-4/5.

Major units of the NKA are listed as follows:

- 8 conventional corps
- 1 armored corps
- 4 mechanized corps
- 2 artillery corps
- 1 capital defense command
- 30 infantry divisions and
- 4 infantry brigades
- 15 armored brigades
- 20 motorized/mechanized infantry brigades
- Special Purpose Forces Command

The North Korean Air Force (NKAF)

The primary mission of the NKAF is air defense of the homeland. Secondary missions include tactical air support to the Army and the Navy, transportation and logistic support, and SOF insertion.

Interceptor, ground-attack, transport, attack helicopter, and transport helicopter regiments are formed from over 730 combat aircraft, approximately 300 helicopters, and 92,000 personnel. Although DPRK airbases are located throughout the country, the majority are in the southern provinces. Pyongyang has the capability to protect combat aircraft in hardened shelters.

The DPRK does not produce aircraft indigenously. Its inventory, though large, consists of many aircraft manufactured using 1950s and 1960s former Soviet or Chinese technology. However, in the 1980s the former Soviet Union supplied some more modern, all-weather air defense and ground-attack aircraft.

Interceptor aircraft are an integral part of the DPRK's air defense network, which also includes surface-to-air missiles and numerous mobile and fixed anti-aircraft artillery weapons. Interceptors fly combat air patrol missions to protect DPRK coastlines, military installations, and key urban areas. The MiG-23/FLOGGER and MiG-29/FULCRUM are the most modern interceptors in the inventory. However, the backbone of the air force remains the MiG-21/FISHBED. The DPRK has 120 MiG-21s and over 100 MiG-19/FARMERS. The MiG-21 has a twin barrel 23-mm cannon and AA-2/ATOLL heat-seeking air-to-air missiles. The DPRK's air defense capability improved in 1984 when the Soviet Union began supplying the first of the 46 MiG-23/FLOGGER interceptors. This all-weather interceptor can carry the AA-2/ATOLL or AA-8/APHID and the longer range AA-7/APEX missile. Until the MiG-29/FULCRUM arrived in 1988, the FLOGGER was the DPRK's most modern aircraft. The FULCRUM, an all-weather counterair fighter, entered

service in the former Soviet Union in 1985. Equipped with a look-down, shoot-down radar, beyond-visual-range air-to-air missiles, and close-in dogfight missiles, it provides the best airframe against the more modern CFC combat aircraft.

Most ground-attack regiments have Russian- and Chinese-produced light bombers and fighters with technology from the 1950s and 1960s. The NKAF has three regiments of Il-28/BEAGLEs, one regiment of Su-7/FITTERs, five regiments of MiG-15/FAGOTs and MiG-17/FRESCOs, and two regiments of MiG-19/FARMERs. The 82 BEAGLEs are medium-range bombers with a radius of 550 nm and a bomb load of 2,205 lb. Other attack aircraft include about 100 FARMERs and Chinese versions of the FARMER that have been modified for ground attack. These older aircraft can operate only in daylight and good weather and can only carry small bomb loads. The NKAF also has 20 1961 vintage Su-7/FITTER ground-attack fighters.

The NKAF modernized its ground-attack capability by importing Su-25/FROGFOOT aircraft from the former Soviet Union. Deliveries began in 1988, totaling approximately 36 to date. The Su-25 is a late-1970s aircraft, has a combat radius of 300 nm, and can carry up to 8,800 lb of bombs and rockets. During the initial stages of the surprise attack, the most likely targets for the Su-25 are airfields, surface-to-surface missile sites, headquarters, and other military targets of opportunity.

During the 1980s, the NKAF substantially increased its helicopter inventory from 40 to 275. Helicopters in service include Mi-2/HOP-LITE, Mi-4/HOUND, and Mi-8/HIP. In 1985, the DPRK circumvented U.S. export controls to buy 87 U.S.-manufactured Hughes helicopters. These helicopters are considerably more advanced than those received from the Russians. Although the DPRK has the civilian version, they probably have modified some of them to carry guns and rockets. Because the ROK produces the same model helicopter for its armed forces, the DPRK could modify their Hughes helicopters to resemble the ROK counterparts to confuse CFC air defenses during SOF operations.

The transport fleet has some 1950s- and 1960s-vintage former Soviet transports, including more than 270 An-2/COLT light transports and 10 An-24/COKEs. The COLT's ability to land on short, rough strips, makes it especially suited for the task of transporting SOF units. It can hold 10 combat troops and cruise at 160 kilometers (km) an hour. The NKAFF has at least six COLT regiments and at least six regiments of attack and transport helicopters.

DPRK operational thinking reflects both Russian doctrine and North Korean experiences with heavy UN bombing during the Korean War; it relies heavily on air defense. The DPRK houses a large percentage of its military industries, aircraft hangars, repair facilities, ammunition, fuel stores, and even air defense missiles underground or in hardened shelters.

The DPRK, with over 8,800 AA guns, combined with SA-2, SA-3, and SA-5, and handheld SA-7 and SA-16 surface-to-air missiles, has constructed one of the world's most dense air defense networks. In the mid-1980s, the former Soviet Union supplied SA-3/GOA surface-to-air missiles to the DPRK. The SA-3 provides short-range defense against low-flying aircraft. In 1987, the former Soviet Union provided SA-5/GAMMON surface-to-air missiles that gave Pyongyang a long-range, high-altitude, surface-to-air missile capability. The SA-2 GUIDELINE system provides medium-range, medium-altitude point defense for cities and military airfields, as well as a barrier defense along the DMZ.

SA-2 and SA-3 battalions are concentrated along the coastal corridors, while most SA-5 GAMMON battalions are located near the DMZ and are extended north to cover Pyongyang.

The North Korean Navy (NKN)

The 46,000-man NKN is primarily a coastal navy. The NKN is organized into two fleets: the East Coast Fleet, with eight operational commands, and the West Coast Fleet, with five operational commands. The East Coast Fleet is headquartered at Toejo Dong, with major bases at Najin and Wonsan. The West Coast Fleet is headquartered at Nampo,

with major bases at Pipagot and Sagon Ni. Numerous smaller naval bases are located along both coasts. The fleets do not exchange vessels because geographical limitations make mutual support almost impossible. The NKN does not have a Marine Corps or naval air. Amphibious operations are conducted by SOF units in addition to naval personnel.

Most NKN vessels are small patrol-size craft unable to operate over 50 nautical miles (nm) from the coast but capable of policing the DPRK's territorial waters. The navy's numerous amphibious craft and midget submarines are intended to clandestinely insert SOF units into the ROK. The DPRK also maintains coastal defense artillery and missile sites. Coastal defense artillery includes 122-mm, 130-mm, and 152-mm systems. Land-based coastal defense missiles include the SSC-2B SAMLET, CSSC-2 SILKWORM, and CSSC-3 SEERSUCKER.

The NKN's most capable weapons systems are their approximately 43 guided-missile patrol boats equipped with the SS-N-2A STYX antiship missile (or its Chinese version, the CSS-N-1 SCRUBBRUSH). Though their small size limits operations to coastal waters and calm seas, they have a capability to quickly respond to Combined Forces Command (CFC) shipping approaching the coast. The NKN has 12 OSA-1 guided-missile patrol boats, 10 DPRK versions of the OSA-1 called the SOJU, and 19 other fast-attack missile craft; the OSA and SOJU are all equipped with four CSS-N-1 missile launchers. The missiles have a maximum range of 25 nm and carry radar or infrared homing seekers.

The largest part of the NKN consists of small combatants, including torpedo boats, patrol boats, patrol craft, fast attack craft, and small amphibious landing craft. Of the approximately 200 torpedo boats, nearly half are DPRK-built. Most are equipped with 25-mm to 37-mm guns. The DPRK built at least 62 CHAHO fire-support patrol units. This unique vessel has a multiple rocket launcher in the center of its deck to provide fire support to ground troops or attack surface ships.

The DPRK's attack submarine inventory is estimated to include 4 former Soviet WHISKEY Class, 22 Chinese ROMEO Class, and DPRK-built ROMEO Class submarines. The WHISKEYs, acquired in the 1960s, can carry 12 torpedoes or 24 mines. Shortly after delivering four ROMEOs in the early 1970s, China helped the DPRK start its own ROMEO construction program. The ROMEOs are well equipped, have an improved sonar, and can carry 14 torpedoes or 28 mines.

To date, the DPRK has indigenously produced over 200 personnel landing craft. This includes approximately 100 NAMPO personnel landing craft based on a former Soviet P-6 torpedo boat hull. The NAMPO has a maximum speed of 40 knots and a radius of 335 nm at 28 knots. The NAMPOs provide a limited amphibious capability, each carrying up to 30 troops with a basic combat load. Amphibious assaults against CFC probably would be small, clandestine landings involving two to six NAMPO craft; CHAHO or other naval craft could provide fire support. Other amphibious craft include 8 HANTAE medium landing ships, which can carry 3 to 4 light tanks, and approximately 125 KONG BANG amphibious hovercraft.

The DPRK has a credible mine warfare capability. There are numerous small surface ships that are capable of delivering mines within both the navy and civilian sectors. Mines will be used to defend against amphibious assaults, defend strategic ports, and provide seaward flank protection for land forces. Defensive mine fields will be monitored by coastal observation teams and radar, and they will be supported by well emplaced artillery and missile batteries. This will make close approach and mine clearing operations extremely hazardous. DPRK has a large inventory of older technology mines, significant historical experience with their effectiveness, and, most importantly, the willingness to use them.

Other Considerations

Biological

Biological warfare has not received the same attention as chemical or nuclear warfare. However, if the DPRK did choose to employ biological weapons, it probably could use infectious agents, such as those causing anthrax or plague, against CFC forces.

Chemical

The DPRK is capable of producing nerve, blood, choking, and blister agents. They have at least eight industrial facilities that could produce these agents. While production rates are uncertain, large quantities of agents are believed to be available.

Chemical weapons can be delivered by virtually all DPRK fire support systems. This includes most artillery, multiple rocket launchers (including those mounted on CHAHO-type boats), mortars, FROGs, SCUD missiles, and some aerial bombs.

The DPRK plans to operate in a chemically contaminated environment. Chemical defense units are organic to combat units down to regiment level. For example, an army corps has a dedicated chemical defense battalion and a regiment has a subordinate chemical defense platoon. These chemical defense units have both detection and decontamination systems. Their missions include reconnaissance and the training of personnel in the use of protective equipment. Chemical training and exercises for both military and civilian personnel have increased consistently over the years.

DPRK chemical weapons would compliment conventional military power. In a surprise attack, DPRK forces are expected to use chemical weapons to demoralize defending forces, reduce their effectiveness, and deny use of mobilization centers, storage areas, and military bases without physically destroying facilities and equipment. Non-persistent chemical agents could be used to break through CFC defensive lines or

to hinder a CFC counterattack. Persistent chemical agents could be used against fixed targets in rear areas, including command and control elements, major LOCs, logistic depots, airbases, and ports.

Special Operations Force

Nearly 60,000 military personnel assigned to the 22 SOF brigades and light infantry battalions would be available to open a second front in CFC's rear area. These forces have five basic missions: conducting reconnaissance, performing combat operations in concert with conventional operations, establishing a second front in the enemy's rear area, countering CFC special operations in the North's rear areas, and maintaining internal security. These forces perform operations at the strategic, operational, and tactical levels. During offensive operations, corps reconnaissance units would conduct penetration missions to collect military intelligence and launch raids on military and civilian targets. Prior to the main attack, some units would infiltrate behind allied lines by air and sea, while others would cross into the ROK through tunnels under the DMZ. These units would penetrate at night to locate and destroy command posts, create confusion in rear areas, interdict troop and supply convoys, attack military and civilian installations (to include ports and airfields), and gain control of critical terrain.

Summary

Most of the DPRK's military equipment is technologically inferior to CFC equipment. The state of readiness and training for the force will decline due to the age of equipment and lack of repair parts. Therefore, the ability of the DPRK to threaten the South with conventional forces will be reduced by the turn of the century.

National Military Policy

DPRK military policy focuses on maintaining and sustaining a military force capable of conducting an offensive operation into the ROK to attain the national goal of reunifying the peninsula. DPRK military doc-

trine and policy specify the structure of DPRK armed forces, allocate industrial resources and output, and orient research and development to support the armed forces. This doctrine is the blueprint, drawn up by the highest DPRK political leaders, that describes in detail the shape of the armed forces and the way in which they are to be used. It is based on three fundamental and interconnected concepts shaped by the late Kim Il-song's vision of the future of the Korean Peninsula:

- Eventual reunification,
- DPRK regime survival and leadership of a unified Korea, and
- the application of military force to achieve reunification.

DPRK force development and weapons acquisition strategy focuses on countering the strengths and weaknesses of CFC forces while remaining independent and self-sufficient in maintaining and modernizing their armed forces. The DPRK military is attempting to meet the following force objectives:

- Develop and refine self-sufficiency in armament.
- Maintain active force size and rapid force generation capabilities of reserve forces.
- Overcome terrain and technological disadvantages.
- Ensure sustainability and improve warfighting infrastructure.

A major hurdle faced by the DPRK in attaining its force objectives is the dismal state of its economy. Though the DPRK dedicates critical resources to the military, at the expense of all other sectors of society, the country may be facing economic collapse during this decade. Because of this, the DPRK may be reaching a decision point, either to use its military force or risk losing the military option. Consequently, there is more pressure on the DPRK to complete its force objectives. Barring economic collapse or military action, DPRK military policies will continue to support the national goal of reunification.

The primary strength that the DPRK can draw upon is the support of the North Korean people. Whether by force of indoctrination or genuine feelings of nationalism, this support constitutes a reservoir of national power. DPRK soldiers are taught that the outcome of a war is not decided by modern weapons and military technology, but by the "noble mission and revolutionary spirit with which it fights for the liberation of the people." This translates into a military force capable of supporting a wide range of combat options without consideration for danger or moral values.

Vulnerabilities of this military doctrine include the sheer physical exhaustion of the DPRK population. This is perhaps the greatest impediment to the North's attempt to offset the growing economic and military power of the ROK. On the battlefield, perhaps the most decisive shortcoming of the DPRK would be the lack of modern reconnaissance, surveillance, and target acquisition systems. This shortcoming is amplified by the relative inaccurate and cumbersome characteristics of most of the DPRK's major weapon platforms.

Military Strategy

The primary objective of North Korea's military strategy is to reunify the Korean Peninsula under North Korean control within 30 days of beginning hostilities. A secondary objective is the defense of North Korea. To accomplish these objectives, North Korea envisions fighting a two-front war. The first front, consisting of conventional forces, is tasked with breaking through defending forces along the DMZ, destroying defending CFC forces, and advancing rapidly down the entire peninsula. This operation will be coordinated closely with the opening of a second front consisting of SOF units conducting raids and disruptive attacks in CFC's rear.

In developing the force to fulfill this two-front strategy, North Korea's leaders realized that they could never reach technological parity with the United States or U.S.-supplied South Korea. Instead, they focused on attaining overall combat superiority through the use of surprise, shock,

speed, and overwhelming quantities of troops and firepower coupled with a well-trained SOF.

North Korea, devastated during the Korean War, also places great emphasis on maintaining a strong defense. To achieve the strategic defense mission, North Korea has established defensive belts. They are designed to defeat any attack from ground or amphibious forces. The main strategic belt runs from the DMZ to Pyongyang. This belt contains over two-thirds of the DPRK's active maneuver ground forces. Ground defense along this belt is carried out by MPAF and corps level units. Two army-level headquarters may be activated for wartime operations. Coastal defense is provided by the navy, and ground antilanding defense is provided by the army. Defense of DPRK airspace is provided by the air force and antiair artillery units of the army. At the initiation of a DPRK ground offensive, the North's reserve forces, numbering some 5 million, would man a pre-established, in-depth national defense network.

Military Doctrine

DPRK military doctrine is based on a blend of Russian operational art, Chinese light infantry tactics, and North Korean lessons learned during the Korean War. This doctrine is tempered by the national goal of *chuche* (self reliance). The impact of *chuche* is that imported military concepts have been adapted to the unique geography, social conditions, and economic conditions found on the Korean peninsula. The guiding principles within DPRK doctrine are as follows:

1. Annihilation: Destroy defending CFC forces in place. Do not allow them to withdraw and regroup.

2. Surprise Attack: Achieved by making an unexpected assault in an unexpected manner. Prevent CFC from taking effective countermeasures. Position forces to attack with little preparation. Practice excellent OPSEC and deception. Attacks at night and during adverse weather are the best way to achieve surprise.

3. Overwhelming Firepower: Employ continuous massing fires (including chemical) from heavy guns and multiple rocket launchers to create opportunities for maneuver and to pulverize CFC forces.

4. Mobility: Employ tanks, armored personnel carriers, self-propelled artillery, vehicle-mounted rocket launchers, and vehicle-mounted anti-aircraft guns to be able to attack/counterattack while moving. Utilize a redundant C2 system while moving.

5. Impregnable Rear: Ensure that rear areas are secure from CFC attack to remain fully capable of continuous support to attacking forces.

6. Conduct Special Operations and Guerrilla Warfare in the Enemy's Rear: These operations are to be conducted in close coordination with conventional operations to maximize disruption of CFC air, artillery, and logistics support to frontline CFC units.

7. Use the NKN and NKAFF in Coordination with Ground Forces: Employ the unique fires available from these forces to carry the fight to the depths of CFC defenses. Use their transport capabilities to insert SOF. Use them to safeguard the impregnable rear from air and sea attack.

8. Echelon Forces: Echelon at corps and below to provide both offensive and defensive options as a conflict unfolds. Normally three echelons: about two-thirds of force in first echelon, about one-third in the second echelon, with about one-ninth held in reserve or as the third echelon.

9. Combined-arms Operations: Coordinate the actions of all forces, large and small, conventional and unconventional, to successfully execute combat engagements.

10. Adequate Logistics: Ensure that there are sufficient logistic units to support combat operations and long LOCs.

11. Use Terrain to the Best Advantage: Emphasize mountain operations.

12. Detailed Reconnaissance: Know CFC locations and be able to target them.

Operational Level of War

Operational Level Offense

The operational objective of DPRK forces in the offense is the destruction of CFC forces in a short duration, high intensity campaign employing maneuver warfare.

To achieve these objectives, the DPRK has developed a mobile ground force emphasizing the utilization of overwhelming firepower. The latest evolution in force structure and doctrine, begun in the late 1970s, has resulted in two distinct force organizations: a large, mobile active force (including SOF) organized, trained, and deployed to carry out offensive operations against the CFC, and an extensive, well trained reserve force to defend the DPRK.

The DPRK offensive against the ROK will consist of three phases. The objective of the first phase will be to breach the defenses along the DMZ and destroy the forward deployed CFC forces. The objective of the second phase will be to isolate Seoul and consolidate gains. The objective of the third phase will be to pursue and destroy remaining CFC forces and occupy the remainder of the peninsula.

The four forward conventional corps, I, II, IV, and V, are considered the "warfighting" corps. They are expected to conduct the initial attacks with the primary mission of annihilating CFC forces north of Seoul. The concept of annihilation is the key to the NKA doctrine, as it continually states the necessity to destroy enemy forces in place. The forward corps' follow-on mission is the defeat of CFC forces in depth.

The remaining conventional corps, III, VI, VII, VIII, and the Capital Defense Corps (CDC) have several possible missions. These missions include providing follow-on forces, round-out forces, and serving as

coastal, rear area, or capital defense forces. Dependent on the forward corps' success, the rear corps will release units to serve as replacements.

Two mechanized corps and part of the armor corps will provide the exploitation forces to carry the battle beyond Seoul. The remaining mechanized corps and armor from the armor corps could provide the strategic reserve north of the DMZ.

Just prior to the initiation of hostilities, two army-level commands may be established. These commands are expected to control operations from the DMZ to the port of Pusan. Army Group I would be responsible for conducting the main attack into the western portion of South Korea and destroying the bulk of CFC forces north of Seoul. Army Group II would be responsible for conducting supporting attacks down the eastern portion of the ROK and securing the left flank of Army Group I.

Army Group II would most likely consist of the following forces:

First Echelon: Will consist of the forward corps. Their mission will be to conduct the initial infantry assault across the DMZ and break through CFC defenses.

Second Echelon: Will consist of mechanized and armor forces. The primary mission of these forces will be to envelop and destroy forward deployed forces.

Third Echelon: Will also consist of mechanized and armor forces. The mission of these forces will be to pursue and destroy the remaining CFC forces and to occupy the entire peninsula. Additionally, strategic reserve forces or follow-on forces exist to augment all echelons if required.

Although the NKA places great emphasis on maneuver, it has elected not to rely on extensive mechanization of its infantry forces. It is important to note the NKA concept of "mechanization." To the NKA, mechanization is designed to provide rapid "protected" movement of an infantry force. For the most part, personnel travel in armored personnel carriers or trucks, not infantry fighting vehicles. Once the force reaches



Corps Level Organization

its destination, troops dismount to conduct traditional infantry operations rather than Russian-style infantry fighting vehicle (IFV) tactics while fighting a mounted battle, whenever possible, through the enemy defenses. Selective mechanization has been accomplished through the use of self-propelled artillery and anti-aircraft systems and tanks, but not

large quantities of armored personnel carriers or IFVs. As in the past, the DPRK ground force of the 1990s relies on the foot soldiers' ability to exploit nontrafficable terrain. The objective is to overwhelm CFC units with conventional forces and exploit breakthroughs with mechanized assets without becoming roadbound.

Exploitation Forces

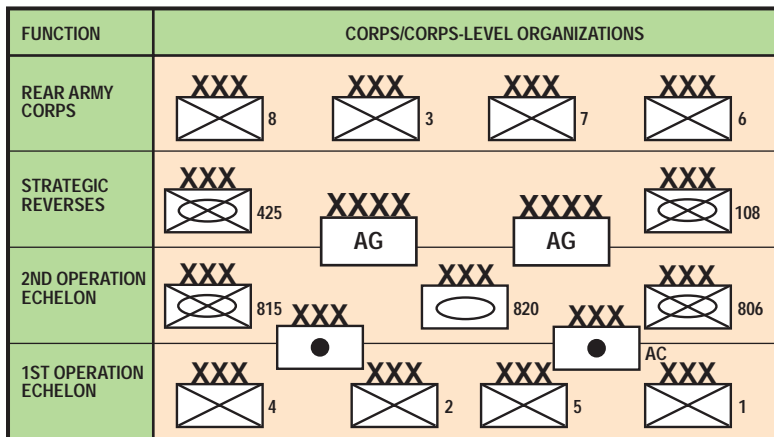
To support offensive operations of the forward corps, the NKA has created four mechanized corps and an armor corps. Two mechanized, the 806th and 815th, and the 820th armored corps are positioned to support strikes by the forward conventional corps and are considered to be tactical exploitation forces. Individual mechanized brigades may be turned over to the control of the forward corps to exploit breakthroughs achieved by the infantry. Their main objective is to drive deeply behind CFC lines and set up blocking positions to cut off withdrawing or reinforcing CFC forces. Each mechanized brigade is capable of independent operations behind enemy lines.

Successful destruction of CFC forces north of Seoul will enable the NKA to commit its operational exploitation forces. This force will operate under the control of an army command and conduct corps level, cohesive operations. They are expected to be committed at the time forward CFC forces are annihilated. Their mission is to quickly seize and secure key terrain leading to control of the area between Seoul and Pusan.

The NKA will seek force ratios of 3-5 to 1 in armor, 6-8 to 1 in artillery, and 4-6 to 1 in infantry forces to mount an attack. In attempting to breach a well prepared defensive position, the NKA may be expected to seek even larger ratios. This undoubtedly would be the case in attempting to break through DMZ defenses.

Combined-arms operations constitute the foundation of tactical battle in NKA doctrine. Utilization of the forward conventional corps, reinforced by the mechanized and armor corps, to fight from the DMZ to Pusan is called the Strike Force concept. This concept embodies how the NKA is expected to fight, especially south of Seoul or in defense of the DPRK.

NKA FORCE STRUCTURE



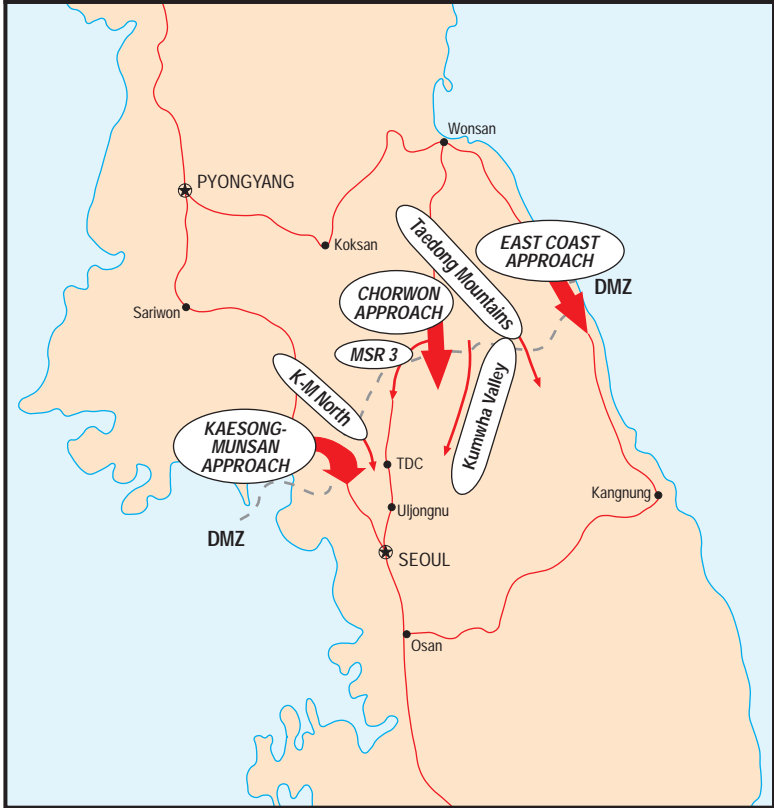
The Strike Force concept was devised to compensate for DPRK deficiencies, CFC strengths, and terrain considerations. Using a task organization approach, the NKA fields, trains, and exercises a large ground force, designed to overcome the strengths and exploit the weaknesses of CFC forces. Strike Forces/Groups are formed around a core unit, either a corps, division, or regiment/brigade. As the situation develops, additional units, such as armor, or artillery, may be diverted to the Strike Force to significantly increase available fire support.

The DPRK maneuver forces will echelon in three parts: a forward element (most likely reinforced light infantry), which is a self-contained maneuver force and two maneuver elements. Although the second maneuver element is sometimes referred to as the reserve, it contains sufficient combat weight to assume the lead of the main attack should the first maneuver element fail or stall, or to attack another objective.

Avenues of Approach

The NKA is expected to use three primary avenues of approach into the ROK. They are the Kaesong-Munsan approach, the Chorwon Valley approach, and along the east coast. There are several sub-maneuver

KAESONG-MUNSAN	CHORWON VALLEY	EAST COAST
Kaesong-Munsan North	Kumwha Valley Chorwon West (MSR 3)	Taedong Mountains



Avenues of Approach

corridors that can facilitate maneuver from the three major avenues of approach.

The Second Front

As the attack against the forward defenses along the DMZ begins, DPRK forces will initiate SCUD and FROG missile attacks with high explosives, smoke, and possible nonpersistent chemical warheads against airfields, lines of communications, C2 and logistics facilities. Additionally, the DPRK attacks will be supported by the opening of a "second front" in CFC's rear areas by teams of SOF units. These soldiers, some dressed in ROK army uniforms and carrying ROK weapons and equipment, will infiltrate into the south by air, sea, and through tunnels under the DMZ to attack CFC airfields, C3, and other key targets.

Operational Level Defense

In the defense, DPRK forces have an operational objective of coordinating the defense and conducting counterattacks to repel CFC forces from DPRK-controlled territory and adjacent waters. The DPRK views the offensive as the only means with which to achieve decisive victory. Thus, DPRK forces would use the defense only to consolidate gains, await additional resources when temporarily halted, protect flanks, repulse CFC counterattacks, or free resources for other offensive actions.

In the defense, DPRK forces plan to use counterattacks to quickly disrupt CFC offensive operations. Once it appears that these forces have been, or will be, successful in breaching the defense, DPRK forces will attempt an immediate counterattack.

Fire support in the defense is well planned and highly concentrated to cover flanks and forward sectors. Artillery fires in the defense include:

- **Long-range fires:** Designed to engage CFC forces before they can organize into attack formations.

- **Close combat fires:** Designed to concentrate fire on CFC forces just prior to the assault on DPRK defensive lines.
- **Final protective fires:** Designed to begin just prior to CFC breaching operations and intended to limit avenues of approach and thwart CFC penetration of the main defensive position.
- **Fires within the defensive positions:** Designed to blunt CFC penetrations of the defense while DPRK forces mount a counterattack.

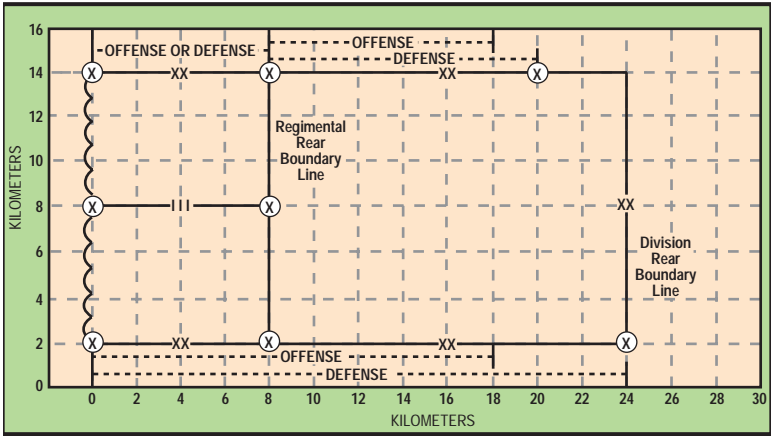
In the defense, the DPRK also places great emphasis on anti-aircraft artillery (AAA) and engineer support. The first priority of AAA is the protection of artillery assets, but they would be deployed to cover the defense in depth. Engineer support would include the use of anti-tank and anti-personnel obstacles to deny CFC avenues of approach, especially armor, into the main defensive area. The anti-tank plan is an integral part of DPRK defensive operations. They view tanks as a primary threat to a successful defense. As such, a DPRK defensive plan would include anti-tank operations, engineer support, and artillery support. In all defensive operations, the North Koreans plan for an anti-tank support area forward in the defensive zone.

NKA Tactics in the Offense

NKA Tactical Principles

Division and lower echelon units are considered tactical level elements. They are charged with winning battles and engagements that support operational objectives. Combined-arms operations constitute the foundation of tactical battle in NKA doctrine. The most important tactical principles of this doctrine are as follows:

- 1. Mass:** The focusing of sufficient combat power against CFC's center of gravity to disrupt operational or tactical decision making.
- 2. Surprise:** Used to significantly multiply combat power to provide a decisive advantage over a numerically or technologically superior CFC force.



Division and Regimental Depths

3. Annihilation: Of utmost importance to the NKA, used so that CFC formations cannot regroup to counterattack or reconstitute.

4. Fluidity: The NKA emphasizes the need for a continuous flow of battle. Forces designated to achieve breakthroughs in CFC defenses are quickly followed by mechanized forces that are tasked to penetrate deep into CFC's rear area.

NKA Tactical Formations in the Offense

The infantry division is the basic combat unit in the NKA and was designed to provide maximum flexibility for maneuverability. Infantry divisions are organized with tanks, artillery, and engineers to aid in accomplishing the mission. Artillery provides orchestrated fire support, and during offensive operations, it is designed to protect the advancing force by continually placing a heavy barrage in front of the assaulting echelons.

The NKA uses two primary tactical formations for the division, brigade, regiment, and battalion: the march formation and the attack formation.

NKA March Formation

Generally, the NKA plans to move during darkness or under conditions of limited visibility. When forces move during daylight hours, special countermeasures, such as camouflage, antiair and antitank defense, are emphasized.

The composition of the march formation includes a forward-deployed reconnaissance unit, advance guard, security force, main body, and a rear guard. For an NKA regiment, the forward security for the main body is a reinforced company, located 5-10 km forward of the main body. Flank security for the regiment are reinforced platoons, one each, operating 2-3 km to each flank. The main body consists of two-thirds of the combat power of the march formation. Its mission is to maneuver and destroy CFC formations that cannot be overcome by the advance guard. The regiment's rear guard usually consists of a platoon that follows 2-3 km behind the main body. During a retreat, the rear guard probably would consist of a reinforced company, operating 5-10 km behind the main body.

BASIC FORMATIONS

COLUMN (or file)



Weak to the front

WEDGE



Used when the situation is uncertain
In anticipation of incidental engagement

ECHELON LEFT



Used when a flank attack
is expected from the left

RANK (or on line)



Weak to its flanks
Enemy situation is known
Front is broad

**DIRECTION
OF ATTACK**

INVERTED WEDGE



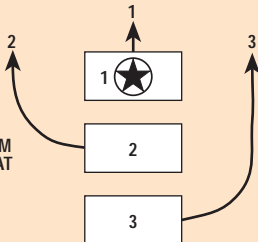
Used when the situation is certain
Normal formation

ECHELON RIGHT

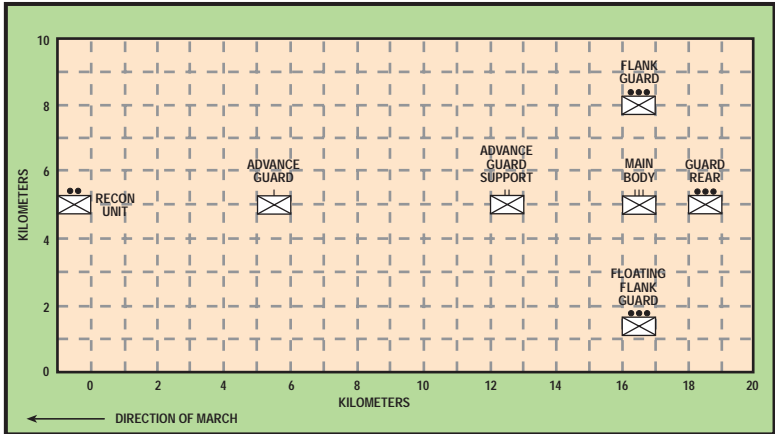


Used when a flank attack
is expected from the right

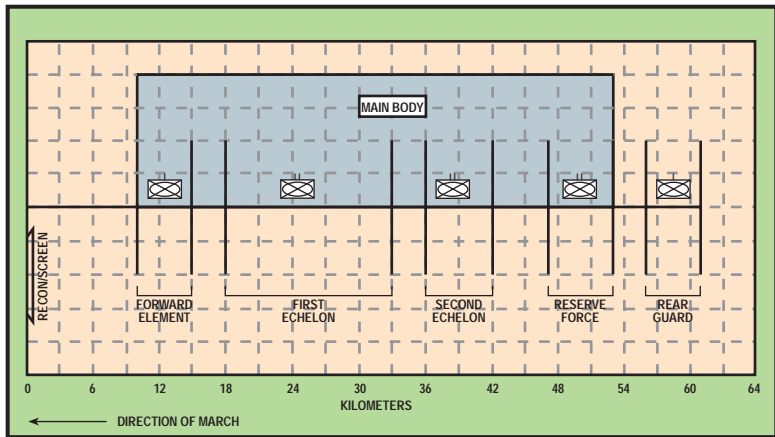
**USUAL TRANSITION FROM
THE MARCH INTO COMBAT
DEPLOYMENTS**



 **COMMANDER'S
LOCATION**



Infantry Regiment in March Formation



Mechanized Brigade March Column

AVERAGE MARCH RATES

MARCH	RATE OF MARCH (Km/Hr)		MARCH DISTANCE 1 Day (Km)	REMARKS (Hrs)
	DAY	NIGHT		
Foot	4 - 5	4 - 5	Regular: 30 Forced: 45	Regular: 7 - 8 Forced: 10 - 12
Vehicles	15 - 20	10 - 15	Regular: 150 Forced: 200	

AVERAGE VEHICLE SPEED

TYPE OF ROAD	UNDAMAGED SURFACE	10% SURFACE DAMAGE	> 10% SURFACE DESTRUCTION
Paved	40 - 50 Km/Hr	20 - 35 Km/Hr	10 - 20 Km/Hr
Gravel/Rubble	40 - 45 Km/Hr	20 - 30 Km/Hr	10 - 20 Km/Hr
Dirt	15 - 25 Km/Hr	8 - 15 Km/Hr	5 - 10 Km/Hr

UNIT/VEHICLES INTERVALS

VEHICLES	INTERVALS
COMPANIES	25 - 50 Meters
BATTALIONS	3 - 5 Kilometers
REGIMENTS ON THE SAME ROUTE	5 - 10 Kilometers
DIVISION MAIN BODY AND DIVISION REAR SERVICES	15 - 20 Kilometers

NKA Attack Formation

NKA combat organization is determined by the mission assigned, terrain, and enemy capabilities. Combat formations are divided into the forward element, the first and second maneuver echelons, and the reserves. The first echelon is responsible for penetrating initial CFC positions and achieving the immediate objective. The second echelon or reserve, is tasked with destroying all bypassed CFC elements. The second echelon is also used to secure the flanks and rear area of the first echelon. The reserve forces are used to reinforce the first and second echelons and as a standby for a counterattack. Divisions and regiments will also have an artillery group (DAG or RAG) consisting of organic artillery augmented with artillery from higher echelons. For offensive operations, forces are organized as follows:

1. Division

- *Forward Element:* Reinforced light infantry battalion.
- *First Echelon:* Two regiments reinforced by tanks and artillery. Responsible for accomplishing the division's immediate objective, the destruction of CFC's regimental reserve. On order, continue the attack to accomplish subsequent objective of destruction of CFC's division reserve.
- *Second Echelon:* One regiment (-). Follows the first echelon by 6-8 km, reinforced by tanks and artillery when committed. On order, continue the attack to accomplish division's subsequent objective.
- *Reserves:* Battalion-size element composed of infantry, tank, and antitank reserve. Responsible for flank and rear area security for attacking echelon and mop up operations to exploit success. Acts as replacement or infiltration force as needed.

2. Regiment

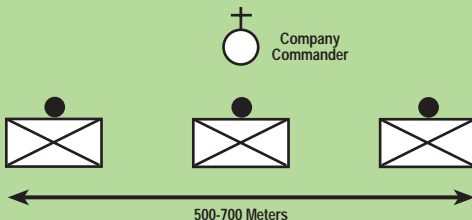
- *Forward Element*: Reinforced infantry company.
- *First Echelon*: Two battalions reinforced with tanks and artillery. Accomplish regiment's immediate objective of destroying CFC's battalion reserve. On order, continue the attack to accomplish regiment's subsequent objective of destroying CFC's regimental reserve.
- *Second Echelon*: One battalion (-). Follows first echelon at 3-5 km, reinforced with tanks and artillery upon commitment. On order, accomplish regimental subsequent objective.
- *Reserves*: Composed of a company-size element. Mission and employment are the same as division reserves.

3. Battalion

- *Forward Element*: Infantry company.
- *First Echelon*: Two companies reinforced with tanks and engineers. Companies and platoons attack together; responsible for achieving battalion's immediate objective of penetrating CFC's front lines. On order, continue the attack to battalion's subsequent objective of destroying CFC's battalion reserve.
- *Second Echelon*: One company (-). Follows the first echelon at 0.4-1 km. When committed to the offense, receives tank support to accomplish battalion's subsequent objective. On order, continue the attack to accomplish the regiment's subsequent objectives.
- *Reserves*: One platoon-size force. Reinforces the attack echelon, conducts mop-up operations, and supports the exploitation of battle successes.

NKA Tactical Frontages and Depths in the Offensive

NKA INFANTRY PLATOON ATTACK FORMATION



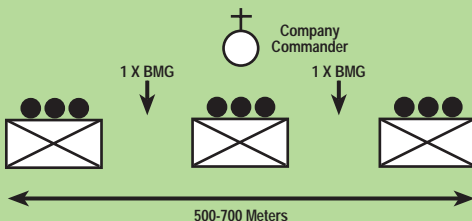
VULNERABILITIES: The platoon leader is the only link to company and battalion. Get him and you will decrease the platoon's ability to fire and maneuver.

WEAPONS:

- 27 AK-47
- 3 RPK (LMG)
- 3 RPG-7
- 1 SNIPER RIFLE

NOTE: The platoon will be supported by company crew-served and battalion indirect-fire weapons.

NKA INFANTRY COMPANY ATTACK FORMATION



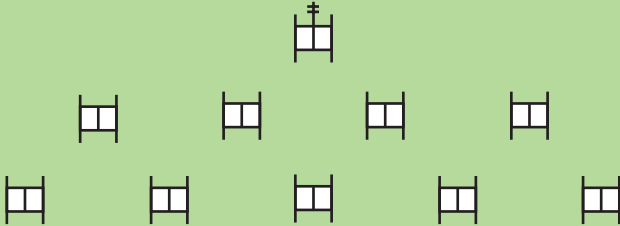
VULNERABILITIES: The company will come on line about 300m from your position. Use mines, small arms and mortars to disrupt his advance. Rough terrain may force him to expose his flanks.

WEAPONS:

- 81 AK-47
- 9 RPK (LMG)
- 9 RPG-7
- 3 SNIPER RIFLE
- 2 HVY MACHINE GUN

NOTE: The company will be supported by battalion and regimental indirect-fire weapons.

NKA TANK COMPANY ATTACK FORMATION

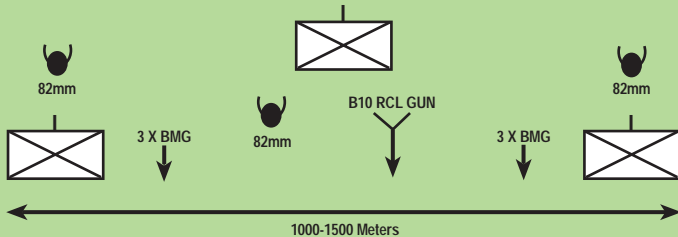


VULNERABILITIES: Engage the tanks at maximum range with TOWs. Use M60 and .50 CALs to keep tank crews buttoned up. That will cut their ability to see by half. Move to alternate sites often.

WEAPONS:
10 T-55/62 TANKS

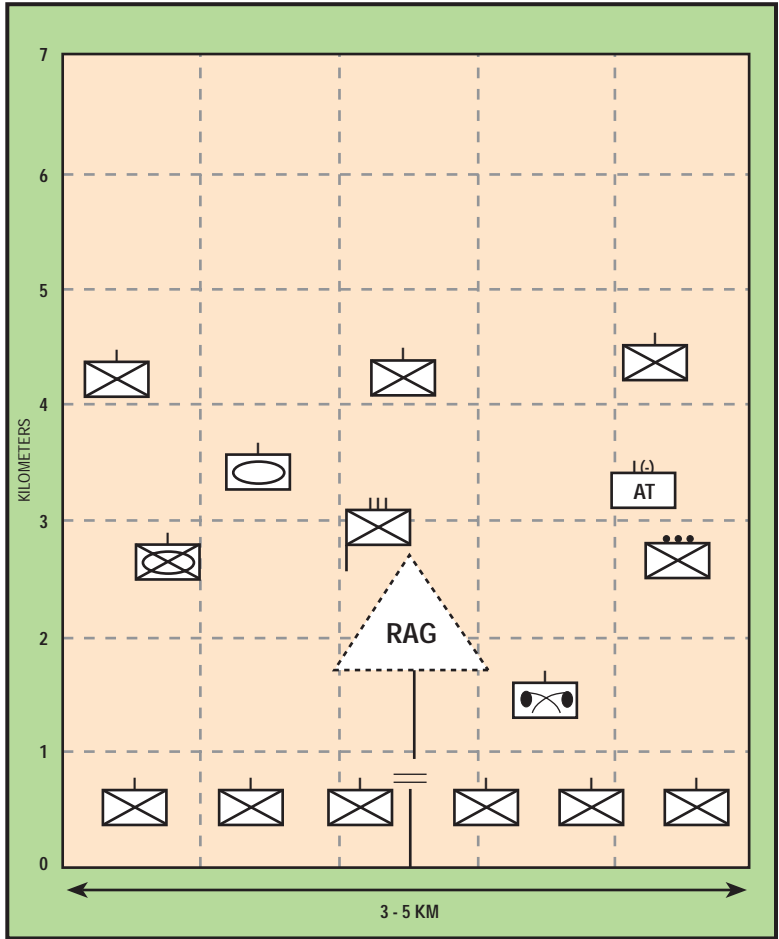
NOTE: The tank company will be supported by battalion and regimental indirect-fire weapons.

NKA INFANTRY BATTALION ATTACK FORMATION

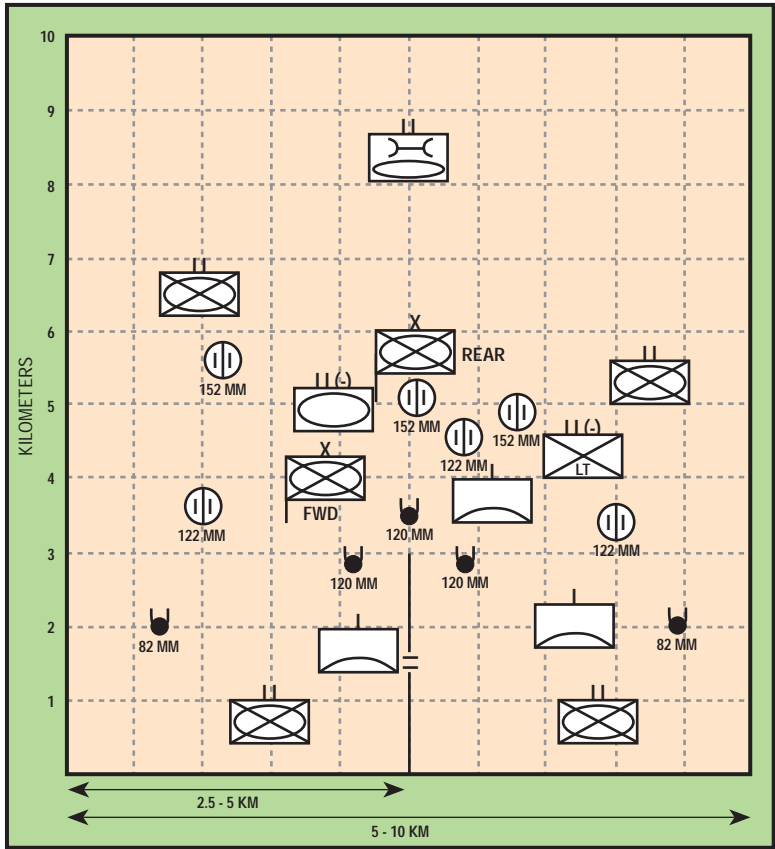


WEAPONS:
345 AK-47
27 RPK (LMG)
31 RPG-7
9 SNIPER RIFLE
6 HVY MACHINE GUN
3 B10 (82mm RCL)
9 82mm MORTARS

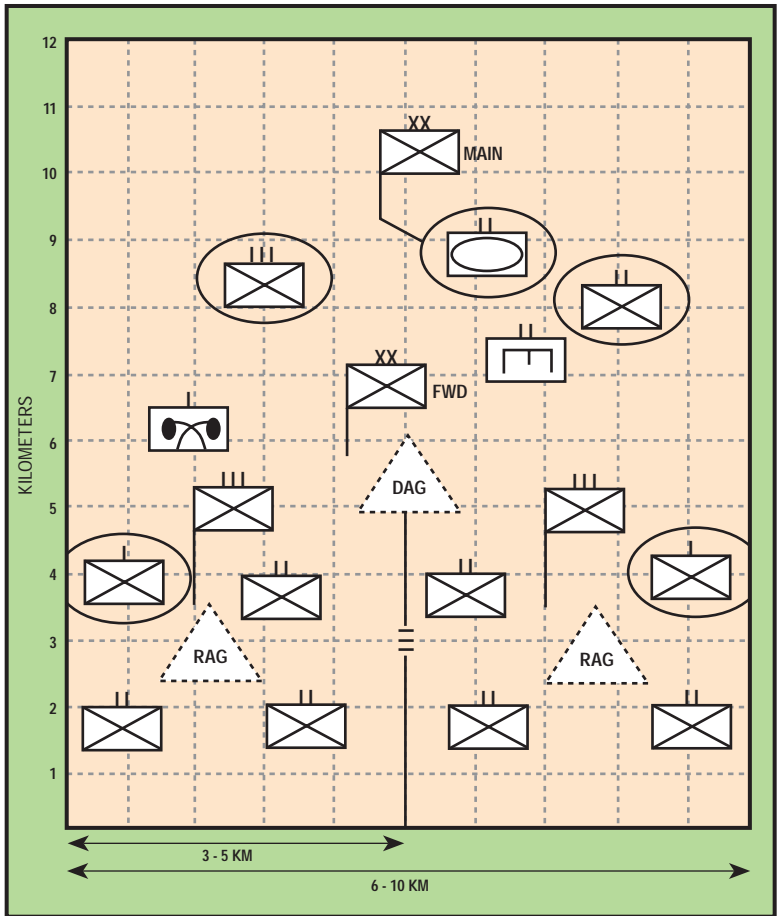
NOTE: The battalion will be supported by indirect fire from regiment and division.



Regiment in the Attack



NKA Mechanized Brigade in the Attack



NKA Division in the Attack

NKA Tactical Maneuver

The NKA offensive tactical maneuver includes the meeting engagement, movement to contact, deliberate attack, pursuit, spoiling attack, and bypass.

Meeting Engagement

The NKA will conduct a meeting engagement when there is a demand for the redirection of combat deployments because of rapid situational changes. They are characterized by hasty planning due to limited time, a continuous effort to seize and retain the initiative, deployment into combat from the march column at high speed, and a lack of detailed intelligence. The meeting engagement unfolds as follows:

- March to contact with emphasis on forward reconnaissance.
- Initial contact and combat development by the advance guard.
- Maneuver and engagement of the main force.
- Termination and transition to subsequent actions.

When the forward element guard of a marching unit comes into contact with the enemy, the actions of the main body would depend on the size of the CFC force encountered. If it is equal to or smaller than the forward element, the forward element would attempt to decisively engage and destroy the CFC force. If it is larger than the forward element, the main body would either bypass or envelop the enemy strongpoint.

Movement to Contact

NKA movement to contact is designed to gain initial ground contact with CFC forces or to regain lost contact. Though little is known on the specifics of NKA doctrine for movement to contact, there are certain principles that apply to this type of offensive operation. The NKA will probably seek to make contact with the smallest CFC element possible to maintain freedom of maneuver with the bulk of its force. All available reconnaissance and security means would be employed to ensure that

the main force is committed under the most favorable conditions. At the division level, subordinate units would be expected to act boldly within clear directives in order to seize the initiative, to keep CFC off balance, and to exploit success. The NKA force conducting a movement to contact will organize in a march formation, with advance, flank, and rear security elements protecting the main body. NKA movement to contact would end when CFC resistance requires the deployment and coordinated effort of the main body. It normally ends in a meeting engagement or a deliberate attack maneuver.

Deliberate Attack

When an NKA division conducts a deliberate attack, several types of maneuvers contribute to the overall execution and flow of the battle. When attacking a defending CFC force that cannot be bypassed (or should not be bypassed because of possible future combat potential), the NKA would plan to begin with a penetration. This would be followed with the envelopment and destruction of CFC forces and then a pursuit of any withdrawing CFC forces to ensure complete destruction.

In the conduct of a deliberate attack, the NKA assigns a specific mission/objective to a company-size unit. A battalion or larger unit is assigned an immediate and a secondary mission/objective. The secondary mission/objective is the immediate mission/objective of the next higher headquarters. For example, the secondary mission of a battalion would be the immediate mission of its parent regiment. At night or when visibility is poor, a single broad mission would normally be assigned.

The objective of the **penetration** is to penetrate CFC's defense and would be used when CFC's flank is exposed, or when an exploitable gap or weakly defended point exists in CFC's forward defensive positions. A successful penetration employs the elements of surprise and strong firepower. The selection of the penetration direction and effective employment of secondary attack force and infiltration units are important to the success of this maneuver.

The **envelopment** is the primary and preferred tactical maneuver for NKA ground forces. Whenever possible, it would be attempted, using the forward element to fix and engage CFC defensive positions, while first echelon forces attack CFC's flank and rear. The second echelon will conduct a penetration once the enemy front is weakened or a second envelopment. The main combat weight during an NKA envelopment would be against CFC's flank with the intent to divide and destroy and prevent the arrival of CFC reinforcements.

A **split envelopment** would be used after the first breakthrough of CFC defensive positions. As the main NKA force continues to advance deeper into the defense, subordinate elements would be tasked to conduct split envelopments to divide, isolate, encircle, and destroy remaining CFC forces one by one. This maneuver requires close coordination and maneuver among NKA units. During an NKA deliberate attack, several small unit maneuvers are designed to contribute to the overall success of the penetration or envelopment. They are the POCHO and CHEON IB.

The **POCHO** (main attack) is emphasized at the squad and platoon levels and plans for the infiltration through gaps in CFC defensive strong-points and attack to CFC's rear.

The **CHEON IB** (supporting attack) is a tactical maneuver that stresses the exploitation of small gaps in CFC's defensive positions to allow for infiltration to the rear. It differs from the POCHO in that it normally would be conducted by small elements of the support attack.

During the deliberate attack, some NKA units may be assigned the mission of conducting a **pointed advance**. This would be conducted by straight-leg infantry units along a narrow front with the intention of penetrating CFC defenses along a perpendicular ridgeline that is linked to the defensive deep area. This form of maneuver would commonly be used in combination with the breakthrough of the main attack or with an envelopment, and calls for heavy fire support. Although a pointed advance would normally take place in an area adjacent to the main

attack, it can also take place in the frontal area of the main attack when no avenue of approach exists that is favorable for a breakthrough deep into CFC's defense. In the execution of a pointed advance (and subject to terrain limitations), an NKA division would use two battalions located 1 to 1.5 km from the main assault to penetrate to a CFC battalion's front line and an NKA regiment would use two companies located 500 to 700 m from the main assault to penetrate into a CFC company's front line.

Pursuit

The NKA would execute the pursuit to block CFC's withdrawal routes. This maneuver calls for advancing to a point of key terrain before CFC forces begin to withdraw and destroying them in a series of meeting engagements.

Generally, NKA pursuit operations would use a column formation to provide speed and flexibility. The lead elements in the pursuit would attempt to apply pressure on CFC forces to prevent disengagement from contact. Concurrently, NKA artillery would attempt to form a barrier at road intersections or other chokepoints, in an attempt to cut off CFC withdrawal routes. Throughout the pursuit, the NKA plans for the forward deployment of artillery and mortars to maintain a high level of fire support. NKA engineers are expected to eliminate obstacles to facilitate the advance while the assault forces push forward in an attempt to commit the CFC reserve force. NKA reserve forces are expected to infiltrate CFC rear areas. NKA doctrine includes three types of pursuit: frontal, parallel, and composite.

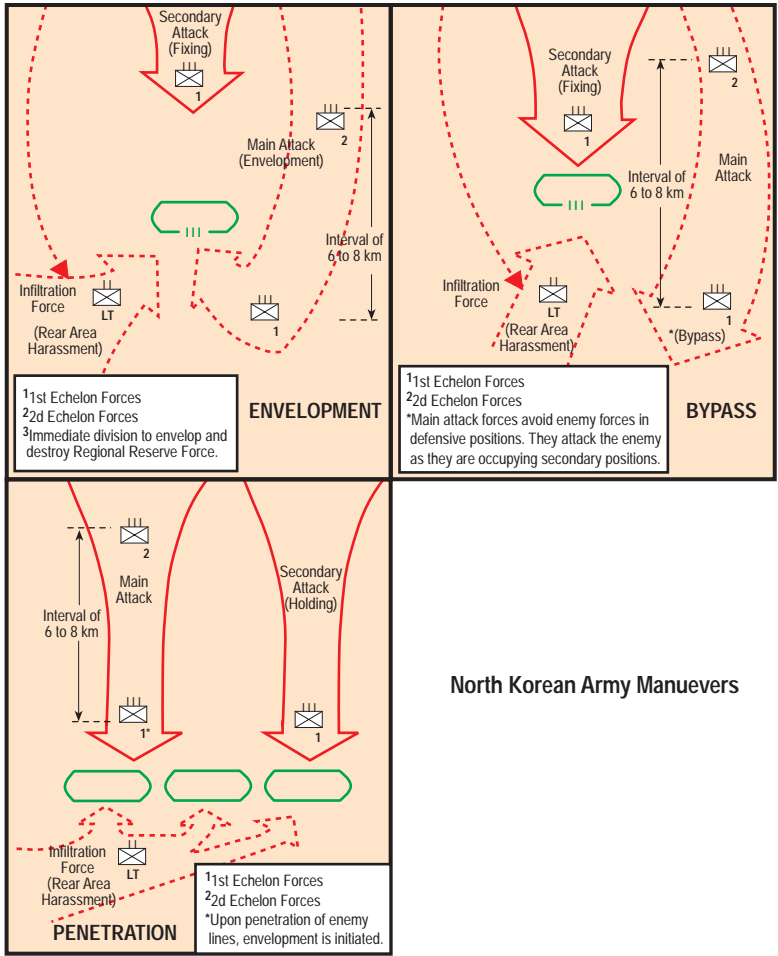
A **frontal pursuit** would be executed when there are no parallel bypass routes or when strong pressure is required to keep CFC forces from disengaging from combat. The NKA might also use frontal pursuit to cover other forces conducting a parallel pursuit into CFC's flank and rear areas.

The NKA would execute a **parallel pursuit** when routes exist on CFC's flanks. The NKA would attempt to conduct a surprise attack on these flank areas to cut off CFC withdrawal routes. The NKA might also conduct a **composite pursuit**, a combination of the frontal and parallel pursuits. The NKA main force would attempt to pressure CFC's covering forces, while simultaneously attempting to cut off CFC's withdrawal routes. An attack would be conducted into CFC's flank and rear areas.

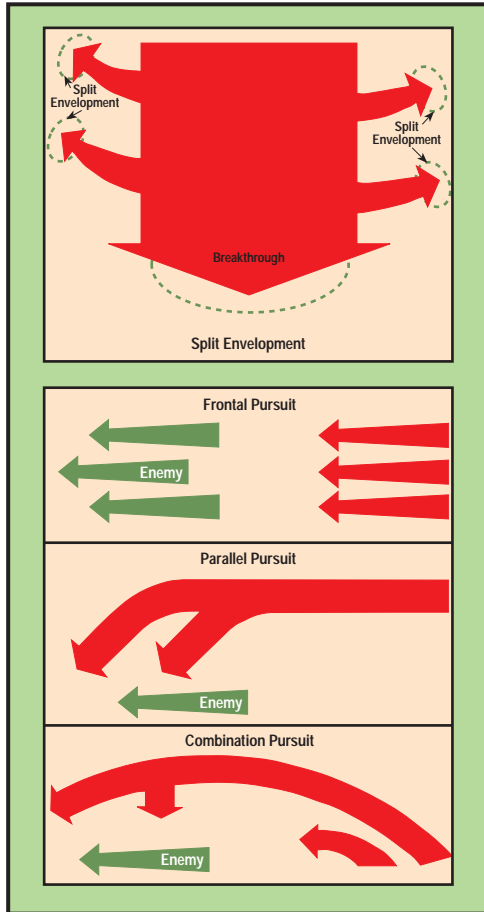
An NKA pursuit operation would cease when CFC forces are completely destroyed, NKA forces have outdistanced their logistic lines, NKA forces in the pursuit are overextended, or when confronted with a powerful CFC defensive position.

Bypass

NKA forces would conduct a bypass maneuver in an attempt to force CFC forces to abandon or shift defensive postures. A bypass maneuver is characterized by an attempt to annihilate CFC reinforcements and block withdrawal routes to prevent a CFC withdrawal. An NKA bypass would have a secondary attack axis with emphasis on superior firepower and maneuverability and is a combined-arms operation with a goal of striking deep into CFC's rear area. A successful bypass operation would make use of surprise, deception, and terrain. The bypass as an attack maneuver is like an envelopment, except the first echelon does not become engaged.



North Korean Army Maneuvers



North Korean Army Maneuvers (Continued)

Night Attack

The NKA views night operations as offering the greatest opportunity for surprise and would use this method for closing with CFC forces without being detected by forward defenses, attacking targets, opening passages through obstacles, and secretly moving second-echelon forces forward.

Though based on simple movements and attack formations, the NKA regard the night attack as an important and complex form of combat requiring close control, detailed reconnaissance, and daylight preparation. It could be a continuation of a daylight attack or a counterattack from an established defensive position.

Although the starting time for an NKA night attack could vary depending on the situation, the NKA would take into consideration times when CFC patrol activities appear to be relaxed, during poor weather, when CFC troops are asleep, or when they appear to be off-guard because of lack of previous combat operations. Night attacks launched before midnight would be executed for the purpose of expanding previous daytime exploitation operations. Night attacks launched after midnight would be executed as the beginning of daylight offensive operations.

Night attack formations would be selected based on the location of the attack starting position. NKA doctrine includes three types of night formations: the column, standing abreast, and dispersed. The column formation would be used when the attack starting position is located a long distance from CFC defensive lines. The standing abreast formation is the standard night attack formation. The dispersed formation would be used when the attack starting position is located near CFC's defensive lines.

The NKA night attack formation would normally use a narrower front than in the day. Also, the assault line would normally be closer to CFC positions than in the day (less than 150 m) and movement to this point would stress the need to avoid detection by CFC reconnaissance or surveillance. During the advance, NKA personnel would quickly drop to the ground at CFC employment of illumination and then quickly resume the

advance when the illumination is negated. Should they encounter a CFC patrol or security force, the advancing force would attempt to quietly capture or dispose of these forces with "gun barrel or soundless arms."

To improve command and control, precise avenues of approach would be designated. Easily recognizable terrain features would be selected as control points to facilitate movement and to indicate the direction of the attack. Additionally, a compass-bearing specialist would be assigned to each sector unit.

Should the NKA force conducting a night attack be discovered and come under fire and illumination, it would move promptly, without stopping, towards the attack line, avoiding fire as much as possible and maintaining communication silence. Upon initiation of the attack, artillery and mortar units would open fire at designated targets while the infantry initiates the attack throwing hand grenades, engaging in hand-to-hand combat, and shouting battle cries. To maintain the proper direction of the attack, tracer and artillery illumination rounds may be used. Armor assets would be held at the initial attack positions and, on order, advance to join the infantry.

Armor Support to Offensive Operations

NKA armor units are designed to act decisively in combat and operate independently or as part of combined-arms operations providing direct support to the infantry, conducting antiarmor operations, and facilitating the seizure of territory and the annihilation of CFC forces through maneuver and pursuit.

When the NKA tanks are operating in small groups, it is normal to have one or two platoons of infantry attached to a company, or vice versa, where tanks support an infantry attack. In larger unit operations, a company of mechanized infantry is attached to tank battalions performing independent tasks; likewise, a tank company will be attached to a mechanized infantry battalion when attacking a strong defensive position. Attached companies may be employed as whole units or be divided and distributed as needed.

NKA armor and infantry forces are expected to coordinate their efforts during the attack, each using its strength to compensate for the weaknesses of the other. Tanks would propel the attack, maintaining a vigorous pace, attempting to destroy CFC vehicles and hardened positions. Armored forces would be capable of delivering firepower to a greater depth than most infantry weapons and would be expected to destroy CFC obstacles such as pillboxes, wire entanglements, and minefields (through the use of anti-mine rollers and blades), as well as providing the infantry cover as it advances behind NKA artillery shelling. The infantry would be tasked with destroying any antitank positions, reporting other targets for destruction by tanks, and providing cover for damaged tanks pending their recovery.

NKA armor units would perform the same types of offensive maneuver as the infantry and are well suited to attacking directly from the march. In the movement to contact, a tank formation would leave its assembly area with its elements deployed in such order as to allow for a quick transition to the attack formation. In the attack and penetration, NKA tank formations would be selected to allow tanks and infantry to arrive at CFC's first line of defense at the same time. Tanks would support the infantry advance by fire and destruction of antipersonnel obstacles. During exploitation operations, tanks would assist the infantry in carrying the assault into CFC's defensive positions. Here, the speed and shock value of armor would be stressed in denying CFC an opportunity to counterattack or reinforce the defense. Tanks would also assist in bypassing CFC defensive strongpoints by blinding or screening through the use of smoke. In the pursuit, the speed and maneuverability of NKA armor assets would be used to maintain pressure directly on CFC forces and to envelop for eventual annihilation.

In organizing for combat, an NKA armor brigade's assets would be assigned to the two combat echelons and reserve of the unit conducting the attack. These echelons would be reinforced according to their assigned combat tasks.

NKA armor formations would include the column, rank, wedge, inverted wedge, and echelon to the right or left.

Artillery Support to Offensive Operations

In the offense, the mission of NKA artillery would be to suppress or destroy CFC personnel and equipment which pose a threat to NKA infantry and tank units. The NKA is capable of delivering massed or dispersed fires from fixed positions over relatively long ranges with highly destructive power. The NKA considers the ability of artillery to maneuver and to fire accurately under limited visibility, weather, and terrain conditions to be very important.

Tactical employment of NKA artillery would be based on flexibility of organization, integration of the fire plan, centralized control, concentration of firepower, and mobility:

- **Flexibility of organization** would be used to concentrate firepower on the axis of the main attack by forming temporary mission-oriented artillery groups at all echelons.
- **Integration of the fire plan** would be used for the integration of the fires of field guns of various calibers with the machinegun fires of infantry companies into a single fire plan.
- **Centralized control** would give the maneuver unit commander at each echelon control over artillery assets as the NKA does not assign tactical missions to its artillery. As the attacking units advance, control of artillery would be decentralized starting at the lowest echelon. The maneuver commander would centralize the control of artillery again as needed.
- **Concentration of power** would be achieved through the use of all calibers of guns in concentrated fire to the maximum extent possible.
- **Mobility** would be used for quick dispersion or the concentration of artillery fire in support of a maneuver unit.

The combined-arms theory of the NKA is similar to that of the former Soviet Army in that artillery fire support required for regiment and division-size battles exceeds the organic fire support capabilities of regiments and divisions. Therefore, the NKA would form multi-battalion artillery groups at all echelons to support specific combat missions. The groups would be formed at army, corps, division, brigade, and regiment level and would include artillery assets organic to these echelons plus artillery attachments. At least a corps artillery group (CAG) would normally consist of two to three long-range artillery battalions that have the mission of general support to the corps, support of the division(s) conducting the main attack, counterbattery fire, and deep fire on CFC's rear area. A division artillery group (DAG) would normally be composed of at least two or three battalions equipped with guns, howitzers, mortars, and multiple rocket launchers (MRLs). A regimental artillery group (RAG) would normally be composed of two to four battalions provided by division or corps and would provide support to forward maneuver units. This organization of artillery groups allows for a concentration of firepower to support the main attack, the ability to support unanticipated requirements, or the requirements of a higher echelon.

During the attack, NKA artillery firing positions would be selected through reconnaissance of the actual location. Subsequent firing positions would be selected through visual reconnaissance (observation) and by selecting a general area on the map and moving to that area. After destroying pre-planned targets during the preparatory fire, the guns would change positions. Normally, artillery pieces would be placed at a distance of one-third of their maximum range from the line of contact with CFC forces. When needed, the firing positions would be set up in an area where artillery can conduct direct fire.

In order to assure continuous and effective command of artillery asset and fire direction, the NKA would establish and employ artillery observation posts (OPs) at each echelon. Based on their surveillance of the terrain and CFC activity, the OPs would observe and adjust artillery fire as well as provide command and fire direction.

NKA conduct of artillery fire in the offense would be broken down into three types of fire: preparatory fire, fire support of the attack, and fire support in depth during the attack.

In the offense, **preparatory fire** would be conducted to destroy CFC CPs and observation facilities, cause the collapse of defensive organization, and clear a path through obstacles for infantry, tanks, artillery, and engineers. Fire would be sustained for 10 to 20 minutes in preparation for a hasty attack, or 30 to 40 minutes for a deliberate attack. Preparatory fire would normally be divided into four phases:

1st Phase: CFC front platoon area (suppressive fire).

2nd Phase: CFC company reserve area.

3rd Phase: CFC battalion reserve area.

4th Phase: CFC front platoon area (annihilation fire).

Preparatory fire probably would not be divided into phases when visibility is poor and observation of fire is not possible or when CFC has gone into a hasty defense and has not yet constructed its defensive positions.

NKA fire support of the attack would be conducted to assist the advance of maneuver units by shifting fires at pre-planned rates (normally 2 to 3 minutes) deeper into the defense. For this purpose several basic firing phase lines would be established at 200- to 400-m intervals from the offensive start line out to 2,500 m into the CFC's defensive depth.

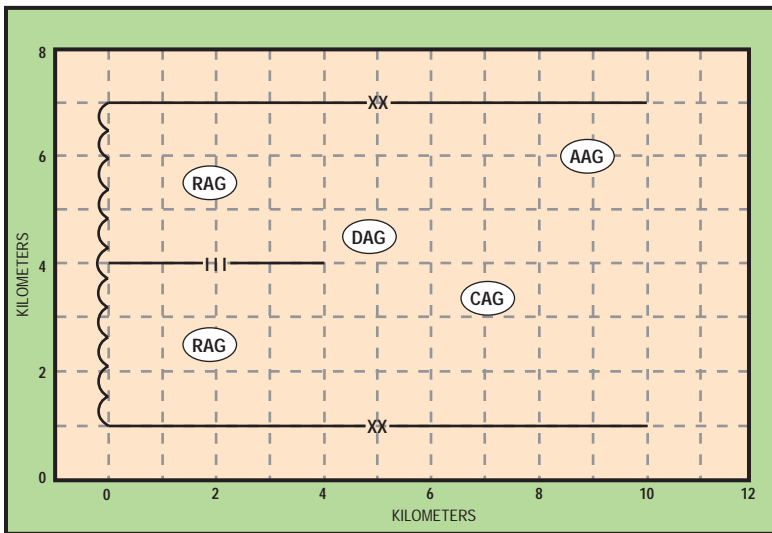
1st Basic Firing Phase Line: CFC obstacle area.

2nd Basic Firing Phase Line: CFC defensive frontline.

3rd Basic Firing Phase Line: CFC reserves.

The supporting artillery unit or artillery group would provide general support to the maneuver unit by providing rolling barrage or successive fire concentrations. Long-range artillery and the corps artillery group would conduct counterbattery fire and fire on command and communication facilities. When the maneuver unit cannot suppress CFC resistance with its own firepower, some units from the supporting artillery units would be attached to provide direct support to the attacking unit.

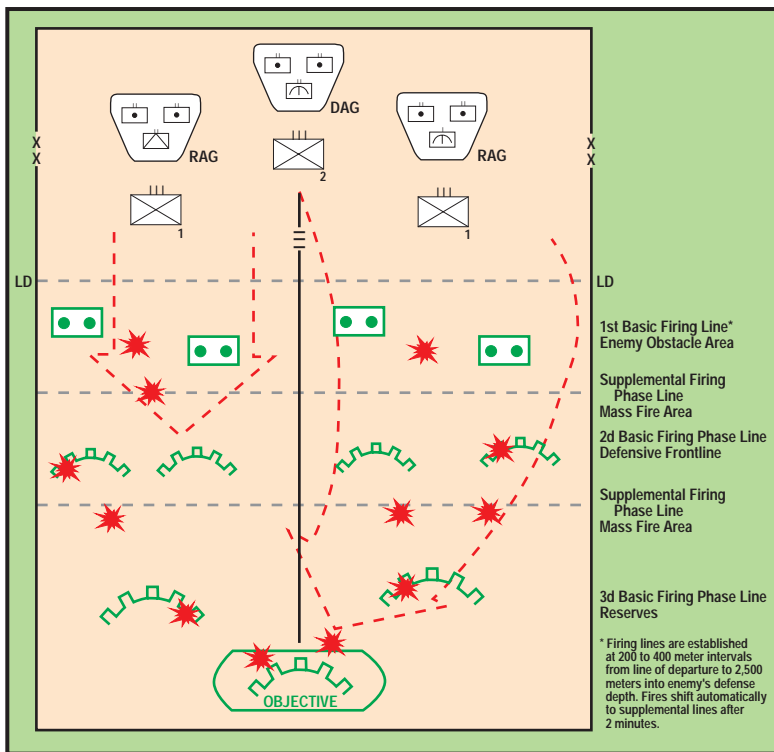
Fire support in depth during the attack would provide fire for exploitation units penetrating into the depth of the CFC defense. The artillery which is in direct support of the penetrating force would have the mission to continue suppressing CFC resistance and blocking counterattacks or withdrawals. Accompanying artillery gives priority to destroying individual enemy weapon positions and conducting suppressive fire. Missions for long-range artillery are to conduct counterbattery



Artillery Groups — Offense

fire, suppress and destroy strongholds within the depth of the defensive area, prevent maneuvering of enemy reserves, and to disrupt command and control nodes.

Another mission of NKA artillery is that of antitank. The NKA uses artillery in an antitank role by direct fire (bore sighting). Following Russian tactics, the NKA forward deploys medium caliber guns within 2,000 m of the forward line of own troops (FLOT).



Fire Support During the Attack

Air Defense Support to Offensive Operations

NKA air defense in support of offensive operations would be performed primarily by AAA units. Besides combating aircraft, AAA units, when needed, will reinforce ground firepower against ground targets. The larger AAA weapons have limited antiarmor capability.

The tactical mission of the NKA's AAA would be to cover the maneuver unit in support of the attack. The AAA unit also defends important positions and critical target areas.

In the forward area, the AAA would be deployed to cover troop concentration areas, forward CPs, artillery firing positions, forward LOCs, and other important facilities. In the rear area, it would be employed to cover maneuver units, troop concentrations, field gun areas, missile sites, munition facilities, and LOCs.

Besides a large inventory of AAA, the NKA also has a large number of man-portable surface-to-air missiles (SAMs) to include SA-7, SA-14, and SA-16.

Engineer Support to Offensive Operations

Engineers are expected to expedite NKA offensive operations by assisting in increasing the mobility of attacking forces and performing countermobility operations against CFC. Other tasks would include providing camouflage, cover, and concealment support, and acting as infantry when needed.

Specific tasks of an NKA division's engineer battalion would include reconnaissance, route support, river crossing, obstacle clearance, obstacle laying, illumination, water supply, and fortification. Higher echelon assets, such as the corps' river-crossing regiment and technical engineer and construction battalions, would provide the division river crossing and obstacle breaching support.

At the regimental level, the engineer company would assist offensive operations by performing reconnaissance, route support in the rear area, limited river crossing support, obstacle clearance, and fortification. The regimental engineer company would normally attach platoon-size elements to infantry battalions and squad-size elements to infantry companies. Higher echelons would assist the regiment with engineer support for such tasks as obstacle breaching and river crossing.

In organizing for combat, engineer battalions and companies would provide sapper elements to carry out tasks separately or as part of a combined-arms team. A reconnaissance team would conduct engineer reconnaissance. An advance guard engineer team would construct routes. A clearance team would precede the infantry, clearing obstacles and constructing routes of advance to include detours for the main body. A raiding team, composed of engineers and SOF units, would attack special targets and reinforced CFC positions. A mobile obstacle team would emplace obstacles to protect the flanks of attacking NKA units and an engineer element in the antitank team would set up camouflage and field fortifications.

Reconnaissance and Surveillance Support to Offensive Operations

In NKA offensive operations, the infantry division would have the primary responsibility for reconnaissance and surveillance. This includes all aspects of the area of operations, to include weather and terrain, and CFC capabilities. However, every echelon of each of the armed services is expected to conduct military reconnaissance and surveillance in support of NKA offensive operations.

By echelon, regimental reconnaissance and surveillance would extend into the rear of a CFC regiment and that of a front line division. Division would be expected to cover a CFC division's rear area and that of a front line corps. Corps would be tasked to cover the rear area of a CFC corps as well as the rear area of the next higher CFC echelon. Reconnaissance

assets at the service and national level are expected to cover the entire rear area of CFC.

NKAF aerial reconnaissance is expected to acquire information on the nature of CFC locations, groupings, and activities along a broad front in a relatively short period of time. Surveillance, photography, and radar detection would be performed by reconnaissance aviation, bombers, and pursuit aviation in support of combined-arms operations.

NKN reconnaissance would be conducted by naval platforms, technical surveillance sentries, naval reconnaissance aviation forces, coastal defense forces, and coastal artillery forces to quickly identify an area threatened by CFC amphibious forces.

The mission of ground reconnaissance would be to acquire detailed information concerning CFC combat forces, terrain, and weather, by using the special skills and assets of army technical personnel. This information along with that collected by air and naval reconnaissance would be combined in an attempt to verify CFC disposition, strengths, and weaknesses.

Amphibious Support to Offensive Operations

Though North Korea does not have the capability to conduct large amphibious operations, it can insert small units of landing parties from the sea to accomplish the following:

- Support the advance of NKA ground offensive operations.
- Conduct amphibious raids to occupy/destroy critical targets in CFC's rear area.
- Surprise and harass CFC's rear area.

Forces that would conduct amphibious operations against CFC would come from the two amphibious landing brigades and naval forces. Specific missions would include the following:

- Encircling and destroying CFC defensive positions.

- Delaying reinforcement of CFC defensive frontlines Occupying or otherwise paralyzing CFC air bases/operations.
- Occupying/attacking island groups, harbors, naval bases, and areas in which future operations are anticipated.
- Destroying CFC command and control centers/systems and other critical targets in CFC's rear area.
- Occupying/destroying bridges, river crossing sites, or other targets to reduce CFC maneuverability.
- Conducting missions to harass or otherwise create confusion in CFC's rear.

NKA Tactics in the Defense

The defense would be used by NKA in an attempt to gain time, prevent troop losses, or cover a unit short of personnel. A defensive area would be selected because it gives mutual support and provides all-around defense. NKA doctrine calls for three types of defensive operations: position defense, mobile defense, and retrograde operations.

The **position defense** would be used to hold or destroy CFC's attack or to hold key terrain or a key area. A **mobile defense** would be used to gain time, exact losses on CFC forces, and preserve combat strength while losing ground. NKA **retrograde (or disengagement) operations** would be used to gain time to plan for the next operation or to restore combat capability. In all three types of NKA defensive operations, the organization and composition would be similar, but the conduct would be different.

NKA defensive plans will vary depending on the type of defense required and the status of contact with CFC forces. The integration of mechanized, artillery, armor, AAA, and antitank fire support (both organic and adjacent unit's), and the use of engineers, camouflage, and deception will all be vital elements of a NKA defensive operation. However, NKA planning and execution of antitank defense may well be the number one priority when preparing for a CFC attack.

Generally, when in the defense, the NKA will organize and manage the conduct of the defense into four defensive echelons/zones, and areas: the security echelon, the main defensive echelon (or main defense line), the rear area defense echelon, and the antitank support area. Distances, frontages, and depths are situational dependent. They will be adjusted by NKA defenders in accordance with time to prepare the defense, terrain, and combat strength of both NKA defenders and CFC forces expected to attack.

The **security echelon** will consist of three zones: the general outpost, the combat outpost, and local security. Each will be organized for the purpose of holding and frustrating attacking CFC forces while gaining time. The security echelon will be reinforced by engineer, artillery, and armor units. The main purposes of the security echelon will be to:

- cause early deployment of CFC forces into attack formations,
- prevent CFC surprise attacks,
- hamper CFC forces from conducting reconnaissance and artillery observation,
- mislead CFC forces in finding the actual location of the main defensive echelon, and
- provide concealed lookouts during the withdrawal of NKA forces.

The **general outpost** will be established approximately 10 to 15 km forward of the defensive front line and would be manned by a reinforced battalion. It would be established by a division or army group and would not have to be deployed if there is not enough time. Its mission will be to impede the CFC advance and to cause early deployment.

The **combat outpost** will consist of a reinforced platoon and would be established approximately 1 to 2 km forward of the defensive front line. The division would establish it and the regiment would be responsible for this outpost. Its mission will be to prevent CFC surprise attacks, confuse CFC reconnaissance, and deceive CFC as to the location of the main defense echelon.

Local security will consist of a small number of NKA troops and would be established approximately 200 to 400 m forward of the defensive front line under authority of the forward company commander.

The main defensive echelon would contain most of the defense's fire-power. NKA units with the strongest firepower and most of the antitank weapons would be assigned missions within this echelon. The main defensive echelon is organized into two smaller echelons and a defensive perimeter would be established to check CFC attacks from any direction.

The **first echelon** of the main defensive echelon would be responsible for determining whether CFC is moving to conduct a deliberate attack and, if so, where. If CFC forces are moving to attack, a combat security detachment or a smaller unit would be dispatched to conduct reconnaissance in force or limited spoiling attacks, respectively. Tanks dug in at the front line will engage at 1,000 m. If CFC forces reach the front line and threaten penetration, defending forces will strengthen their flanks and engage with all available fire support. As CFC enters the defensive area, tanks and antitank teams will attempt to ambush and destroy the attackers' mobility and inflict heavy combat losses. If CFC reaches this point, the NKA defenders would probably commit their reserves.

The **second echelon** of the main defensive echelon would be responsible for holding one or two blocking positions or to counterattack to regain the initiative and drive out penetrating CFC forces. If CFC attempts a flanking movement, a company from the second echelon will take defensive positions on that flank.

The **rear area defense echelon** would usually be 8 to 12 km deep. Positions will have been prepared in advance. This echelon would be used to prevent an advance following the penetration of the main defense echelon, to slow a CFC advance, to provide logistical support during the defense, or to execute a counterattack. Underground positions, artillery, and rear area service support will be located in this area. Mobile units that could conduct counterattacks or serve as reinforcements will be

deployed here. NKA reserves will be deployed in such a manner that allows counterattack in any direction.

The NKA considers antitank defense as one of the most vital components of the defense and will establish the **antitank support area** (ATSA). NKA doctrine calls for the employment of from two to five antitank guns within every 100 m of the defensive front.

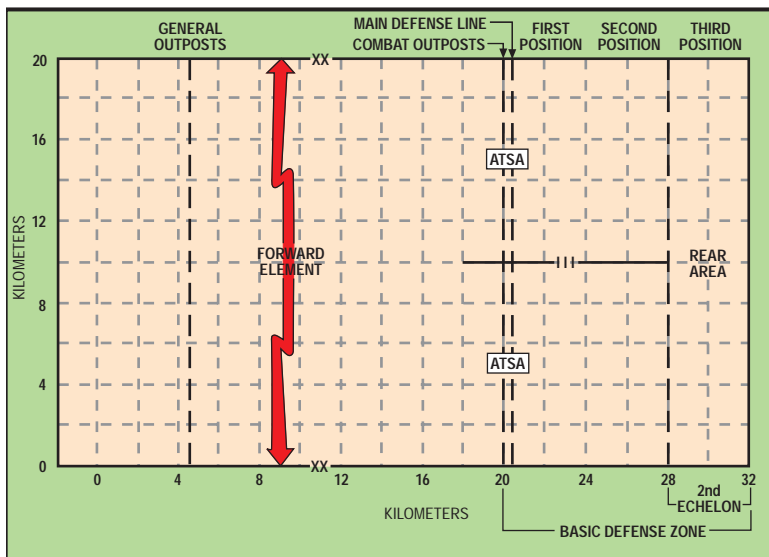
The maneuver unit would establish the ATSA and locate it where it would be inaccessible to tanks or IFVs. NKA forces assigned to the ATSA would be tasked to establish several indirect fire rolling barrier fire lines and direct fire antitank security lines along potential CFC tank approach routes. Antitank security lines would be established in the forward security zone, near the defensive front line, and in the depth of the main defensive zone. Rolling barrier fire lines would be established parallel to the main defensive line, starting 300 to 400 m forward of the defensive front line. From this point outward, additional lines would be established at intervals of 300 to 500 m. Each fire sector should be observable from a ground OP and located at a point that CFC tanks cannot bypass.

In antitank defense, NKA artillery units will attempt to deliver battalion-size salvos of antitank support fire before CFC tanks can advance to within the effective ranges of antitank weapons. At the request of the OP, several battalions may concentrate fire on key areas, firing at maximum rate. If CFC penetrates the fire areas and the tank advance continues, the artillery units would shift fire to subsequent fire areas. During rolling barrier fires, whenever CFC tanks advance within 1,000 m of antitank gun positions, antitank guns would engage with direct fire.

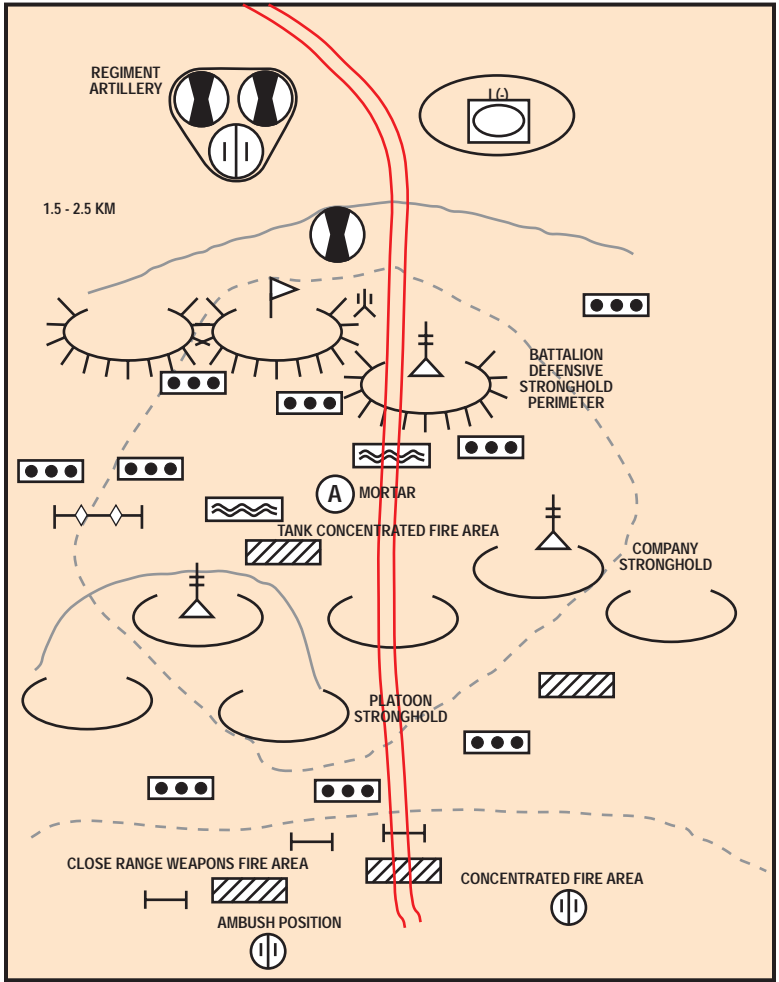
Individual antitank guns will also conduct ambush fires from positions along high speed avenues of approach. In addition, antitank obstacles will be positioned so that they can receive protecting fire from antitank weapons. The NKA will also make use of both manmade and natural obstacles.

Defensive Frontages and Depths

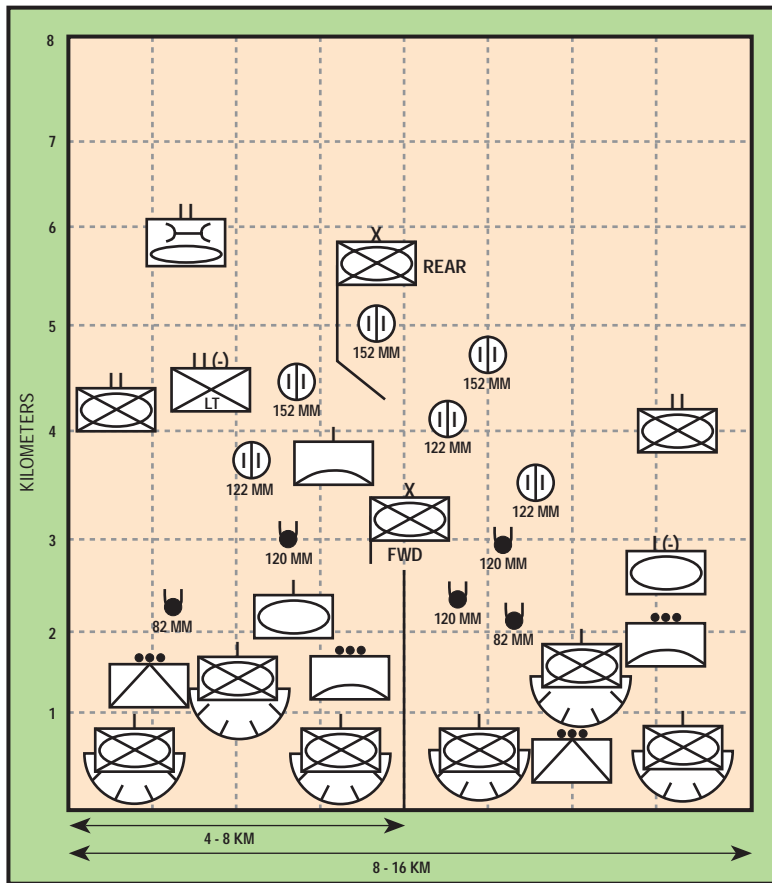
Unit	Frontage	Depth (km)
Company	1.5-2.5	1-1.5
Battalion	3-5	< 3
Regiment	6-10	8-12
Division	12-20	16-22



Division Defense Zone



NKA Battalion Defense Plan



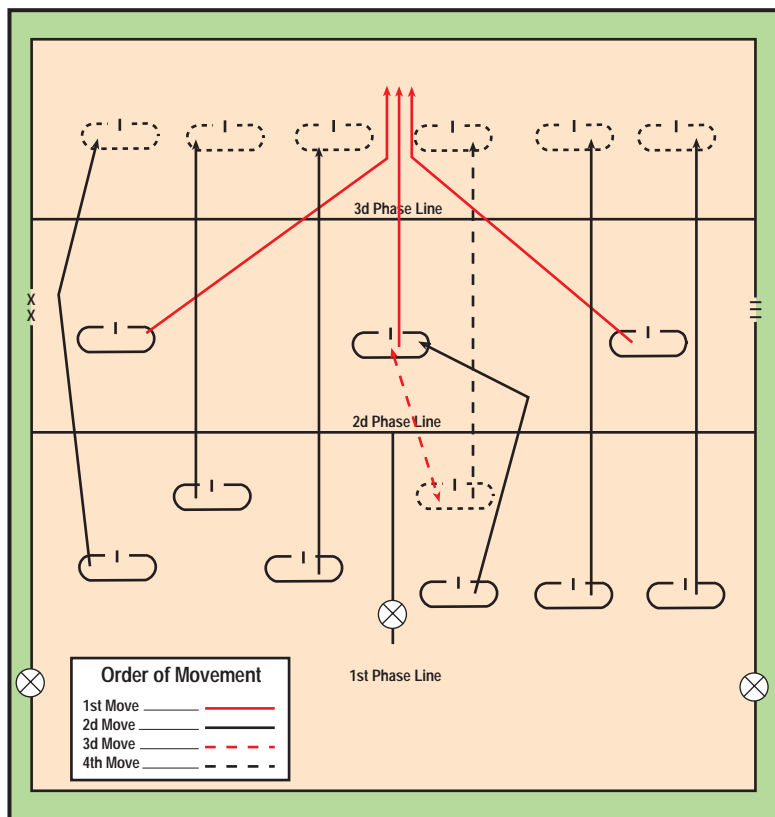
NKA Mechanized Brigade in the Defense

Positional Defense

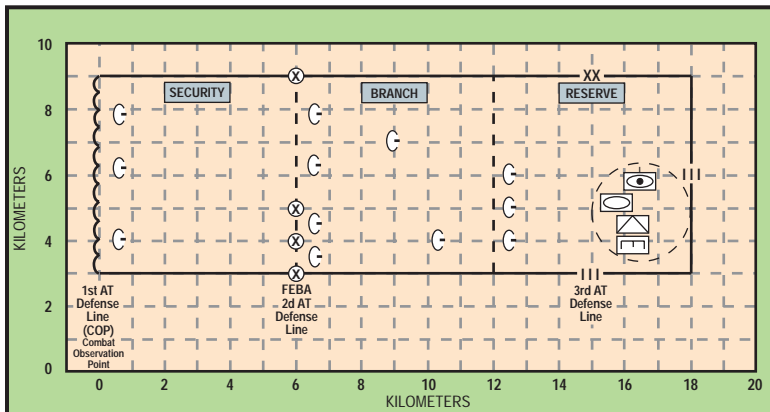
Positional defense (sometimes called area defense) will be conducted when the NKA decides to hold key terrain or a key area, or to impede or destroy a CFC attack. It will be centered on the expected main axis of a CFC attack and the main defensive echelon will be selected to provide all around fields of fire and mutual support.

Mobile Defense

The mobile defense (sometimes called moving defense) will be used when an inferior NKA force decides to trade space for time while inflicting casualties on a superior CFC force. It is characterized by counterattacks and withdrawals. Predetermined phase lines will be used to control NKA units as they fall back to subsequent positions. Within the defense, each battalion will occupy two sets of positions at the same time. Main combat troops and weapons will be concentrated in the first position while reserves maintain the second position. Antitank ambush teams will be emplaced between these positions.



Mobile Defense of the Regiment



Regimental Positional Defense

Retrograde Operations

The NKA defensive doctrine plans for three types of retrograde operations: withdrawal, disengagement, and retreat. The NKA would use a disengagement (a form of withdrawal) to physically break contact from CFC observation or direct fire.

An NKA **withdrawal** would be conducted by NKA units to avoid a superior CFC force in the attack, lure CFC forces into terrain unfavorable to offensive operations, and change the battlefield. When possible, the withdrawal will take place by echelon. The rear service units would withdraw first, while artillery and second echelon forces occupy security positions. First echelon forces would then withdraw under the cover of the security positions.

An NKA division-size withdrawal would be characterized as follows:

- Second echelon provides security for all rear defense lines occupying positions in advance.

- Regiment's second echelon occupies preselected phaselines covering regiment's first echelon disengagement.
- Frontline battalions withdraw under the covering fire of platoon size units reinforced with the second echelon battalion's antitank weapons and machine guns.
- Companies withdraw using fighting positions and connecting trenches or bounding overwatch movement.
- Attached tanks withdraw in bounding overwatch movement while covering infantry withdrawal.
- Bridges and roads are destroyed and obstacles emplaced to restrain CFC advance.
- During withdrawal, division command post is located in the covering sector.

An NKA **retreat** would be conducted to avoid battle with CFC forces. It would normally follow a combat disengagement. Once contact with CFC has ended, the NKA would form a march column for moving to the rear; at that point, a retreat would begin. The purposes of an NKA retreat are to —

- maintain distance from CFC forces,
- occupy an advantageous position,
- replace other units and align combat lines,
- transfer the force to another area for other operations, and
- reduce distance from rear areas.

After passing through a designated line in combat disengagement, the NKA unit conducting the retreat would move to a preplanned area or defense line, under cover provided by a rear guard. When a retreat is conducted while marching under contact with CFC, a powerful security force would be deployed to secure the flanks and rear. An NKA retreat would terminate with the occupation of an assembly area, for achievement of follow-on duties, or occupation of a defensive line.

Escape From Encirclement (Breakout)

NKA units conducting a breakout would execute it in the following order: penetration unit, cover echelon, and reserves. The **penetration unit** would be formed mainly of artillery, tank, and mortar units. Normally it would comprise one-half or two-thirds of the entire combat power and would be composed of two echelons. The **cover echelon** would be formed by artillery, mortar, tank, engineer, and chemical warfare units. It would be tasked to prevent a CFC counterattack and to hold the area where the breakout will take place. The **reserves** would be deployed to an area between the penetration and cover echelons in order to provide fire support to both.

Night Defense

NKA defense at night will be a continuation of daytime defensive operations. Only fire support plans and barrier fires will be modified. Plans will be adjusted to include proactive reconnaissance, fire plans, and use of illumination. Reserve forces will normally be moved closer to the main defense line. The fire plan will be reinforced, security strengthened, and additional obstacles added to the defense.

When a CFC night attack is not expected, about one-half of NKA troops will remain on alert. All others will rest. Ambush teams and combat outposts will immediately report any contact with CFC forces and then withdraw. Concentrated fires will be brought upon approaching CFC forces. Direct small-arms fire and hand-to-hand combat commences with any CFC breach of forward NKA strongpoints.

Armor Support to Defensive Operations

NKA tanks will participate in the defense either statically by stubbornly holding prepared positions, or by maneuvering in counterattacks, usually against a CFC flank. In the positional defense, tanks will be supported by mechanized, artillery, and engineer elements. Tank positions will be dug in and located on favorable terrain and will have the mis-

sions of repelling CFC attacks and thwarting infiltration as well as conducting counterattacks. Small units of tanks may be attached to NKA infantry and conduct screening or reconnaissance. Tanks could be used at the front line to counter CFC tank attacks, but most likely will be held in the second echelon or in the reserves.

Artillery Support to Defensive Operations

The NKA would use fire support weapons in the defense to deter or stall a CFC attack and to engage and destroy CFC attacking forces in their preparatory stage. Defensive fires would be accomplished according to the sequence of defensive fire support stages and would be delivered within prescribed fire zones.

NKA artillery groups (see section on fire support to offensive operations for a discussion on artillery groups) and units will develop their fire support plans based upon the fire support plans at corps or division level as well as guidance issued by the supported maneuver unit. The maneuver unit will designate areas for barrage fires and barrier fire lines as well as develop a fire plan for exposed flanks and counterattack. Fire support in the defense will include the following zones: long-range fire, close defensive fire, and a main defense support fire.

In the **long-range fire zone**, corps and division artillery groups will conduct harassing and interdiction fires before CFC forces enter attack formations. These fires will be meant to destroy the momentum of the CFC attack, disrupt the employment of CFC troop concentrations, and cover the withdrawal of NKA security units.

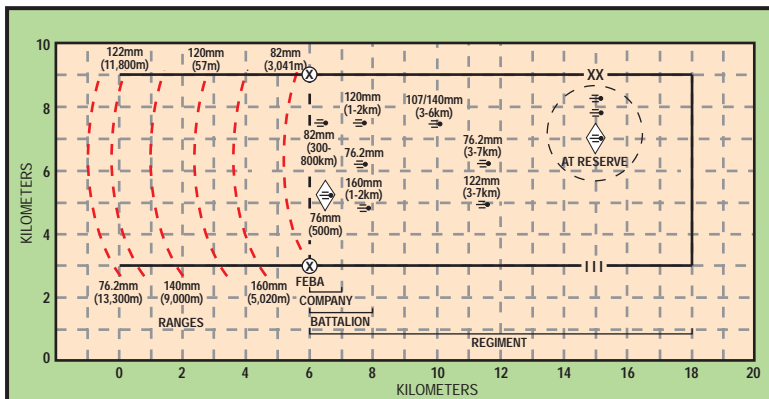
Fires in the **close defense zone** include fires prior to the attack, fires during the attack, and final protective fires. Fires prior to the attack are intended to disrupt CFC's attack preparations by breaking up attack formations and destroying command posts, observation posts, and communications facilities. Fires during the attack are intended to destroy CFC tanks and other armored vehicles as well as suppress CFC artillery.

Final protective fires will consist of fire, at a maximum rate, at the defensive front line for annihilation of CFC forces and at concentrated barrier positions.

Fires in support of the division's main defense zone will be used to support a counterattack or to cover a withdrawal of main defense forces. They will also be used to support deeper defensive positions by suppressing CFC forces that have penetrated the main defenses, and by providing covering fires during the displacement of artillery supporting the main defensive zone.

All fires in support of the defense will be divided into five phases:

- Long-range fire
- Counterbattery fire
- Frontline area final protective fire
- Fire on CFC forces penetrating forward positions
- Counterattack support fire



Supporting Fire in Regimental Defense

Engineer Support to Defensive Operations

In rear areas of the defense, engineers will either rig for demolition or demolish probable avenues of approach. Also, engineers would emplace obstacles and prepare potential NKA withdrawal routes. In the main defense zone, engineers would emplace obstacles and provide support for the construction of defensive positions and command posts as well as clear routes for the counterattack, construct artillery and tank positions, and camouflage equipment and positions. Engineers in the main defense zone will operate the water supply point, function as an element of the antitank reserve, and repair and maintain the main supply route.

During retreats, engineers will normally be attached to security units. They will select, maintain, and repair withdrawal routes and emplace obstacles to protect exposed flanks. After the rear guard withdrawals, engineers will emplace various types of obstacles across potential CFC approach routes.

Air Defense Support to Defensive Operations

In the defense, the NKA will give priority to the protection of critical facilities from CFC air assets in the main and rear defensive zones. The missions of air defense units in the defense are —

- detection of CFC air activity,
- interdiction of CFC aerial attack of forward and rear areas,
- utilization of electronic countermeasures (ECM) against CFC aircraft and air-related communication and radar systems,
- air defense in depth,
- prevention of CFC aerial reconnaissance,
- air defense protection to NKA artillery and armor units, and
- air defense against CFC airborne operations.

The NKA will plan to use air observation posts within 10 to 15 km of the defensive front lines. Firing positions will be selected to provide maximum protection of critical fire support assets (concentrations of

artillery and tanks) and command and communications sites. Special attention will be given to anticipated CFC aerial avenues of approach.

Antiaircraft guns will be deployed down to the platoon level. Man-portable SAMs such as the SA-7 and SA-16 will be deployed down to the company level. Though part of the NKA strategic air defense system, larger SAM systems such as the SA-2 can range into South Korea. As part of NKA deception operations, dummy SAM sites for larger systems will be employed to deceive CFC as to the actual location.

North Korean Antilanding Operations

Considering the devastating effect that amphibious operations had against North Korean offensive operations during the Korean War, the emphasis by North Korean military planners on lessons learned from that war, and CFC's capability to conduct operations from the sea, it can be assumed that North Korea has made extensive preparations to oppose a CFC amphibious task force (ATF) composed of U.S./ROK Navy and Marine amphibious forces.

To date, North Korea is limited in its capability to project military power beyond the Korean Peninsula and, as such, is limited in conducting significant conventional military operations against a CFC ATF in the early phases of the preparation, embarkation, rehearsal, movement, and assault (PERMA) cycle of amphibious operations. During the preparation, embarkation, and rehearsal stages, North Korea will attempt to collect information and intelligence against CFC's amphibious forces. However, other considerations, such as North Korea's emphasis on its SOF, the ranges of NKN submarines and some NKAF aircraft, and the development of long range missiles, cannot be discounted.

During the assault phase, North Korea antilanding operations will consist of the following:

- NKN and NKAF reconnaissance assets will attempt to locate the ATF in order to engage with attack aircraft and/or naval antiship missile platforms and to identify the probable location of the beachhead.

- Employment of land-based antiship missiles.
- Extensive use of naval mining.
- Utilization of water obstacles.
- Employment of coastal artillery.
- Employment of land obstacles and mines.
- The reinforcement of NKA ground antilanding forces with any available infantry, mechanized, artillery, antiair, or armor assets.

Special Operations Force

North Korea's SOF is organized into 22 brigades and 7 independent battalions. The SOF has five basic missions: conducting reconnaissance, performing combat operations in concert with conventional operations, establishing a second front in the enemy's rear area, countering the CFC special operations in North Korean rear areas, and maintaining internal security.

The MPAF has two primary commands that control special operations units, the Reconnaissance Bureau and the Light Infantry Training Guidance Bureau. North Korea classifies its special operations units as reconnaissance, light infantry, or sniper.

NOTE: Though light infantry units will perform SOF missions, all NKA divisions and brigades will have a light infantry element which will be forward deployed to conduct conventional infantry tactics in the offense. Light infantry SOF missions will include combat operations conducted by company or battalion size units against military, political, or economic targets. Sniper operations basically are the same as light infantry SOF except they are conducted in team-size units.

North Korea's SOF will perform operations at the strategic, operational, and tactical levels. Basically, strategic operations will support national or MPAF objectives, operational operations will support corps objectives, and tactical operations will support maneuver divisions and brigades.

SOF strategic missions will include reconnaissance, sniper, and agent operations. Strategic reconnaissance will be intended to ascertain CFC intentions, develop targeting information, conduct poststrike assessments of CFC units and facilities, and assess the potential reactions of the South Korean civilian and military populace. Sniper missions will include attacking critical nodes, such as special weapon delivery systems and storage facilities, command, control, and communications facilities of combined field command and higher, and air and air defense facilities. In addition, snipers will attempt to assassinate, kidnap, and/or interrogate key personnel to hinder allied operations and lower morale.

SOF operational missions will include reconnaissance, sniper, and light infantry operations. Operational reconnaissance will be conducted to ascertain CFC intentions, develop targeting information for SSMs and long-range artillery, conduct poststrike assessments, and determine the status of LOCs, chokepoints, and CFC reserve locations. At the operational level, sniper missions will be similar to those at the strategic level but will also include attacking port facilities and major LOCs. Light infantry units will concentrate on attacking division and higher command posts, capturing key terrain to assist maneuvering units, and locating CFC reserve forces.

The tactical mission of the SOF will be to support maneuver divisions and brigades objectives with light infantry operations. The organic reconnaissance element of the maneuver unit will perform tactical reconnaissance. Both the light infantry and reconnaissance elements will develop targets for destruction. These targets will include CFC command, control, and communications facilities, air and air defense sites, CFC force concentrations, and LOCs. Light infantry units will concentrate on attacking brigade and division command posts, capturing key terrain, and locating and destroying CFC reserve forces.

Personnel selection for SOF units come from politically reliable troops who are members in good standing of the Korean Workers Party and who have served 4 to 7 years in the combat branches. Only under special

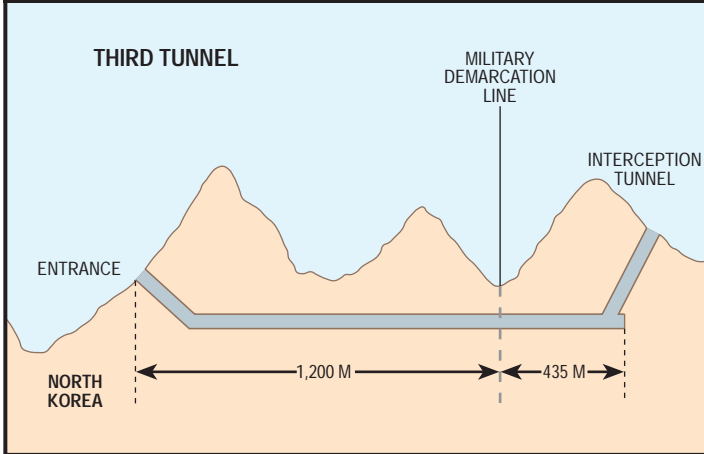
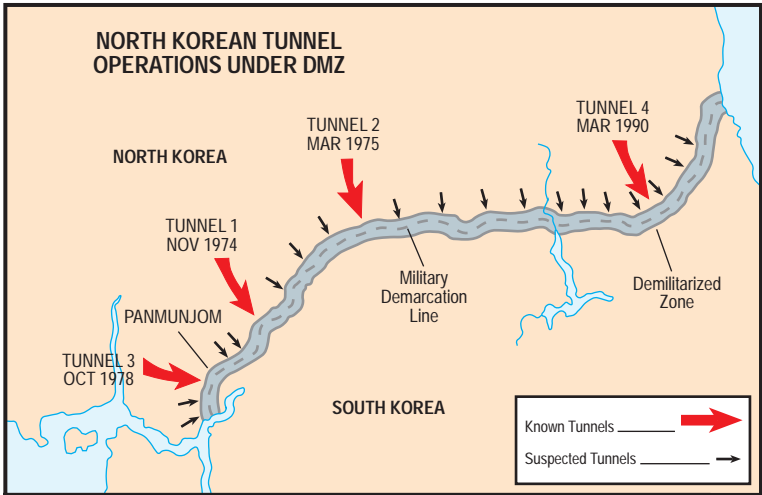
circumstances (language capabilities and technical skills) will they be recruited and trained directly from civilian status.

The training of SOF personnel is believed to take 12 to 24 weeks or longer, depending on the skill levels. The skill and training that SOF personnel receive, such as infiltration, mountaineering, night operations, swimming, martial arts, airborne, intelligence collection, demolition, and rigorous physical fitness, are typical of elite units throughout the world. Discipline is strong and harsh, with an emphasis placed on intensive physical training and political indoctrination. When training is completed, the trainee is awarded a senior NCO or junior officer rank and assigned to an operational unit for the remainder of his career.

During combat operations it can be expected that many deep-strike SOF personnel will be attired in civilian clothing or South Korean military uniforms. Infiltrations will normally occur at night or during periods of limited visibility, with the assistance of escorts who are familiar with the area.

The equipment carried by most SOF personnel will vary considerably, depending on the mission. Typical equipment will include a dagger and/or bayonet, pistols (to include silenced versions), rifles (AK-47 or M-16), submachine guns, hand grenades/demolitions, rocket launchers (RPG-7 or AT-3), 60-mm mortars, or other allied weapons.

North Korean SOF infiltration methods into CFC rear areas will include: overland, through tunnels under the DMZ, air, and from the sea. The NKAFF will support SOF operations with airborne infiltration and resupply missions. The primary aerial insertion aircraft will be the An-2/ COLT and helicopters. The NKN will support SOF operations by using amphibious operations, covert sea infiltration, and resupply. The principal vessels that will be used to support these operations will be the KONG BANG I/II/III, NAMPO A/B LCPA (air-cushioned), and NAMPO LCPs. In addition, mini-submarine and semi-submersible insertion craft may also be used to support SOF operations from the sea.



Tunnel Operations Under DMZ

All but the last few meters would be completed before an attack. Although 4 have been discovered, as many as 20 or more may exist.



Tunnel Constructed by the North Under DMZ



















A regiment could pass through this tunnel in about an hour and come up south of the DMZ.

SECTION 3
















RANK INSIGNIA AND UNIFORMS

N A V Y												
	A R M Y & F O R C E											
		SO-WI	CHUNG-WI	TAB-WI	SO-RYONG	CHUNG-YONG	TAB-RYONG	CHUN-JANG	SO-JANG	CHUNG-JANG	TAB-JANG	
		US EQUIVALENT										
		O-1 2nd Lieutenant	O-2 1st Lieutenant	O-3 Captain	O-4 Major	O-5 Lieutenant Colonel	O-6 Colonel	O-7 Brigadier General	O-8 Major General	O-9 Lieutenant General	O-10 General	
		ENLISTED RANK STRUCTURE										
		SB-YONG	ILB-YONG	SAMBYONG	LYONGJANG	BASA	CHUNGSA	SANGSA	CHUM SANGSA			
		Private First Class	Lance Corporal	Corporal	Sergeant	Staff Sergeant	Gunnery Sergeant	Master Sergeant	Master Sergeant			

ROK Enlisted Rank Insignia

<p>ARMY</p>  <p>Master Sergeant</p>	<p>NAVY</p>  <p>Chief Petty Officer</p>	<p>AIR FORCE</p>  <p>Master Sergeant</p>
 <p>Senior Sergeant</p>	 <p>First Class Petty Officer</p>	 <p>Senior Sergeant</p>
 <p>Sergeant</p>	 <p>Second Class Petty Officer</p>	 <p>Sergeant</p>
 <p>Corporal</p>	 <p>Third Class Petty Officer</p>	 <p>Junior Sergeant</p>
 <p>Private First Class</p>	 <p>Seaman</p>	 <p>Senior Private</p>
 <p>Private</p>	 <p>Seaman Apprentice</p>	 <p>Private</p>

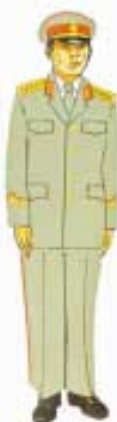
North Korean Enlisted Rank Insignia

North Korean Army Rank Insignia						
	Marshal	General	Colonel General	Lieutenant General	Major General	Senior Colonel
						
Colonel	Lieutenant Colonel	Major	Captain	Senior Lieutenant	Lieutenant	Junior Lieutenant
Officer Collar Tabs Worn on Closed Collar Uniform						
						
Army Colonel		Navy Commander		Air Force Lieutenant		

North Korean Army Officer Rank Insignia



Winter Full Dress Uniform (Generals)



Summer Full Dress Uniform (Generals)



Winter Service Overcoat (Generals)



Service Uniform (Officers)



Service Overcoat (Officers)



Field Uniform (Officers)



Full Dress Uniform (Officers)



Dress Overcoat (Officers)



Service Uniform (Officers)



Winter Jacket (Officers)

North Korean Army Uniforms



North Korean Army Uniforms

North Korean Navy Rank Insignia						
		Senior Admiral	Admiral	Vice Admiral	Rear Admiral	Senior Captain
Captain	Commander	Lieutenant Commander	Senior Lieutenant	Lieutenant	Junior Lieutenant	Ensign
Enlisted Collar Tabs Collar Tab Denotes Branch of Service						
Master Sergeant	1st Class Petty Officer	Sergeant	Junior Sergeant	Seaman	Private	

North Korean Navy Officer Rank Insignia



Winter Full Dress Uniform (Officers)



Winter Full Dress Uniform (Officers)



Winter Service Uniform (Officers)



Summer Service Uniform (Officers)



Work Uniform (Officers)



Winter Service Uniform (Enlisted)



Winter Service Uniform (Seaman)



Summer Service Uniform (Seaman)

















Summer Service Uniform (Enlisted)



Work Uniform (Enlisted)

North Korean Navy Uniforms

		North Korean Air Force Rank Insignia				
						
		General	Colonel General	Lieutenant General	Major General	Senior Colonel
						
Colonel	Lieutenant Colonel	Major	Captain	Senior Lieutenant	Lieutenant	Junior Lieutenant
						
General Officer Collar Tabs		Field and Company Grade Officer Collar Tabs				

North Korean Air Force Officer Rank Insignia



Full Dress Uniform (Officers)



Service Uniform (Officers)



Service Uniform (Enlisted)



Service Uniform (Pilot)



Summer Field Uniform (Enlisted)



Winter Jacket (Enlisted)



Pilot Uniform



Officers Cap



Officers Cap



Service Cap (Enlisted)































North Korean Air Force Uniforms

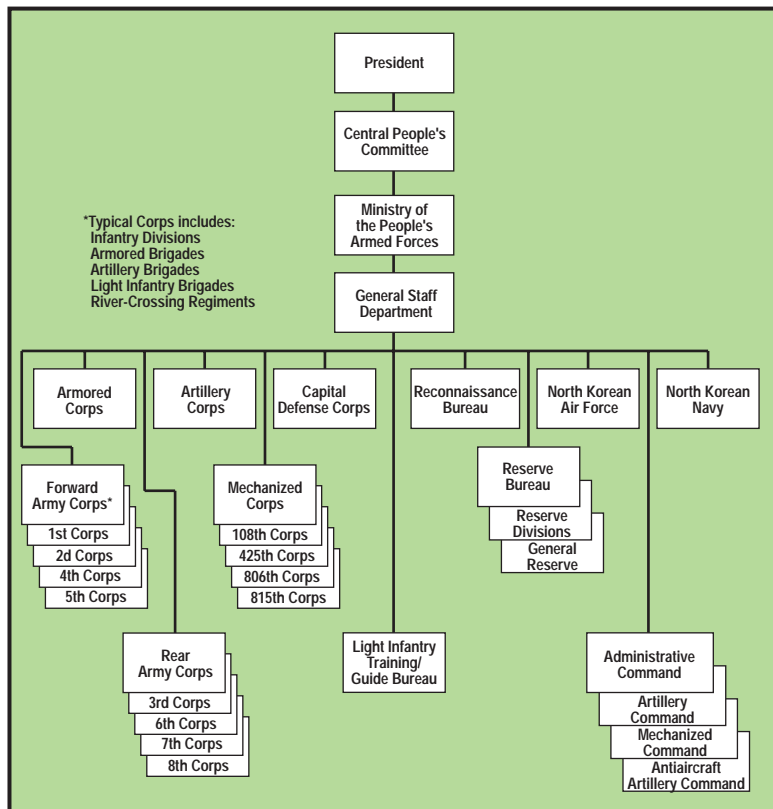


North Korean Branch Insignias

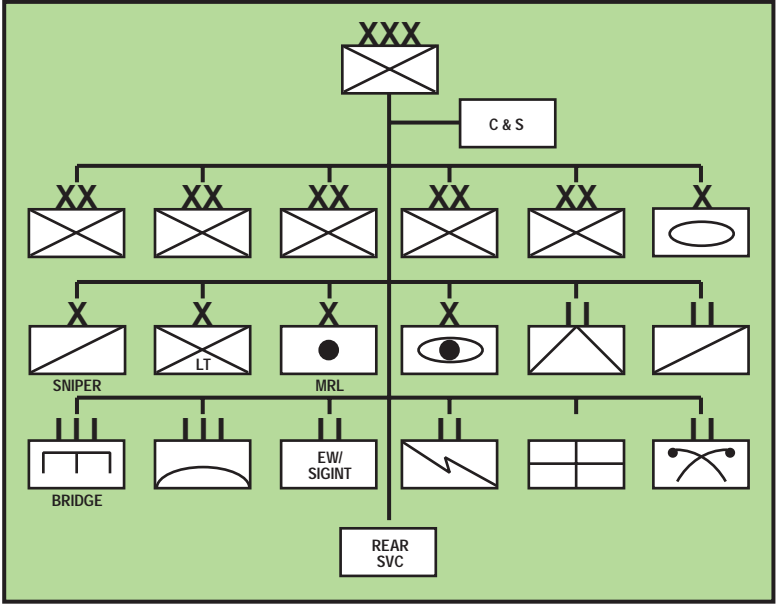
SECTION 4

ORGANIZATIONAL CHARTS

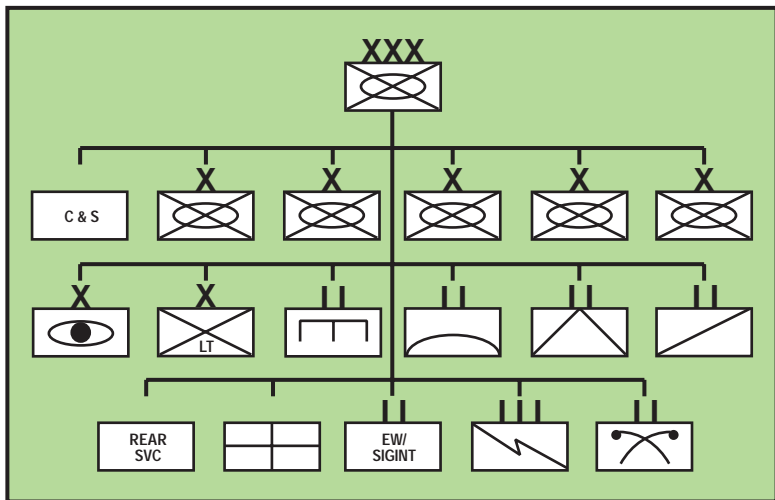
XXXX Army XXX Corp XX Division X Brigade III Regiment II Battalion I Company ••• Platoon •• Squad						
	INFANTRY	MOTORIZED INFANTRY	LIGHT INFANTRY	AIRBORNE INFANTRY		
						
	MECHANIZED INFANTRY	RECON	ARMORED RECON	TANK/ ARMOR		
						
	AT-3 ANTITANK MISSILE (AT-3)	85/100 ANTITANK GUN (85-100mm)	SA-2 ANTI-A/C MISSILE (SA-2)	14.5 ANTI-A/C GUN (14.5mm)		
						
	FROG MISSILE	SCUD MISSILE	MORTAR (120mm)	ARTILLERY (130/152mm)	SP ARTILLERY (122mm)	MULTIPLE ROCKET LAUNCHER (122mm)
						
	AVIATION OR HELO	ATTACK HELO	ENGINEER	CHEMICAL OR DECON	SIGNAL	FIELD HOSPITAL
						
HQ HEADQUARTERS	HHC HEADQUARTERS & HQ COMPANY	HMG HEAVY MACHINE GUN	REAR SER REAR SERVICES	TECH SPT TECHNICAL SUPPORT	TGT ACQ TARGET ACQUISITION	



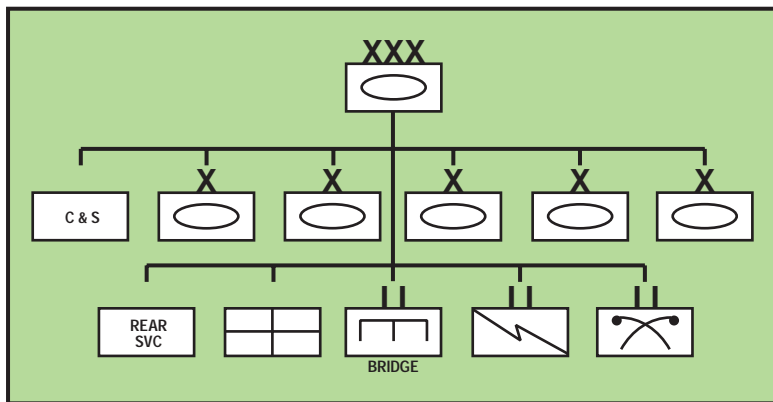
North Korean Military



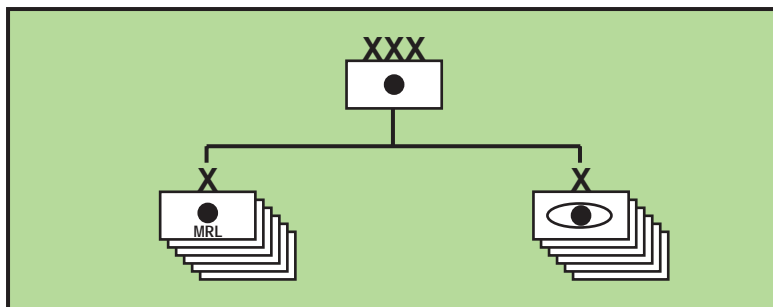
Infantry Corps



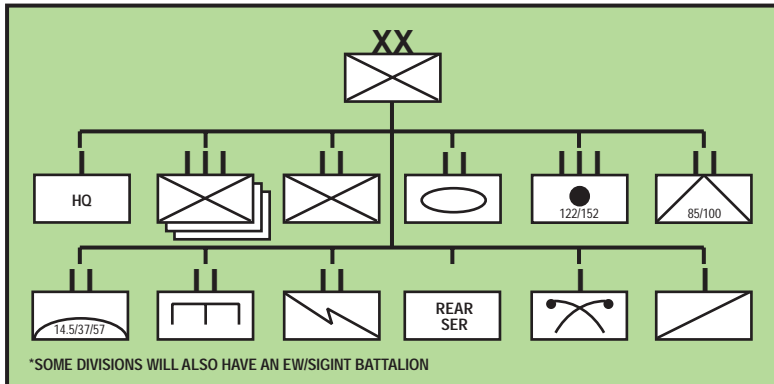
Mechanized Infantry Corps



Armor Corps

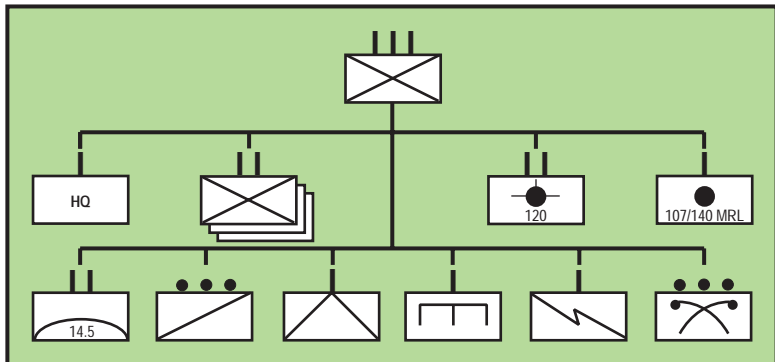


Artillery Corps



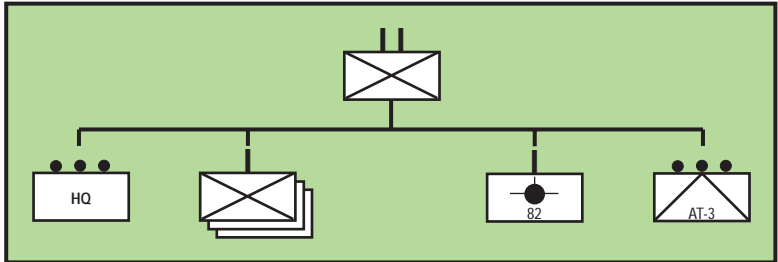
INFANTRY DIVISION	Total	Tk Bn	Art Reg	AT Bn	INF Reg	LINE Bn	AAA Bn	Eng Bn	Sig Bn	Recon Co	CML Co	HQ +RS
T-54/55	31	31										
M1985/Type-62/63/PT-76	2	2										
D-20 152mm Howitzer	18		18									
D-74/M-38 122mm Howitzer	54		54									
T-63/RPU (107/140 MRL)	27				9							
D or M-44 (85/100 AT Gun)	12			12								
M-39 (76.2 AT Gun)	18				6							
AT-3 SAGGER	27				9							
B-10/11 (82/107 RG)	27				9							
RPG-7 (AT Lchr)	658		8		192	18		10	4	4	4	36
M-43 (120mm Mortar)	81				18							
M-37 (82mm Mortar)	81				27							
T-31 (60mm Mortar)	18					18						
Flamethrower	4				4							
RPD/RP-46/SMG	859	2	34	8	257	18		6	8	4	4	12
SA-7b	42				12		6					
ZPU-2/4 (14.5 AAA HMG)	60				18		6					
M-39 (37 AAA Gun)	6						6					
S-60 (57 AAA Gun)	6						6					
FIRE CAN (FLAP WHEEL)	2						2					
V-415 Jeep	57	3	8	1	8		1	3	5	1		12
2 1/2T Utility Truck	692	18	110	21	126	1	43	25	30	1	10	75
M-72 Motorcycle	29								8	5		16
T-34-T Tank RTVR	1	1										
Personnel	10359	226	930	195	2379	450	282	279	260	95	105	400
Officer	1333	22	118	23	182	30	23	25	21	5	5	95
Enlisted	9026	204	812	172	2197	420	259	254	239	90	100	305

Infantry Division



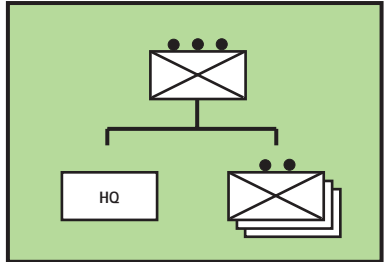
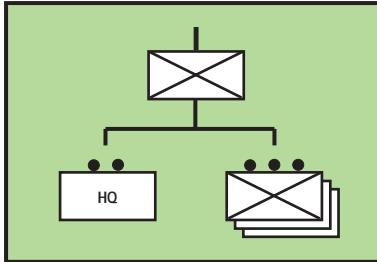
INFANTRY REGIMENT	Total	INF Bn	MTR Bn	AAA Bn	MRL Btry	AT Btry	Eng Co	Sig Co	Recon Plt	CML Plt	HHC
T-63/RPU (107/140 MRL)	9				9						
M-39 (76.2 AT Gun)	6					6					
AT-3 SAGGER	9	3									
B-10/11 (82/107 RG)	9	3									
RPG-7 (AT Lchr)	192	58	8				3	3			4
M-43 (120mm Mortar)	27										
M-37 (82mm Mortar)	27	9	27								
SA-7b	12	3		3							
ZPU-2/4 (14.5 AAA HMG)	18			18							
V-415 Jeep	8	1	1	1							3
2 1/2T Utility Truck	126	8	31	33	9	7	5	5	5		7
Flamethrower	4						4				
RPD/RP-46/SMG	257	81	8				3				
AK Rifle	1896	360	156	259	70	73	61	54	30	25	88
M1891 30 Rifle	18	6									
T-64/68 Pistol	182	29	26	23	5	5	5	5	1	1	24
Personnel	2379	476	206	282	75	78	76	65	31	26	112
Officer	182	29	26	23	5	5	5	5	1	1	24
Enlisted	2197	447	180	259	70	73	71	60	30	25	88

Infantry Regiment



INFANTRY BATTALION	Total	INF Co	MTR Btry	AT Plt	HQ
AT-3 SAGGER	3			3	
B-10/11 (82/107 RG)	3			3	
RPG-7 (AT Lchr)	58	18	9	4	
M-37 (82mm Mortar)	9				
SA-7b	3				3
V-415 (jeep)	1				1
2 1/2T Utility Truck	8		3	3	2
RPD/RP-46/SMG	81	27			
AK Rifle	360	83	57	20	34
M 1891 30 Rifle	6	1			3
T-64/68 Pistol	29	5	5	1	8
Radio, R116/126	17	5			2
Radio, R106	9	1	1	1	4
Radio, R105	2				2
Radio, RDM	1				1
Telephone, TAI-43	24	5	5	1	3
Switchboard	6	1	1		2
Personnel	476	116	62	21	45
Officer	29	5	5	1	8
Enlisted	447	111	57	20	37

Infantry Battalion

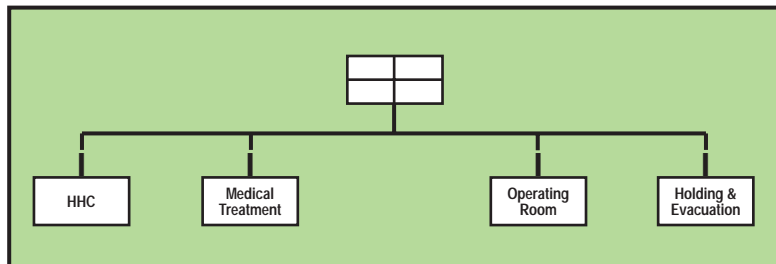


INFANTRY COMPANY	Total	INF Plt	HQ
RPG-7 (AT Lchr)	18	6	
RPD/RP-46/SMG	27	9	
AK Rifle	83	27	2
M 1891 30 Rifle	1	1	1
T-64/68 Pistol	5	1	2
Radio, R116	5	1	2
Radio, R106	1		1
Telephone, TAI-43	5	1	2
Switchboard	1		1
Personnel	116	37	5
Officer	5	1	2
Enlisted	111	36	3

Infantry Company

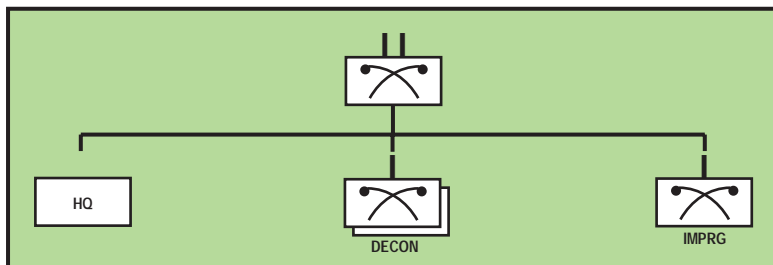
INFANTRY PLATOON	Total	INF Sqd	HQ
RPG-7 (AT Lchr)	6	2	
RPD	9	3	
AK Rifle	27	9	
T-64/68 Pistol	1		1
Radio, R116	1		1
Telephone, TAI-43	1		1
Personnel	37	12	1
Officer	1		1
Enlisted	36	12	

Infantry Platoon



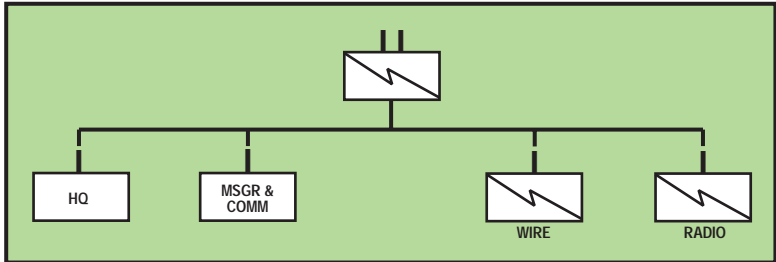
FIELD HOSPITAL	Total	HHC	MT Co	OP Rm Co	H&E Co
AK Rifle	370	84	81	142	63
T-64/68 Pistol	65	6	24	30	5
V-415 Jeep	4	4			
2 1/2T Truck	63	5	12	10	36
Personnel	445	90	105	172	68
Officer	65	6	24	30	5
Enlisted	370	84	81	142	63

Field Hospital



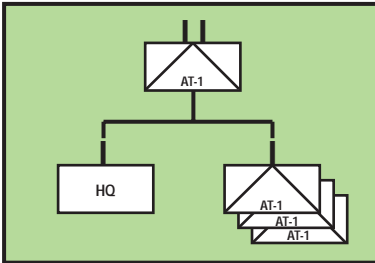
CHEMICAL BATTALION	Total	HQ	DECON Co	IMPRG Co
RPG-27 (40 AT Lchr)	12	3	3	3
RPD/RPK	12	3	3	3
AK Rifle	276	42	84	66
T-64/68 Pistol	15	6	3	3
V-415 Jeep	1	1		
2 1/2T Truck	30	6	9	6
Personnel	315	54	93	75
Officer	15	6	3	3
Enlisted	300	48	90	72

Chemical Battalion



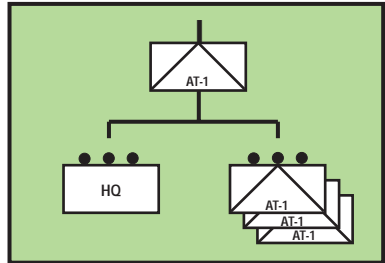
SIGNAL BATTALION	Total	HQ	MSGR & COMM	WIRE Co	RADIO Co
RPG-2/7 (40 AT Lchr)	12	2	2	4	4
RPD/RPK	14	4	2	4	4
AK Rifle	234	47	48	72	67
T-64/68 Pistol	39	21	7	6	5
V-415 Jeep	5	2	1	1	1
2 1/2T Truck	37	6	4	10	17
M-72 Motorcycle	20		20		
Radio	9	3			6
Switchboard	14	1	4	9	
Telegraph	5		5		
Personnel	299	74	59	86	80
Officer	39	21	7	6	5
Enlisted	260	53	52	80	75

Signal Battalion



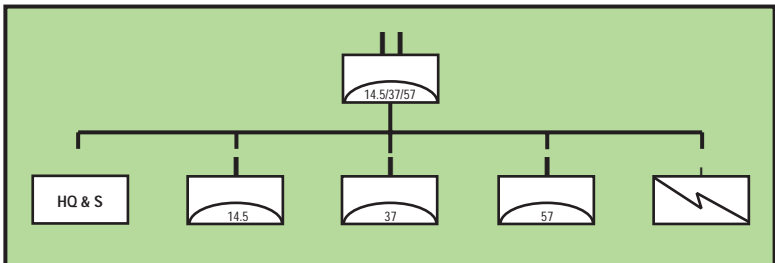
ATGM BATTALION	Total	ATGM Co	HQ
UAZ-69 ATGM AT-1	54	18	
AK Rifle	254	72	38
T-64/68 Pistol	35	9	8
V-415 Jeep	4	1	1
2 1/2 T Truck	21	5	6
Personnel	291	81	48
Officer	35	9	8
Enlisted	256	72	40

Corps Antitank Guided Missile Battalion



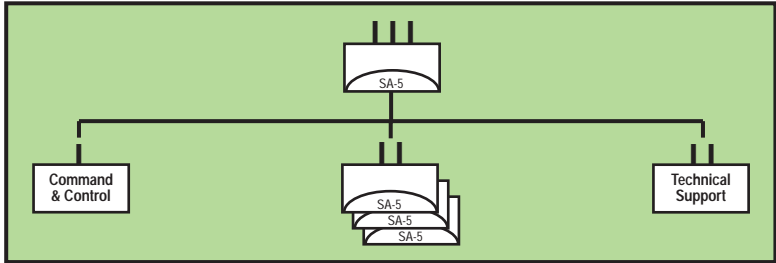
ATGM COMPANY	Total	ATGM PIT	HQ
UAZ-69 ATGM AT-1	18	6	
AK Rifle	72	17	21
T-64/68 Pistol	9	2	3
V-415 Jeep	1		1
2 1/2 T Truck	5	1	2
Personnel	81	19	24
Officer	9	2	3
Enlisted	72	17	21

Corps Antitank Guided Missile Company



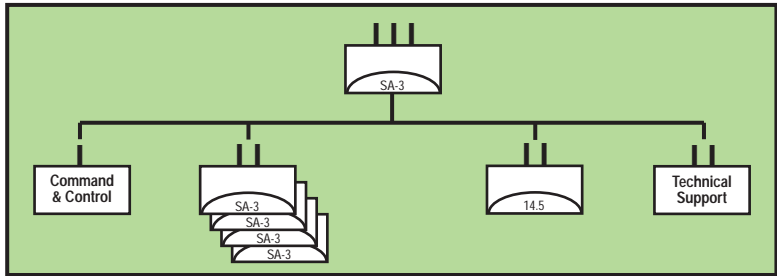
AAA BATTALION	Total		Total
M-39 (37 AAA Gun)	6	AK Rifle	259
S-60 (57 AAA Gun)	6	T-64/68 Pistol	23
ZPU-2/4 (14.5mm)	6		
FIRE CAN or BREAD BIN	4	Personnel	282
V-415 Jeep	1	Officer	23
2 1/2T Utility Truck	43	Enlisted	259

AAA Battalion



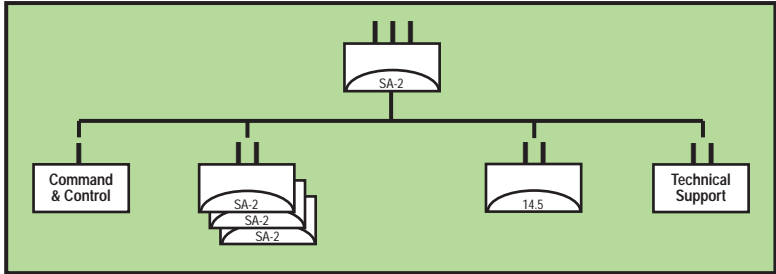
SA-5 REGIMENT	Total	SAM Bn	Cmd & Control	Tech Spt
SA-5 SAM Lchr	18	6		
BAR LOCK Radar	3	1		
SQUARE PAIR Radar	3	1		
BIG BACK Radar	1		1	
SIDE NET Radar	1		1	
MERCURY GRASS Truck	4	1	1	
Radar Control Truck	4	1	2	
Misc Trailers	38	10	6	2
ZIL-157V Transporter	30	6		12
Misc Trucks	91	14	11	38
V-415 Jeep	7	1	3	1
Personnel	910	115	90	106
Officer	86	12	14	10
Enlisted	824	103	76	96

SAM (SA-5) Regiment



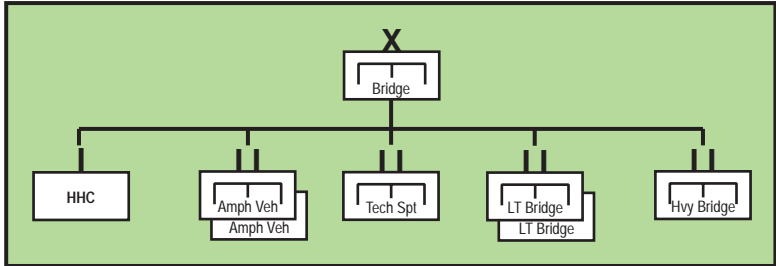
SA-3 REGIMENT	Total	SAM Bn	AAA Bn	Cmd & Control	Tech Spt
SA-3 SAM Lchr	16	4			
ZPU-4 (14.5 AAA HMG)	18		18		
LOW BLOW Radar	4	1			
FLAT FACE Radar	5	1		1	
SPOON REST Radar	1			1	
SIDE NET Radar	1			1	
MERCURY GRASS Truck	5	1		1	
Radar Control Truck	6	1		2	
Misc Trailers	48	10		6	2
ZIL-131 Transporter	24	4			8
Misc Trucks	119	12	24	11	36
V-415 Jeep	9	1	1	3	1
Personnel	910	108	282	84	112
Officer	86	10	23	12	11
Enlisted	824	98	259	72	101

SAM (SA-3) Regiment



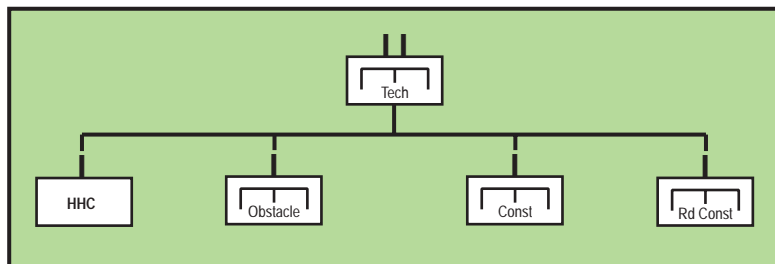
SA-2 REGIMENT	Total	SAM Bn	AAA Bn	Cmd & Control	Tech Spt
SA-2 SAM Lchr	18	6			
ZPU-4 (14.5 AAA HMG)	18		18		
SPOON REST Radar	4	1		1	
FAN SONG Radar	3	1			
FLAT FACE Radar	1			1	
MERCURY GRASS Truck	4	1		1	
Radar Control Truck	5	1		2	
Misc Trailers	38	10		6	2
ZIL-157V Transporter	30	6			12
Misc Trucks	137	18	24	11	48
V-415 Jeep	8	1	1	3	1
Personnel	833	115	282	90	116
Officer	88	12	23	14	15
Enlisted	745	103	259	76	101

SAM (SA-2) Regiment



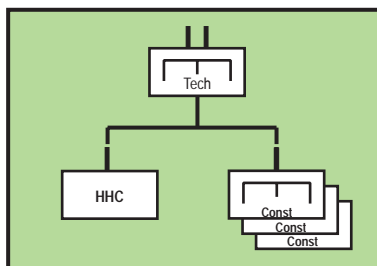
RIVER-CROSSING BRIGADE	Total	AMPH Veh	LT BRG	Hvy BRG	Tech Spt	HHC
K-61 Track Amphibious/PTS	120	60				
GSP Ferry Track Hvy Amph	24	12				
LPP Bridge PTN Set	48		24			
GAZ-63 Truck PTN Carry	144		72			
BMK-90 Boat Power w/TLR	36		12	12		
TPP Bridge PTN Set	48			48		
ZIL-151 Truck PTN Carry	96			96		
Utility Tractor	6				6	
Utility Bulldozer	4				4	
K-51 Crane	1			1		
K-32 Crane	4		2		2	
GAZ-46 Vehicle Amphibious	10	2	1	2	1	1
V-415 Jeep	12	1	1	1	3	4
2 1/2T Truck	196	16	32	44	42	14
RPG-27 (40 AT LCHR)	169	22	24	36	21	20
RPD/RPK	249	32	36	55	30	28
Personnel	2367	319	388	502	298	153
Officer	109	38	38	40	37	32
Enlisted	2258	281	350	462	261	121

River-Crossing Brigade



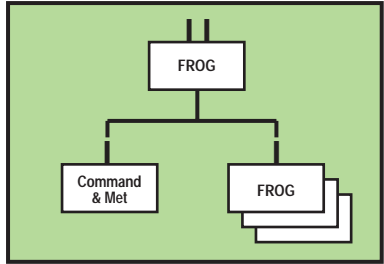
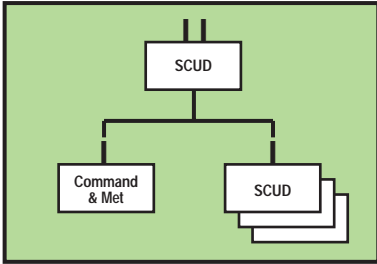
TECHNICAL ENGINEER BATTALION	Total
Trucks	2
Bulldozers	11
Compressors	7
Generators	2
Graders	2
Elevators	1
Band Saws	3
Mine Detectors	3

Technical Engineer Battalion



ENGINEER CONSTRUCTION BATTALION	Total
Trucks	12
Bulldozers	24
Compressors	1
Generators	3
Excavators	3
Rock Crushers	4
Cranes	4
Band Saws	2

Engineer Construction Battalion

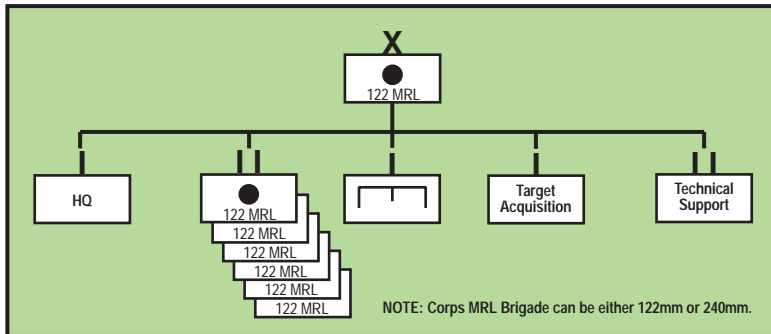


SCUD BATTALION	Total	Btry	Cmd & Met
SCUD-B TEL END TRAY Radar	6 1	2	1
2 1/2T Truck ZIL-135 Truck Resupply GAZ-69 Vehicle Survey	54 3 1	16 1	6 1
K-51 Crane	4	1	1
Personnel	173	41	8
Officer	23	5	42
Enlisted	150	36	50

Strategic Level SCUD B Battalion

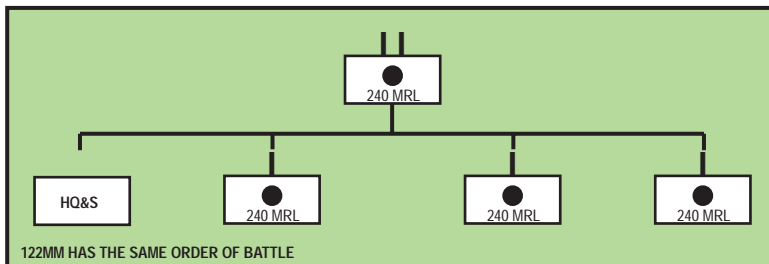
FROG BATTALION	Total	Btry	Cmd & Met
FROG-7 Launcher END TRAY Radar	3 1	1	1
2 1/2T Truck ZIL-135 Truck Resupply GAZ-69 Vehicle Survey	54 3 1	16 1	6 1
OR			
FROG-3/5 BREAD BIN Radar	3 1	1	1
2 1/2T Truck ZIL-135V Truck Resupply GAZ-69 Vehicle Survey K-51 Crane	54 3 1 3	16 1	6 1
Personnel	173	41	50
Officer	23	5	8
Enlisted	150	36	42

Strategic Level FROG Battalion



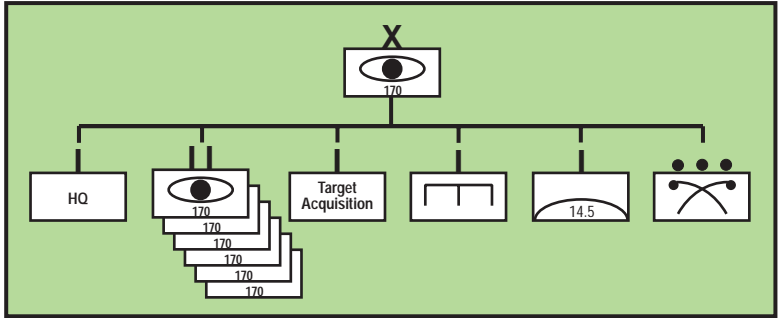
MRL BRIGADE (122mm)	Total		Total
BM-11 (122mm) RPD/RPK (7.62mm LMG) AK Rifle T-64/68 Pistol	108	V-415 Jeep 2 1/2T Utility Truck END TRAY Radar	
		Personnel Officer Enlisted	1500

Corps MRL Brigade



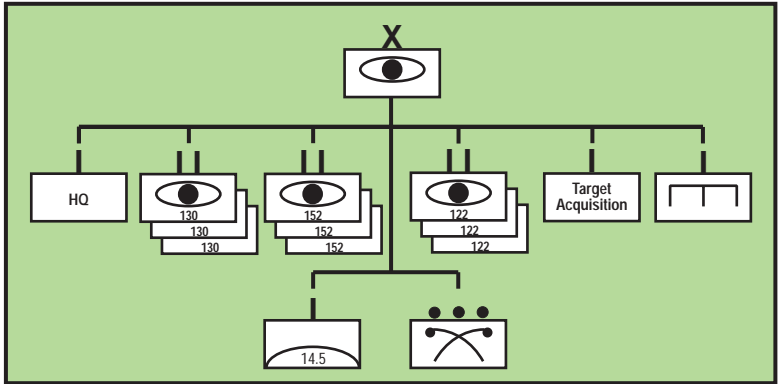
MRL BATTALION (240MM)	Total		Total
BM-24 (12rd 240mm MRL) RPD/RPK (7.62mm LMG) AK Rifle T-64/68 Pistol	15 8 184 17	V-415 Jeep 2 1/2T Utility Truck	1 12
		Personnel Officer Enlisted	209 17 192

Corps MRL Battalion



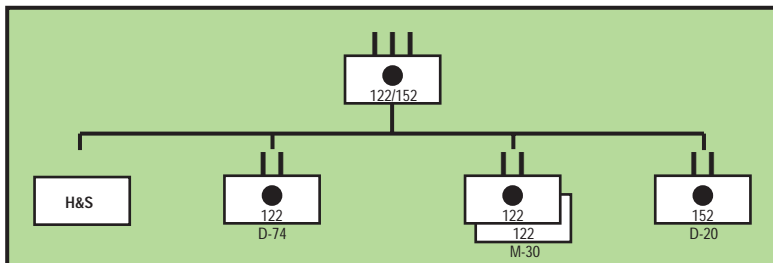
ARTILLERY BRIGADE (170mm SP "KOKSUN")	Total
M-1978/M-1989 (170mm SP) RPD/RPK (7.62mm LMG) AK Rifle T-64/68 Pistol	72
V-415 Jeep 2 1/2T Utility Truck END TRAY Radar	
Personnel Officer Enlisted	

Strategic Level Heavy Artillery Brigade



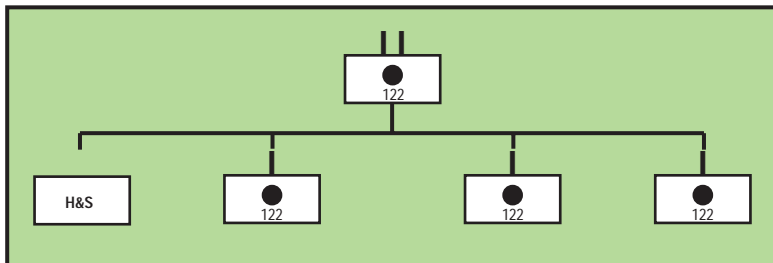
CORPS SP ARTILLERY BRIGADE	Total
M-1974 (152mm D-20)	54
M-1975 (130mm M-46)	54
M-1981 (122mm D-74)	54
RPD/RPK (7.62mm LMG)	
AK Rifle	
T-64/68 Pistol	
V-415 Jeep	
2 1/2T Utility Truck	
END TRAY Radar	
Personnel Officer Enlisted	

Corps Artillery Brigade



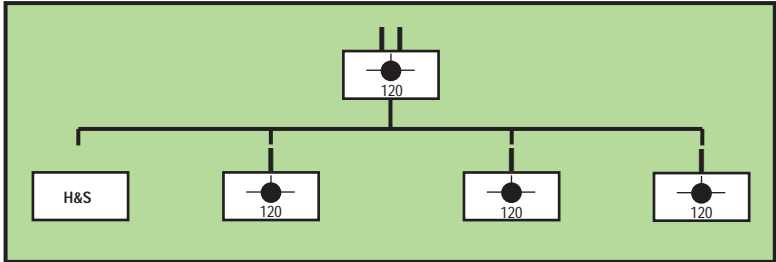
ARTILLERY REGIMENT 122/152mm TOWED	Total		Total
D-74 (122mm How)	11	V-415 Jeep	8
M-30 (122mm How)	36	2 1/2T Utility Truck	118
D-20 (152mm How)	18		
RPG-2/7 (40AT Lchr)	8	Personnel	930
RP-46 (7.62 MG)	34	Officer	118
AK Rifle	778	Enlisted	812
T-64/68 Pistol	118		

Division 122/152mm Towed Artillery Regiment



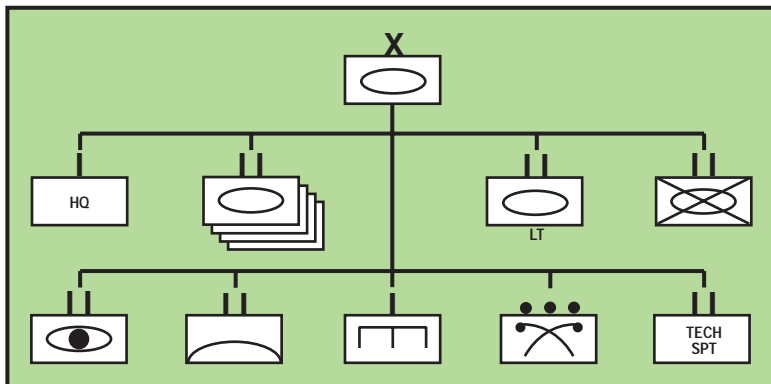
ARTILLERY BATTALION 122mm TOWED	Total		Total
M-38 (122mm How)	18	V-415 Jeep	1
RP-46 (7.62 MG)	8	2 1/2T Utility Truck	26
AK Rifle	190		
T-64/68 Pistol	26	Personnel	224
		Officer	26
		Enlisted	198

Artillery Battalion



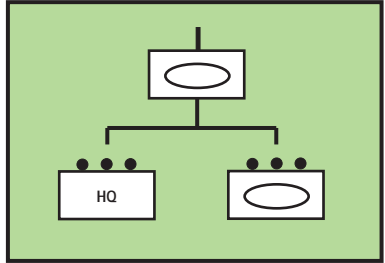
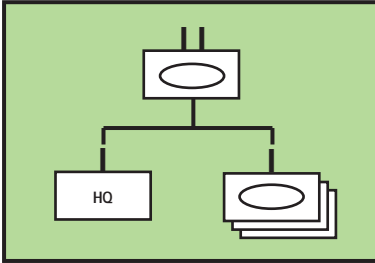
MORTAR BATTALION 120mm	Total
M-43 (120mm Mortar)	27
RPG-27 (40AT Lchr)	8
RP-46 (7.62 MG)	8
AK Rifle	158
T-64/68 Pistol	26
V-415 Jeep	1
2 1/2T Utility Truck	31
Personnel	206
Officer	26
Enlisted	180

Regimental Mortar Battalion



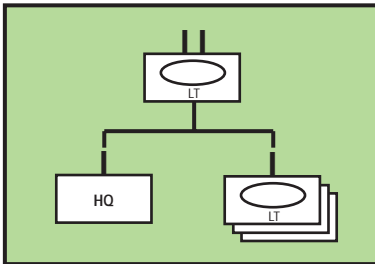
ARMOR BRIGADE	Total	Tk Bn	LT Tk Bn	M Inf Bn	152 Reg	122 Bn	AAA Bn	Eng Co	HQ	Tech Spt	CML Pit
T-62	124	31									
VTT-323/BTR-60/M1967	58	2		43					6		3
M1985/BRDM AT-3/4	3			3							
M1985/Type-62-63/PT-76	40		40								
152mm SP Howitzer	18				18						
122mm SP Howitzer	18					18					
ATGM AT-3 Manpack	3			3				4	2	6	
RPG-2/7 (40 AT Lchr)	43			31							
M-37 (82mm Mortar)	9			9							
SA-7b	12			3			6		3		
M1983/BTR-152A (14.5)	6						6				
SPAAG (37)	6						6				
Type-90/ZSU-57 (57)	6						6				
FIRE CAN Radar	3						3				
V-415 Jeep	26	3	3	1	1	1	1	7	5	4	1
2 1/2T Utility Truck	162	18	11	14	12	12	30		10	12	
T-54-T Tank RTVR	6	1	1							2	
RPD/RPK LMG	70	2	2	33	9	9		4	2	5	
Personnel	2481	226	190	504	230	230	282	76	120	145	26
Officer	224	22	21	31	28	28	23	5	14	7	1
Enlisted	2257	204	169	473	202	202	259	71	106	138	25

Tank Brigade



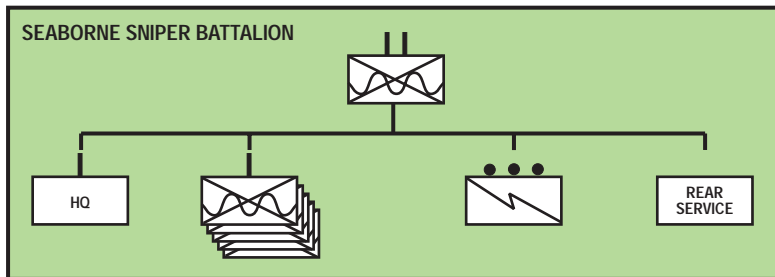
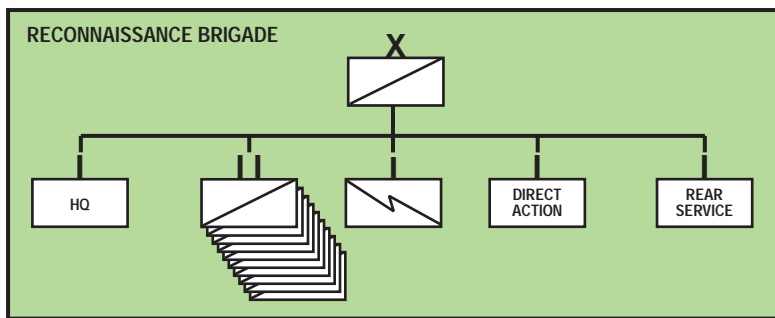
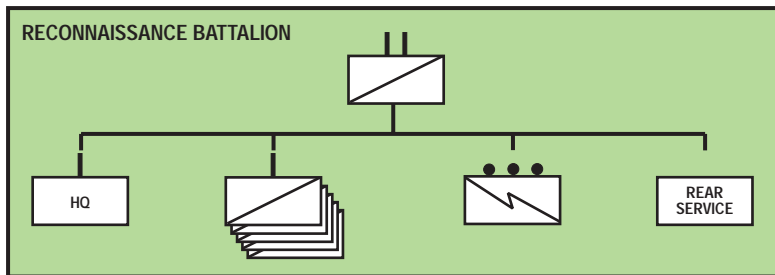
TANK BATTALION	Total	Tk Co	HQ
T-55(59)/62(69)	31	10	1
M1985/Type62/63/PT-76	2		2
V-415 Jeep	3		3
2 1/2T Utility Truck	18	3	9
T-34-T Tank RTVR	1		1
RP-46	2		2
AK Rifle	204	50	52
T-64/68 Pistol	22	5	7
Personnel	226	55	61
Officer	22	5	7
Enlisted	204	50	54

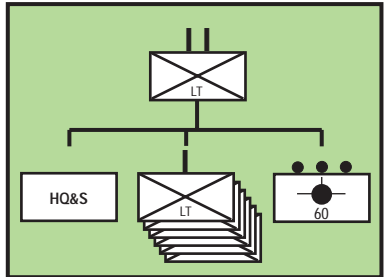
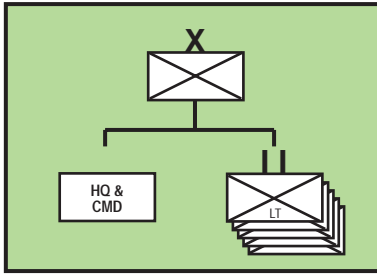
TANK COMPANY	Total	Tk Plt	HQ
T-55(59)/62	10	3	1
2 1/2T Utility Truck	3		3
AK Rifle	50	11	17
T-64/68 Pistol	5	1	2
Personnel	55	12	19
Officer	5	1	2
Enlisted	50	11	17



Basic Tank Battalion (Top Left)
Basic Tank Company (Top Right)
Light Tank Battalion (Bottom)

LIGHT TANK BATTALION	Total	Tk Co	HQ
M1985/Type62/63/PT-76	40	10	10
V-415 Jeep	3		3
2 1/2T Utility Truck	11	2	5
T-34-T Tank RTVR	1		1
RP-46	2		2
AK Rifle	204	40	49
T-64/68 Pistol	22	5	7
Personnel	190	45	55
Officer	21	5	6
Enlisted	169	40	49

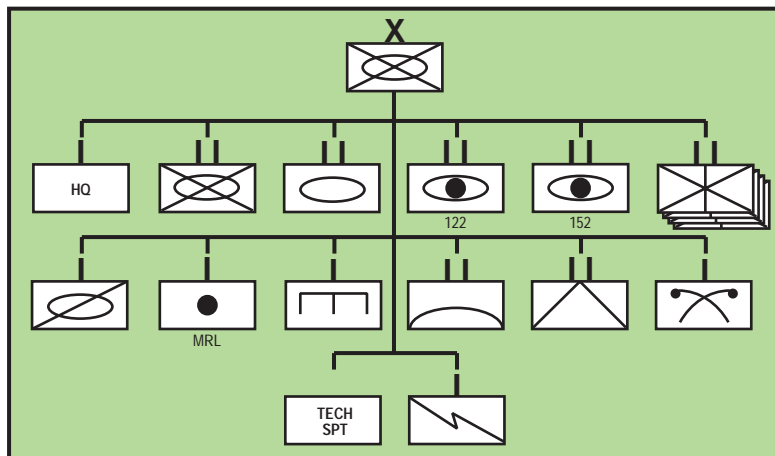




LIGHT INFANTRY BRIGADE	Total	Bn	Comp
RPG-2/7 (40 AT Lchr)	138	18	3
60 MTR	105	21	3
RPD/RPK	136	18	3
AK Rifle	2950	414	66
T-64/68 Pistol	3220	450	72
V-415 Jeep	2		
2 1/2T Truck	13	1	
Personnel	3300	450	72
Officer	80		
Enlisted	3220	450	72

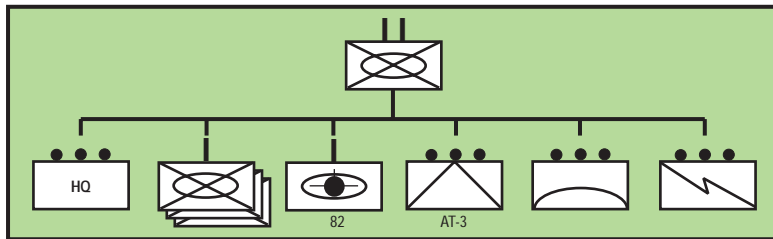
Light Infantry Battalion

Light Infantry Brigade



MECHANIZED INFANTRY BRIGADE	Total	M INF Bn	Mt INF Bn	Tk Bn	Art 152	Art 122	MTR Bn	AT Bn	AAA Bn	MRL Brg	HQ	Tech Spt	Rec Co	Eng Co	Sig Co	Chm Co
T-62	31			31												
M1985/Type-62/63/PT-76	5			2												
VTT-323/BTR-60/M1967	56	43									6			3		
M1985/BRDM AT-3/4	15	3						9					7			
122/152mm SP Howitzer	18/18				18	18										
BM-21 (122mm MRL)	6									6						
ATGM AT-3 Manpack	15	3	3													
SPG-9 (73mm)	12							12								
B-11 (107 RG)	15	3	3													
RPG-7 (AT Lchr)	285	31	62								2	6	9	4	4	4
M-43 (120mm Mortar)	27															
M-37 (82mm Mortar)	45	9	9				8									
SA-7b	24	3	3				27				3					
BTR-152A (14.5)	6															
SPAAG (37)	18	4	2													
Type-80/ZSU-57 (57)	6															
FIRE CAN Radar	3															
V-415 Jeep	28	1	1	3	1	1	1	3	1	6	4	1	1	1	1	1
2 1/2T Utility Truck	376	14	37	18	12	12	31	35	30	3	50	16	5	7	8	10
M-72 Motorcycle	8												8			
T-54-T Tank RTVR	7			1								6				
RPD/RPK LMG	383	33	85		9	9	8	8		2	2	6	6	4	4	4
AK Rifle	3780	408	383	204	184	184	158	156	259	60	152	155	75	63	52	113
M1891/30 Rifle	18		6													
Personnel	4781	555	506	226	230	230	208	195	282	66	180	175	96	76	65	126
Officer	364	32	31	22	28	28	28	23	23	4	24	8	6	5	5	5
Enlisted	4417	523	475	204	202	202	180	172	259	62	158	167	90	71	60	121

Mechanized Infantry Brigade



MECHANIZED INFANTRY BATTALION	Total	INF Co	MTR Btry	AT Plt	AAA Plt	Sig Plt	HQ
VTT-323/BTR-60/M1967	43	10	10				3
M1985/BRDM AT-3/4	3			3			
AT-3 SAGGER Manpack	3	1					
B-11 (107 RG)	3			3			
RPG-7 (AT Lchr)	31	9		4			
M-37 (82mm Mortar)	9		9				
SA-7b	3						3
SPAAG	4				4		
V-415 Jeep	1						1
2 1/2T Utility Truck	14	1	2	2		3	4
RPD/RPK-46/SMG	33	9				4	2
Rifle AK	408	87	57	20		17	53
T-64/68 Pistol	96	26	5	1		1	9
Radio, R-112	2						2
Radio, R-114	14	4					2
Radio, R-113	38	10	4	1	1		2
Receiver, R-311	1						1
Personnel	555	120	62	25	17	26	65
Officer	32	5	5	1	1	1	9
Enlisted	523	115	57	24	16	25	56

Mechanized Infantry Battalion

SECTION 5

MEDICAL ASSESSMENT

Key Judgments

U.S. military personnel deploying to the Korean Peninsula will encounter significant infectious disease and environmental health risks. Disease and non-battle injuries (DNBIs) present a major risk to the effectiveness of operational units and the success of the overall mission. Command emphasis on preventive medicine measures, good personal hygiene, disease surveillance and reporting, and troop discipline at all levels is essential for limiting infectious disease and environmental health risks.

The primary infectious disease risks are from scrub typhus, hemorrhagic fever with renal syndrome (Korean hemorrhagic fever), and Japanese encephalitis. Risks from food- and water-borne diseases include diarrheal diseases, typhoid and paratyphoid fevers, and hepatitis A. Risks may vary among geographic areas and seasons. Environmental health risks are primarily attributable to extremes of heat and cold, depending on the region and season, and poor food and water sanitation. Unregulated industry and agriculture heavily pollute air, water, and soil resources.

Preventive countermeasures are the key to combat strength, and their implementation and continued emphasis must be a command responsibility. Use of local and regional food, water, and ice sources without proper inspection and approval by U.S. medical personnel (military public health, veterinary, and preventive medicine units) will put operational forces at great risk of acquiring food- and water-borne diseases that could significantly degrade the effectiveness of over 10 to 20 percent of the entire force within 24 to 48 hours. Additionally, without the implementation of effective preventive medicine countermeasures, small point-source outbreaks could degrade company-size units to the point of being operationally ineffective for up to 7 days.

Disease Risks

Diseases Contracted From Insects or Animals

Malaria. This disease is transmitted by the bite of an infective mosquito. Likely prevalent at low levels along the DMZ. Transmission has been occurring in South Korea's northwestern province of Kyonggi-do along the DMZ. Reported cases in South Korea have been increasing each year (21 in 1994; 107 in 1995; and 306 in 1996, including U.S. personnel). Vector mosquitos are present in North Korea. Transmission usually occurs from May through September with the peak season during July and August.

Japanese Encephalitis. This disease is an acute mosquito-borne infection of the central nervous system. It is frequently associated with rice-growing areas. Greatest risk period is from May through late September. It is found countrywide in areas where mosquito-breeding sites and pig-rearing areas coexist. The last major epidemic of Japanese encephalitis in the ROK occurred during 1982, with 1,197 reported cases among local nationals. Human cases of the disease have decreased in the ROK, partially because of a national vaccination program and changes in agricultural practices.

Korean Hemorrhagic Fever. This was a disease of historic significance to U.S. military forces in the Korean War. The disease continues to exhibit a low level of annual incidence (0 to 5 cases among U.S. forces per year). Primary transmission is from inhaling airborne dust particles contaminated with infective rodent excreta or saliva. Risk occurs countrywide and year-round, although peak disease incidence occurs October through December. Elevated risk is associated with dusty, dry conditions and peak rodent populations. Korean hemorrhagic fever is characterized by an abrupt onset of fever of 3 to 8 days duration, prostration, backache, headache, abdominal pain, anorexia, and vomiting.

Typhus. Typhus includes any of several forms of infectious diseases caused by microorganisms of the genus *Rickettsia*. It is characterized by severe headache, sustained fever, depression, and red rashes. Mites are the primary vector of scrub typhus, an infection prevalent where scrub brush and secondary growth vegetation coexist. In South Korea, 90 percent of all scrub typhus cases occurred between October and December. Louse-borne (epidemic) and flea-borne (murine) typhus are contracted by scratching louse and flea feces into the skin respectively. Louse-borne typhus has been responsible for large epidemics in Korea and is still a threat under adverse circumstances, such as war or natural disaster. Sporadic outbreaks of flea-borne typhus have occurred around seaports and warehouse areas.

Helminthic Infections. These infections include ascariasis, clonorchiasis, and hookworm infection. Transmission primarily occurs when the skin comes in contact with soil or water containing any of a large variety of parasitic intestinal worms.

Rabies. Before 1975, rabies was a serious concern on the Korean Peninsula. Since 1976, there have been only two cases of human rabies in the ROK, with none occurring since 1984. Some cattle and dog cases were reported in South Korea in 1996.

Diseases Contracted From Other People/Poor Hygiene

Stomach/Intestinal Infections. Prevailing unsanitary conditions make stomach/intestinal infections a principal threat. Transmission is common from contaminated food, water, and ice. Diseases of greatest concern include:

“Traveler's Diarrhea”: Diarrheal diseases probably are the greatest infectious threat for troops deployed to the Korean Peninsula. Bacterial, viral, parasitic, and viral causes are all possible. *Local food and water should be considered contaminated unless otherwise indicated by medical personnel.* If you get traveler's diarrhea, drink plenty of fluids to avoid becoming dehydrated.

Hepatitis A: Hepatitis A infection rates are moderate to high in local populations. Most U.S. personnel have no immunity and are susceptible to this disease. Ensure shots are up to date prior to deployment.

Cholera: Extensive countrywide outbreaks occurred throughout the summers of 1995 and 1996 and affected all provinces. The outbreaks were associated with the consumption of contaminated seafood and municipal water. Risk is elevated May through November.

Typhoid and Paratyphoid Fevers: Risk is year-round and countrywide, with highest numbers of reports from North Hamyong Province. Outbreaks frequently occur. Typhoid immunization is recommended.

Respiratory Infection. Acute respiratory infections have been noted to be a common affliction on deployments to the Korean Peninsula. Crowding in staging areas and tent camps, combined with poor personal hygiene, assists in the transmission of respiratory disease agents. Annual influenza vaccines should be current prior to deployment. Tuberculosis is also present in the civilian and military populations in the DPRK and the ROK.

Sexually Transmitted Diseases (STDs). Syphilis, gonorrhea, venereal warts, herpes, chlamydia, and hepatitis are common sexually transmitted diseases in Korea, some of which are reportedly penicillin resistant. The human immunodeficiency virus (HIV—the virus that causes AIDS) is not currently a significant problem in Korea, although the disease is present. The majority of HIV infections reported from South Korea have been acquired through heterosexual contact. Hepatitis B is prevalent at high levels. Risk is year-round and countrywide.

Environmental Health Risks

Most water sources are fecally contaminated. Living and sanitary standards are poor throughout the DPRK. Fertilization with night soil and poor food handling practices present significant risks of food-borne ill-

ness. Water and air pollution are widespread throughout the DPRK. Extremes of heat and cold also present risks, depending on the region and season.

Throughout the ROK, living and sanitary conditions are below Western standards. Heavy industrialization and a high population density overburden the ROK's infrastructure. Years of continual pollution have severely contaminated the air, water, and soil.

Water Supply

The DPRK's water sources include rivers, creeks, springs, and wells; supplies usually are plentiful, but seasonal shortages occur. The ROK's water sources include streams, springs, wells, lakes, and reservoirs; supplies are adequate, although shortages have been reported in urban areas during summer.

In the DPRK, major cities use slow sand filtration and chlorination to treat water; however, contamination occurs during distribution because of seepage and back siphoning. Although some urban water supplies are delivered via individual house hookups, most households obtain water from public taps. In the ROK, municipal water is supplied to more than 50 percent of the population countrywide and to nearly 100 percent in the larger cities. ROK's drinking water needs are not being met because of inadequate treatment and storage capacities, obsolete equipment, and lagging government investment.

Living and Sanitary Conditions

DPRK's living and sanitation conditions are well below those in most developed nations. Overcrowded living quarters are common because the demand for housing exceeds supply. Although larger cities, such as Pyongyang, have a limited number of modern, well-equipped apartment buildings, most urban and rural housing consists of small, one-room houses without plumbing. Charcoal-burning home-heating systems frequently malfunction, resulting in dangerous levels of carbon monoxide

within the dwellings. In rural areas, most housing offers minimum shelter, poor ventilation, and an excellent environment for vermin. Sewage disposal throughout most of the DPRK is inadequate. Although sewage treatment plants and septic systems are used in some large cities, sewage systems in most urban areas, consisting of both open and covered ditches, discharge raw sewage directly into streams or the sea. Rural inhabitants use outdoor privies for waste disposal, and night soil commonly is used as fertilizer.

ROK's living conditions are below developed nations' standards. The average Korean home is built partially of wood, brick, or stone, with tile or slate roofs. Millions of Koreans now live in small, cramped high-rise apartments. Sewage treatment and trash disposal services are limited to urban areas. Most sewage is not treated before being discharged. Charcoal-burning home-heating systems frequently malfunction resulting in dangerous levels of carbon monoxide within the dwellings.

Pollution

In the DPRK, it is unlikely that special efforts have been made to protect the environment from industrial contaminants, since raw sewage is routinely discharged into the environment. DPRK authorities and the media are reporting heavy industrial contamination of the Tumen, Chongchong, and Taedong Rivers. The sources of the pollution are believed to be mining companies, paper factories, steel mills, refineries, and chemical factories along the rivers. Heavy industrial and vehicle emissions produce high levels of heavy metals and photochemical pollution in and around Chongjin, Hamhung, Sunchon, and Pyongyang.

In the ROK, pollution is a pressing environmental problem. Water, soil, and air pollution impact morbidity and mortality throughout the ROK. Thirty toxic chemicals banned by the World Health Organization, most of them pesticides, are still used by farmers. Of these, aldicarb, captafol, and disulfoton are classified as extremely hazardous, while the remain-

der are classified as highly hazardous. Heavy metals from indiscriminate discharge of industrial waste contaminate ROK's watershed. The level of air pollution in Seoul is well above World Health Organization recommendations, with peak levels occurring during late fall and winter.

Climate

Seasonal and regional extremes of heat and cold present significant exposure risks. Winter months on the Korean Peninsula (November through March) are extremely cold and windy, making cold-related injuries a major medical threat. During the Korean War, over 8,000 soldiers suffered cold weather injuries. Winter temperatures can be as low as -4 °C (24 °F) with windchill temperatures of -31 °C (-25 °F). Summers (June through September) can have extreme highs of 37 °C (100 °F). Heat is not only a primary medical problem, it also exacerbates other diseases, making diagnosis and treatment more difficult. See Appendix F, First Aid and Hot and Cold Weather Survival, for more information.

Hazardous Animals and Plants

The Korean mamushi (*Agkistrodon blomhoffi*) is the only venomous snake found on the Korean Peninsula, primarily in southern areas. Scorpions, centipedes, and black widow spiders are also present. Poisonous plants include nettles, lacquer trees, poison ivy, poison sumac, agrimony, cow parsley, and soapberry which all produce a contact vesicant (an agent that induces blistering).

Ways to Protect Yourself Against Disease

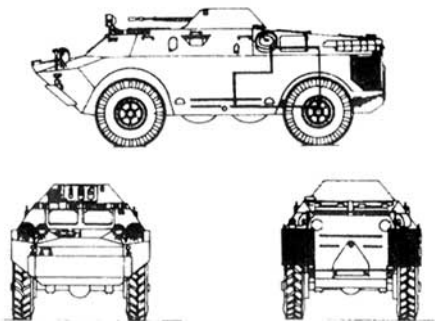
- *Avoid stagnant water.* Stagnant water is a breeding ground for both diseases and disease-carrying insects like mosquitos. Areas with many stagnant pools such as rice paddies, marshes, or junk piles should be avoided if possible.

- *Protect yourself against mosquito bites to reduce the risk of contracting malaria and Japanese encephalitis.* Protection from mosquitos and other biting flies can be accomplished by the use of screened eating and sleeping quarters (including head and bed nets) and by limiting the amount of outside activity during the evening/night hours if possible. Use plenty of insect repellent and keep sleeves rolled down, especially during field operations and at night. The repellent lotion should be applied to exposed skin including ears, face, and neck. Its area of application should extend 2 to 3 inches under the edges of the uniform to prevent biting insects from crawling into those areas.
- *Keep mites out of the campsite.* This can be done by clearing campsites of non-woody (low brush and scrub) vegetation and by the use of insect repellent on the skin and clothing.
- *Avoid breathing dust and dirt to reduce risk of contracting Korean hemorrhagic fever.* Use dust masks when necessary. Other dust control measures include wet sweeping, wetting roads, etc.
- *Maintain an effective, complete police of the area, particularly in the field.* The number of mosquitos and other hazardous pests (mites, ticks, fleas, and rodents) in the area will be greatly reduced by the elimination/proper disposal of all open, water-holding containers (such as empty cans, tires, etc.), waste materials, and human waste.
- *Avoid extended contact of bare skin with the soil, particularly in rural areas.* Many parasites can penetrate the skin. Poor sanitation practices throughout the Korean Peninsula greatly increase the risk of this type of infection, particularly in rural areas and areas where the soil is moist and rotting vegetation is present. The soil in these areas may be contaminated with infected animal feces, so direct contact with bare skin can result in infection. Prevention of infection involves minimizing soil/skin contact as much as possible — so, do not go barefoot, even in the campsite. Avoid sleeping on bare ground during field operations. Do not use mud or vegetation for camouflage.

- *Keep as dry as possible.* Many disease organisms are transmitted to man by direct skin contact with water or wet vegetation. To avoid becoming infected by these organisms, avoid fresh water contact when the mission permits. *Swimming, wading, and crossing flooded fields should be avoided to the greatest extent possible.* Also, keeping dry will greatly reduce the likelihood of having skin problems.
- *Limit contact with local wild and domestic animals.* Adopting pets from local animal populations is strictly forbidden. If bitten or scratched by an animal, thoroughly cleanse the wound/skin area with soap or detergent, even if there is no broken skin, and seek medical assistance immediately. This includes snake bites.
- *Avoid engaging in sexual activities with local persons, particularly prostitutes.* All deploying personnel must be educated and convinced of the serious risk of HIV/STD infection associated with prostitutes. *Abstinence is your best protection against infection with an STD. Though not 100 percent effective, condoms will greatly reduce your risk of becoming infected with an STD.*
- *Be extremely careful about eating and drinking.* The safest bet is to restrict the diet to food and drink *only from approved sources, particularly during field operations.* High risk food items (raw seafood or shellfish, fresh eggs, dairy products, and lettuce or other uncooked vegetables) should be avoided unless from officially approved sources.
 - ❑ Do not use local water for drinking or brushing teeth. Local ice is also considered unreliable. If local water must be used, boil or disinfect with iodine tablets (per label instructions). Ordinary chlorine bleach (2 to 4 drops per quart, allow 30 minutes contact) will also disinfect water.
 - ❑ Make sure all food, especially meat, is thoroughly cooked and served hot. *Avoid salads or raw foods of any kind.* Fresh fruit is safe for consumption if you peel it. Dairy products represent a very high risk of disease if not pasteurized.

- *Maintain as strict a standard of personal hygiene as possible at all times.* One of the best ways to stay healthy when in an unsanitary environment is to *frequent handwashing*, particularly prior to meals, toothbrushing, or touching the eyes/face. Any open cuts or scrapes should be treated with disinfectant and cleaned repeatedly until healed. Sanitary disposal of human waste, fly control, and enforced handwashing should be priority measures in the field.
- *See a medic if you are sick.* Report to appropriate medic if diarrhea, cough, fever, weakness, or any symptom that can't be explained are noted.

APPENDIX A: Equipment Recognition



BRDM-2

Type:	4 wheel drive, armored amphibious vehicle
Variants:	Command, reconnaissance, chemical reconnaissance (filtration/overpressure system, rear marking flag dispenser), antitank (AT-2/3/5), surface-to-air missile (SA-9)
Armament:	14.5mm, 7.62mm machineguns
Crew:	2
Troops:	6
Hull Thickness:	10-14mm
Road Range:	750 km
Max Speed	
Water:	10 km/hr
Paved Road:	100 km/hr
Fording:	Amphibious
Verticle Obstacle:	.4 m
Trench:	1.25 m
Other:	IR lights driver/commander, rear engine, central troop compartment



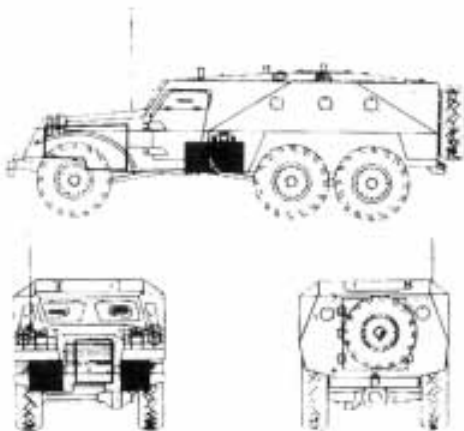
BMP-1 (KORSHUN)

Type:	Amphibious, armored, tracked infantry combat vehicle
Variants:	Command, reconnaissance (BRM/BRM-1), Type WZ-501 (Chinese version, carries 1 Red Arrow AT missile)
Armament:	73mm smooth bore main gun with 3 km max range, 7.62mm machinegun, AT-3
Crew:	3
Passengers:	8
Hull Thickness:	5-19mm, turret 23mm
Road Range:	500 km
Max Speed	
Water:	6-8 km/hr
Paved Road:	80 km/hr
Fording:	Amphibious
Verticle Obstacle:	.8 m
Trench:	2.2 m
Other:	Overpressurized for NBC protection, smoke laying capability, IR searchlight, 4 firing ports each side and 1 rear



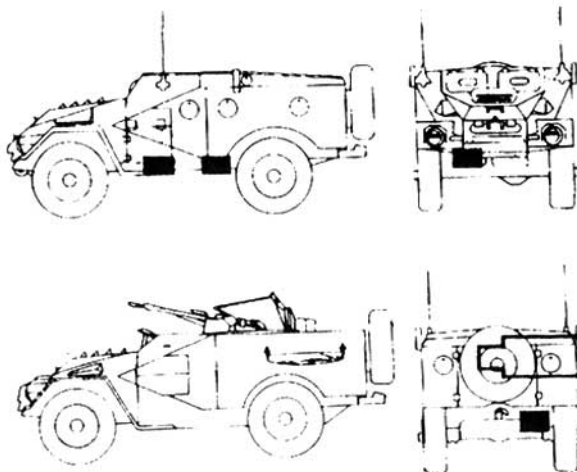
BTR-60PA/PB

Type:	Amphibious, armored personnel carrier
Variants:	BTR-60PA (overhead armor/NBC protection) BTR-60PB (14.5mm and 7.62mm machineguns) BTR-60PU (command)
Armament:	7.62mm machineguns (some with 12.7mm machineguns)
Crew:	3
Passengers:	11
Hull Thickness:	9-14mm
Road Range:	500 km
Max Speed	
Water:	9-10 km/hr (P model/water jet propulsion)
Paved Road:	80 km/hr
Fording:	Amphibious
Vertical Obstacle:	.4 m
Trench:	2 m
Climb Slope:	30 degrees
Other:	DPRK has mostly PA and PB models, searchlight and IR equipment, vulnerable to small arms fire/ fuel will ignite easily when fuel tanks punctured, 3 firing ports each side



BTR-152

Type:	Wheeled armored personnel carrier
Variants:	Command, twin 14.5mm machinegun for antiair, twin 23mm cannon version has been seen
Armament:	7.62mm machinegun
Crew:	2
Passengers:	17-18
Hull Thickness:	6-14mm
Road Range:	650 km
Max Speed	
Paved Road:	65 km/hr
Fording:	.8 m
Verticle Obstacle:	.6 m
Trench:	.7 m
Climb Slope:	30 degrees
Other:	Both 4 and 6 wheel drive, the V3 model has IR light, K model has overhead cover



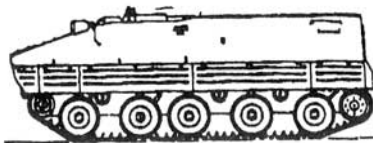
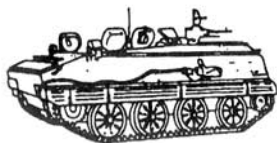
BTR-40

Type:	4-wheel drive command and reconnaissance vehicle
Variants:	K model has armored roof
Armament:	7.62mm machinegun, some may carry 14.5mm AA machinegun instead
Crew:	2
Troops:	8-9
Hull Thickness:	8-13mm
Road Range:	285 km
Max Speed	
Paved Road:	80 km/hr
Fording:	.9 m
Verticle Obstacle:	.47 m
Trench:	.7 m
Climb Slope:	30 degrees
Other:	Built on GAZ-63 chassis, sloping front, flat rear, open roof



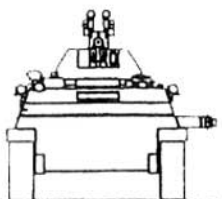
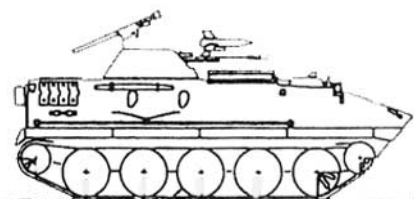
MT-LB

Type:	Amphibious, armored tracked vehicle
Variants:	Command, technical support, engineer
Armament:	7.62mm machinegun
Crew:	2+, varies with mission
Troops:	10
Hull Thickness:	7-14mm
Road Range:	600 km
Max Speed	
Water:	6 km/hr
Paved Road:	80 km/hr
Fording:	Amphibious
Vertical Obstacle:	.7 m
Trench:	2.7 m
Climb Slope:	30 degrees
Other:	IR searchlight, NBC filtration system, vulnerable to armor piercing ammunition, prime mover for artillery and as cargo or general transport vehicle



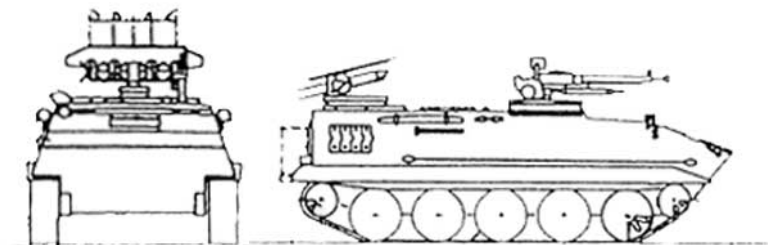
MODEL 531A

Type:	Chinese, amphibious, armored personnel carrier
Armament:	7.62mm machinegun
Crew:	4
Troops:	10
Hull Thickness:	12mm
Road Range:	400-425 km
Max Speed	
Water:	7 km/hr
Paved Road:	50 km/hr
Fording:	Amphibious
Verticle Obstacle:	.6 m
Trench:	2 m
Climb Slope:	32 degrees
Other:	One firing port each side, no vision blocks, no night vision or NBC equipment



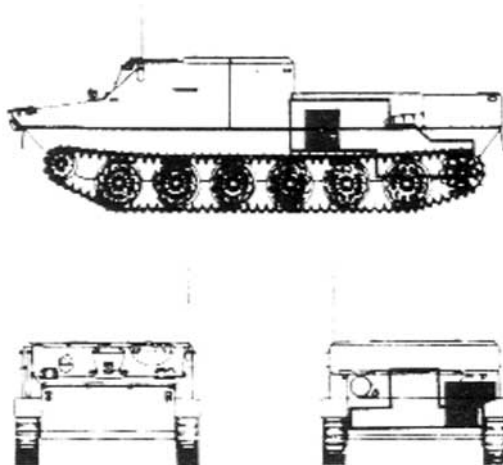
VTT-323 (M-1973)

Type:	The VTT 323 APC is based on the earlier Chinese YW531. The vehicle features a welded steel, box-like hull with a small turret positioned just to the rear of the hull centerline
Armament:	Twin 14.5mm hvy MG, AT-3 ATGM
Crew:	2
Troops:	13
Hull Thickness:	24mm
Road Range:	450 km
Max Speed	
Water:	10 km/hr
Paved Road:	80 km/hr
Fording:	Amphibious
Verticle Obstacle:	.6 m
Trench:	2.2 m
Climb Slope:	34 degrees
Other:	May also carry SA-7/16 SAM



TYPE 85 ATGM CARRIER

Type:	ATGM carrier
Armament:	AT-3, 14.5mm machinegun
Crew:	4
Road Range:	500 km
Max Speed	
Water:	7 km/hr
Paved Road:	65 km/hr
Fording:	Amphibious
Verticle Obstacle:	.6 m
Trench:	2.2 m
Climb Slope:	32 degrees



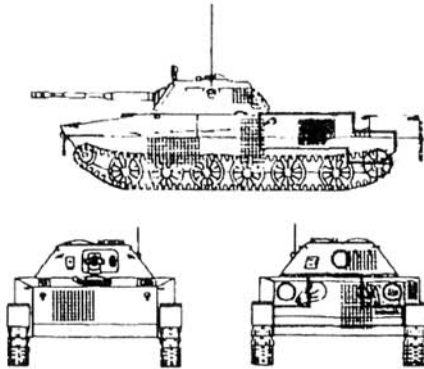
BTR-50

Type:	Amphibious, armored personnel carrier
Variants:	BTR-50P (open top), BTR-50PK (armored roof), BTR-50PU (command vehicle)
Armament:	12.7mm machinegun
Crew:	2
Troops:	14
Hull Thickness:	10mm
Road Range:	240 km
Max Speed	
Water:	11 km/hr
Paved Road:	45 km/hr
Fording:	Amphibious
Vertical Obstacle:	1.1 m
Trench:	2.8 m
Climb Slope:	38 degrees
Other:	Vulnerable to small arms fire, no NBC capabilities

LINE DIAGRAM UNAVAILABLE

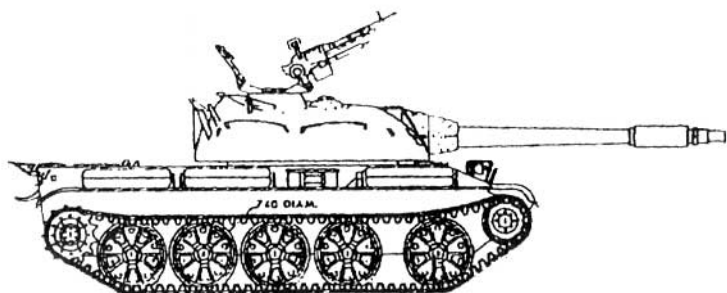
M1992

Type:	Amphibious, armored personnel carrier
Armament:	30mm automatic grenade launcher, AT-4 ATGM
Crew:	2
Troops:	8
Hull Thickness:	10mm, 15mm 60 degree frontal arc
Road Range:	500 km
Max Speed	
Water:	N/A
Paved Road:	60 km/hr
Fording:	Amphibious
Verticle Obstacle:	.6 m
Trench:	.4 m
Climb Slope:	30 degrees
Other:	Probably 4-wheel drive, resembles BRDM, no NBC capabilities



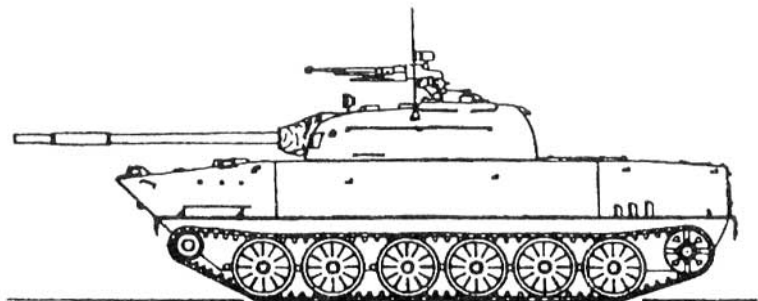
PT-76

Type:	Amphibious tank
Armament:	76mm main gun
Max Range:	12 km
Effective Range:	650 m
Rate of Fire:	6-8 rds/min
Stabilization:	Some models
Ammunition:	HE-FRAG, HEAT, HVAP-T, AP-T
Armor Penetration	
at 1,000 m:	32mm (HVAP-T), 60mm (AP-T), 120mm (HEAT, any range)
Basic Load:	40 rds
Hull Thickness:	25mm
Road Range:	260 km (450 with tanks)
Max Speed	
Water:	10 km/hr
Paved Road:	44 km/hr
Fording:	Amphibious
Verticle Obstacle:	1.1 m
Trench:	2.8 m
Climb Slope:	30 degrees
Other:	12.7mm machinegun, no night devices, no NBC protection, main gun elevation -4 to 30 degrees



TYPE-62 LIGHT TANK

Type:	Light tank
Armament:	85mm cannon, 7.62mm coax and bow MG
Basic Load:	85mm — 47 rds
Hull Thickness:	45mm
Road Range:	500 km
Max Speed	
Paved Road:	60 km/hr
Fording:	1.3 m
Verticle Obstacle:	9.7 m
Trench:	2.55 m
Climb Slope:	30 degrees
Other:	Resembles a scaled down Type-59



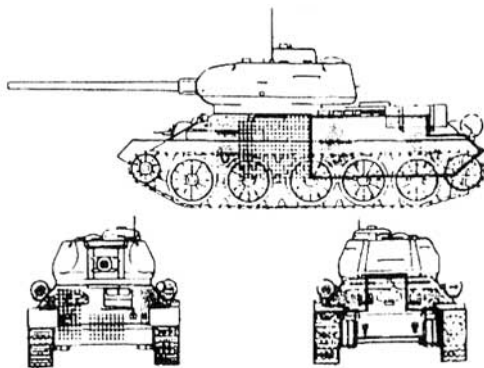
TYPE-63 LIGHT AMPHIBIOUS TANK

Type:	The Type-63 amphibious tank's chassis is based on the Type-77 APC and its turret on the Type-62 light tank
Armament:	85mm cannon, 12.7mm and 7.62mm MG
Basic Load:	85mm — 44 rds
Hull Thickness:	23mm
Road Range:	370 km
Max Speed	
Water:	12 km/hr
Paved Road:	64 km/hr
Fording:	Amphibious
Vertical Obstacle:	.87 m
Trench:	2.9 m
Climb Slope:	38 degrees
Other:	Resembles a scaled down Type-59

LINE DIAGRAM UNAVAILABLE

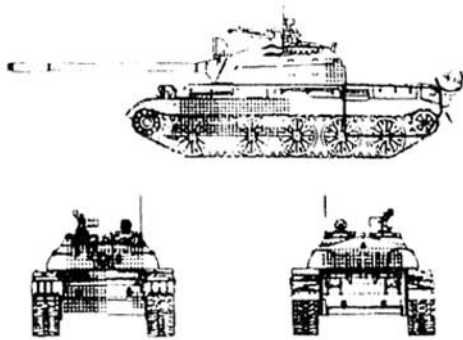
PT-85 (TYPE-82)

Type:	North Korean produced amphibious tank, based on the VTT-323 APC chassis
Armament:	85mm main gun, AT-3
Hull Thickness:	30mm
Road Range:	500 km
Max Speed	
Water:	10 km/hr
Paved Road:	60 km/hr
Fording:	Amphibious
Verticle Obstacle:	.87 m
Trench:	2.9 m
Climb Slope:	38 degrees
Other:	AT-3 ATGM, turret similar to PT-76 with several modifications



T34/85

Type:	WWII vintage medium tank
Armament:	85mm main gun
Max Range:	15,560 m
Effective Range:	900 m
Rate of Fire:	3-4 rds/min
Stabilization:	No
Ammunition:	HE-T, HEAT, HVAP-T, AP-T, APC-T
Armor Penetration	
at 1,000 m:	155mm (HVAP-T), 120mm (AP-T), 300mm (HEAT, any range)
Basic Load:	56 rds
Thickness:	
Hull:	45mm
Turret Frontal:	75mm
Road Range:	300 km
Max Speed	
Paved Road:	55 km/hr
Fording:	1.3 m (5.5 m with snorkel)
Verticle Obstacle:	.73 m
Trench:	2.3 m
Climb Slope:	37 degrees
Other:	4 man crew, 7.62mm machinegun, main gun elevation 5 to 25 degrees



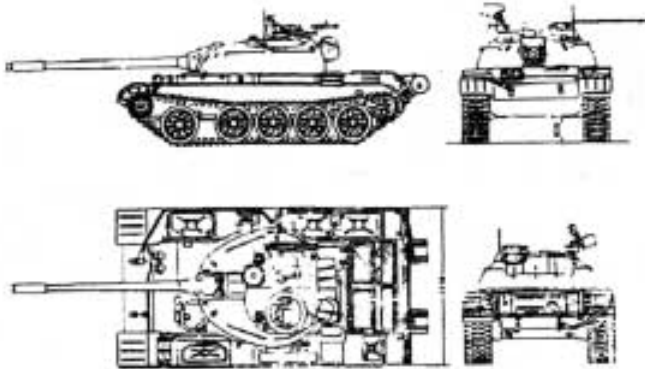
T-54

Type:	Medium tank
Armament:	100mm rifle-bored main gun
Max Range:	16,800 m
Effective Range:	1,500 m
Rate of Fire:	3 rds/min
Stabilization:	Yes
Ammunition:	HE-FRAG, HEAT, APDS, AP-T
Armor Penetration	
at 1,000 m:	180mm (AP-T), 300mm (HEAT, any range)
Basic Load:	43 rds
Thickness:	
Hull:	15-100mm
Turret Frontal:	140-180mm
Road Range:	400 km (600 km with tanks)
Max Speed	
Paved Road:	48 km/hr
Fording:	1.4 m (5.5 m with snorkel)
Verticle Obstacle:	.8 m
Trench:	2.7 m
Climb Slope:	30 degrees
Other:	12.7mm and 7.62mm machineguns; IR driver, gunner, and commander



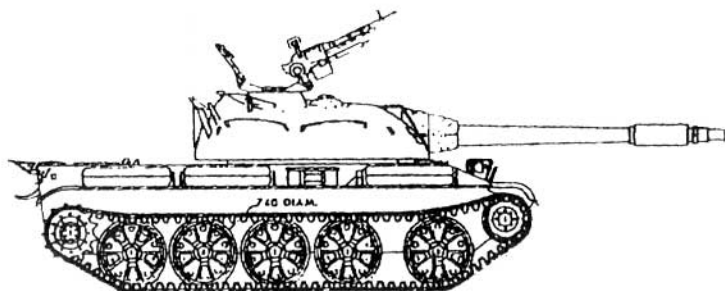
T-55

Type:	Medium tank
Armament:	100mm main gun
Max Range:	16,800 m
Effective Range:	1,500 m
Rate of Fire:	3 rds/min
Stabilization:	Yes
Ammunition:	HE-FRAG, HEAT, APDS, AP-T, APC-T
Armor Penetration at 1,000 m:	180mm (AP-T and APC-T), 390mm (HEAT, any range)
Basic Load:	43 rds
Thickness:	
Hull:	15-100mm
Turret Frontal:	140-180mm
Road Range:	400 km (650 km with tanks)
Max Speed	
Paved Road:	50 km/hr
Fording:	1.4 m (5.5 m with snorkel)
Verticle Obstacle:	.8 m
Trench:	2.7 m
Climb Slope:	30 degrees
Other:	12.7mm and 7.62mm machineguns; IR driver, gunner, and commander



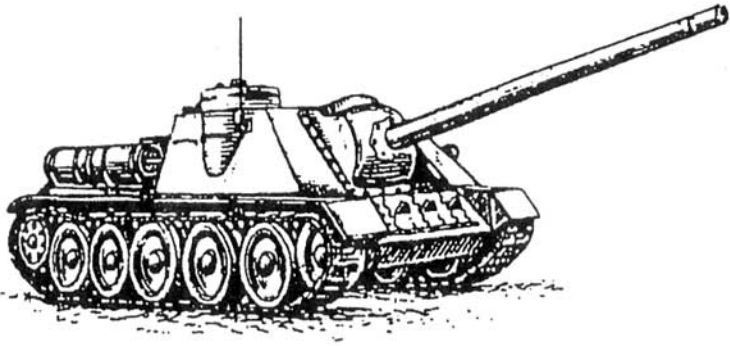
TYPE-59

Type:	Medium tank
Armament:	100mm rifle-bored main gun
Max Range:	16,800 m
Effective Range:	1,500 m
Rate of Fire:	3 rds/min
Stabilization:	Yes
Ammunition:	HE-FRAG, HEAT, APDS, AP-T
Armor Penetration	
at 1,000 m:	180mm (AP-T), 300mm (HEAT, any range)
Basic Load:	43 rds
Thickness:	
Hull:	15-100mm
Turret Frontal:	140-180mm
Road Range:	400 km (600 km with tanks)
Max Speed	
Paved Road:	48 km/hr
Fording:	1.4 m (5.5 m with snorkel)
Verticle Obstacle:	.8 m
Trench:	2.7 m
Climb Slope:	30 degrees
Other:	12.7mm and 7.62mm machineguns; IR driver, gunner, and commander



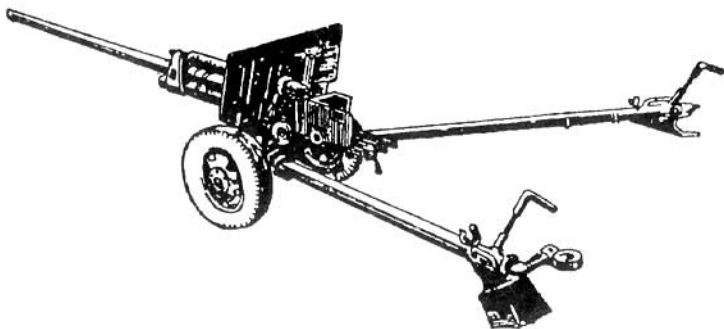
T-62 (CH'ONMA-HO)

Type:	Medium tank
Armament:	115mm main gun
Max Range:	12,200 m
Effective Range:	1,870 m
Rate of Fire:	3-5 rds/min
Stabilization:	Yes
Ammunition:	Frag-HE, HEAT, APFSDF-T
Armor Penetration	
at 1,000 m:	495mm (HEAT), 360mm (APFSDF-T)
Basic Load:	40 rds
Thickness:	
Hull:	15-100mm
Turret Frontal:	200mm
Road Range:	450 km
Max Speed	
Dirt Road:	35 km/hr
Paved Road:	50 km/hr
Fording:	1.4 m (5 m with snorkel)
Verticle Obstacle:	.8 m
Trench:	2.85 m
Climb Slope:	30 degrees
Other:	7.62mm machinegun, some may have 12.7mm machinegun, smoke, can be fitted with mine clearing device



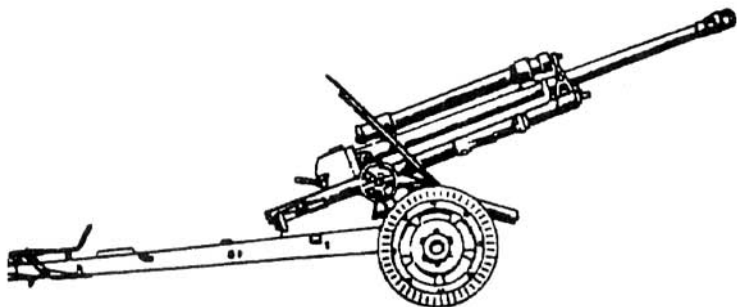
SU-100

Type:	Assault tank
Armament:	100mm main gun
Max Range:	15,650 m
Effective Range:	800 m
Rate of Fire:	7 rds/min
Ammunition:	APHE, HEAT
Armor Penetration	
at 1,000 m:	185mm (APHE), 380mm (HEAT)
Road Range:	300 km
Max Speed	
Paved Road:	50 km/hr
Other:	Elevation -2 to 17 degrees



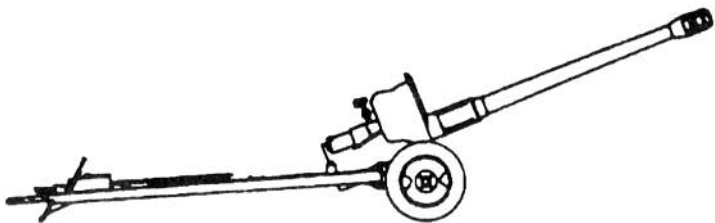
M-1943 (ZIS-2)

Type:	Antitank gun
Caliber:	57mm
Max Effective Range:	8,400 m
Rate of Fire:	25 rds/min
Armor Penetration	
at 500 m:	106mm (AP), 140mm (HVAP)
Elevation:	-5 to 25 degrees
Traverse:	54 degrees
Other:	Distinguished by its long thin tube with no muzzle brake



M-1942 (ZIS-3)

Type:	Antitank gun
Caliber:	76mm
Max Effective Range:	1,000 m
Rate of Fire:	15-20 rds/min
Armor Penetration at 1,000 m:	61mm (AP), 58mm (HVAP), 120mm (HEAT)
Elevation:	-5 to 37 degrees
Traverse:	54 degrees
Other:	Double baffle muzzle brake, also designated Chinese Type-54



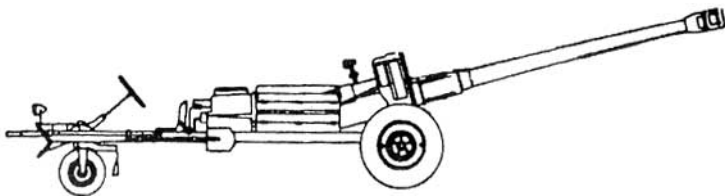
D-44

Type:	Antitank gun
Caliber:	85mm
Max Effective Range:	950 m (APHE), 1,150 m (HVAP), 15,700 m (HE)
Rate of Fire:	15-20 rds/min
Armor Penetration at 1,000 m:	100-110mm
Elevation:	17 to 35 degrees
Traverse:	54 degrees
Other:	Adaptation of T-34 tank main gun, basic unit of fire 140 rds, double baffle muzzle brake

LINE DIAGRAM UNAVAILABLE

SD-44

Type:	Antitank gun
Caliber:	85mm
Max Effective Range:	950 m (APHE), 1,150 m (HVAP), 15,700 m (HE)
Rate of Fire:	10-15 rds/min
Other:	Propelled by 14hp engine, 25 km/hr road, 10 km/hr cross-country, made for use by airborne units



D-48

Type: Antitank gun
Caliber: 85mm
Max Effective Range: 1,200 m (HVAP), 18,900 m (HE)
Rate of Fire: 15 rds/min (8 rds/min sustained)
Other: Long rifled barrel, basic unit of fire 150 rds



M-1944 (BS-3)

Type: Antitank gun
Caliber: 100mm
Max Effective Range: 900 m (HEAT), 1,100 m (AP), 21,000 m (HE)
Rate of Fire: 8-10 rds/min (1-2 rds/min sustained)
Armor Penetration: Estimated at up to 180mm (AP), 390mm (HEAT) (uses same ammunition as SU-100 and T-54 which would allow for considerable increase in penetration)
Other: Basic unit of fire is 60 rds

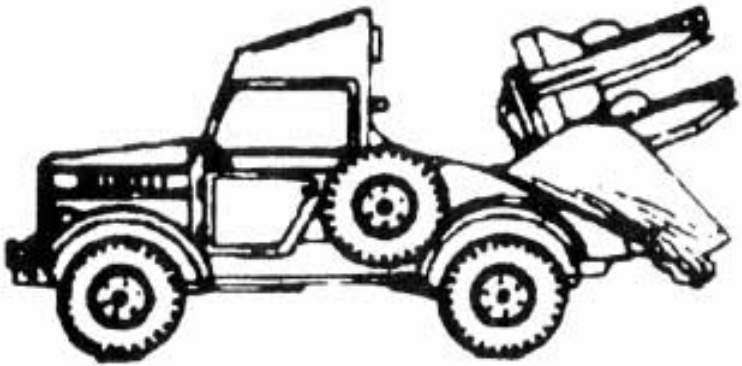
ATGM SYSTEMS

North Korea has the Russian designed AT-1/SNAPPER, AT-3/SAGGER, AT-4/SPIGOT (A and B), and probably the AT-5/SPANDREL in its inventory. North Korea has the capability to produce the AT-3. ATGMs are used in the crew-portable role (AT-3), the vehicle-borne role (AT-1, AT-3, AT-4, and possibly AT-5), and possibly in the heli-borne role (AT-3).

ATGM SYSTEM CHARACTERISTICS

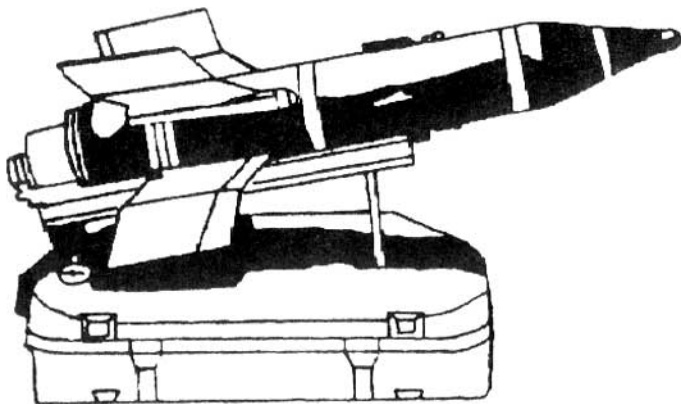
SYSTEM	Min/Max Range	Armor Penetration	Guidance Command Link	Launch Platforms
AT-1/SNAPPER	600/2000	380	MCLOS/Wire	Vehicle
AT-3/SAGGER	400/3000	500	MCLOS & SACLOS/Wire	Ground, LAV, Helicopter
AT-4ASPIGOT	75/2000	500	SACLOS/Wire	Ground, LAV
AT-4BSPIGOT	75/2500	550	SACLOS/Wire	Ground, LAV
AT-5/SPANDREL	70/4000	650	SACLOS/Wire	Ground, LAV

MCLOS: Manual Command to Line of Sight
 SACLOS: Semi-Automatic Command to Line of Sight



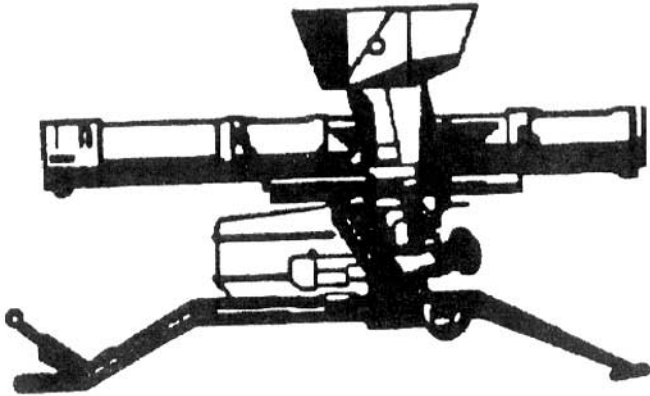
AT-1/SNAPPER

The AT-1 is a MCLOS ATGM system launched from jeep-type wheeled vehicles. The AT-1 has a warhead capable of penetrating 380mm of armor and a range of 2,000 meters. The AT-1 is easily recognized by its wide wing span and pointed nose. The AT-1 is obsolescent and is probably found only in reserve units. The Russian name for this system is SHMEL (Bumblebee).



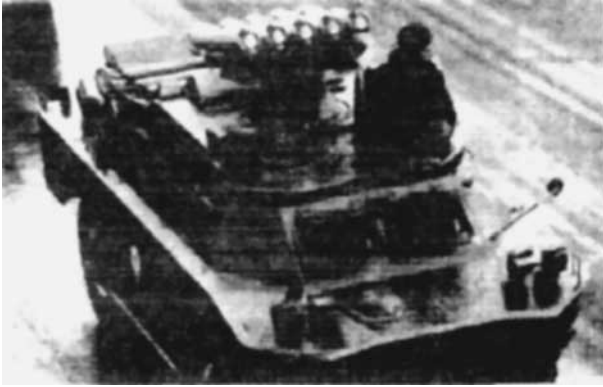
AT-3/SAGGER

The AT-3 is both a MCLOS and a SACLOS guided ATGM that can be fired from a variety of launch platforms. The MCLOS AT-3 includes the man-portable (suitcase) and light tank mounted versions. The AT-3 may be deployed in very limited numbers on helicopters. Any heliborne versions almost certainly will use MCLOS guidance. Dedicated ATGM vehicles are likely to be equipped with SACLOS AT-3 systems. The missile has a 3,000 m range and a wire command link. The AT-3's armor penetration has been estimated in excess of 400mm. The AT-3 is the most widely deployed ATGM system in North Korea. It is believed that the AT-3 has been in production in North Korea since the early 1980s. The Russian name for the AT-3 is MALYUTKA (Little Baby).



AT-4/SPIGOT

The AT-4 is a SACLOS guided ATGM that is launched from a crew portable tripod placed on the ground or mounted on a light armored vehicle. The AT-4 system was first identified as being in the North Korean inventory during the April 1992 military parade in Pyongyang. The same launcher is used when firing both the AT-4 and the AT-5. Two versions of the AT-4, the AT-4A and AT-4B, are available but it is unknown which version North Korea has. The AT-4A and AT-4B can penetrate 500mm and 550mm of armor and have ranges of 2,000 and 2,500 m, respectively. The Russian names for this system are FAGOT (Bassoon) and FACTORIA.



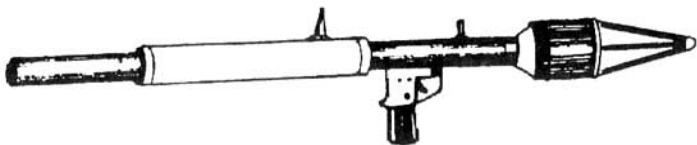
AT-5/SPANDREL

The AT-5 is a SACLOS guided ATGM that is launched from the same launcher as the AT-4 (portable ground or LAV). The AT-5 has a warhead that can penetrate 650mm of armor and a maximum range of 4,000 m. The Russian name for the AT-5 is KONKURS (Contest)



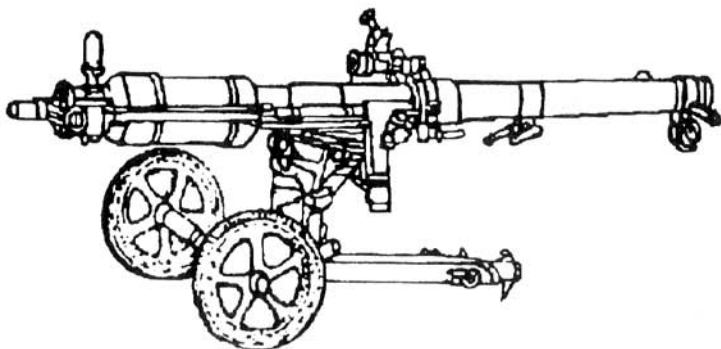
RPG-7

Type:	85mm warhead, 40mm launch tube, antitank grenade launcher
Ammunition:	Variety of fin stabilized rounds, including rocket assisted HEAT round
Max Range:	920 m
Max Effective Range:	500 m stationary target, 300 m moving target
Rate of Fire:	4-6 rds/min
Armor Penetration:	330mm (HEAT), armor penetration not affected by range due to use of shaped charge, severely affected by angle of impact
Other:	Reusable, shoulder fired, hit probability reduced 50% in crosswinds as low as 7 mph, folding version (RPG-7D), RPG-7V can be fitted with telescope, IR sight, and passive night sight



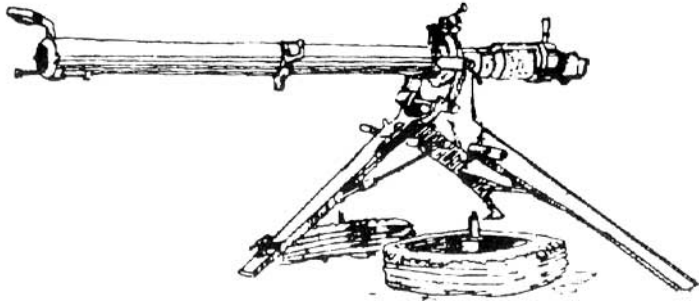
RPG-2

Type:	82mm warhead, 40mm launch tube, antitank grenade launcher
Ammunition:	HEAT
Max Effective Range:	100 m
Rate of Fire:	4-6 rds/min
Armor Penetration:	152-180mm
Other:	Reusable, shoulder fired



B-10 RCL

Type:	82mm smoothbore antitank weapon
Ammunition:	HE, HEAT (fin stabilized)
Max Range HE Round:	7,300 m
Max Effective Range:	400 m
Rate of Fire:	6-7 rds/min
Armor Penetration:	240mm (HEAT)
Other:	Towed on 2 wheels which are removed to fire, but can be fired on wheels, telescopic sight for direct fire, panoramic sight for indirect fire, both sights can be illuminated for night firing, bar muzzle allows B-10 to be dragged into position, Chinese T-65 is a copy of B-10



B-11 RCL

Type:	107mm smoothbore antitank weapon
Ammunition:	HEAT, HE (fin stabilized)
Max Range HE Round:	7,300 m
Max Effective Range:	450 m
Rate of Fire:	5-6 rds/min
Armor Penetration:	380mm (HEAT)
Other:	HE round for indirect fire, towed by muzzle on two wheeled carriage

OTHER ARTILLERY EQUIPMENT

The following artillery systems are known to be in the North Korean inventory. No open source data was available at handbook publication date.

120mm SP combination gun M-1992

122mm SP gun M-1981

122mm SP howitzer M-1991

130mm SP gun M-1975

130mm SP gun M-1992

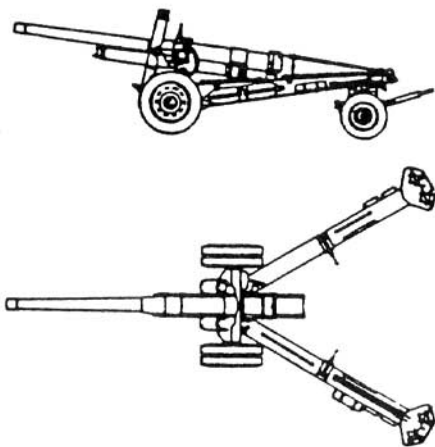
152mm SP gun-howitzer M-1974

152mm gun-howitzer M-1985



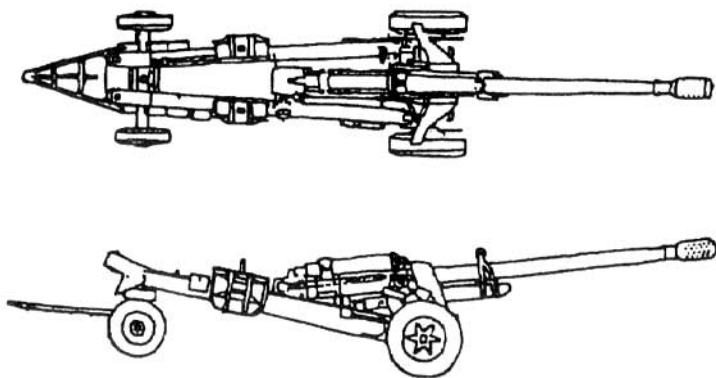
M-30 (M-1938)

Type:	122mm towed howitzer
Max Range:	11,800 m
Max Rate of Fire:	6 rds/min
Elevation:	-3 to 65 degrees
Traverse:	49 degrees
Other:	No muzzle brake, used in the Korean War



A-19 (M-1937)

Type:	122mm towed gun
Max Range:	20,400 m
Max Rate of Fire:	5 rds/min
Elevation:	-5 to 69 degrees
Traverse:	58 degrees
Other:	Developed in 1931, improved and fully fielded in 1937, finished production in the late 1940s, and used in the Korean War, estimated 160mm armor penetration, thick gun tube with muzzle brake



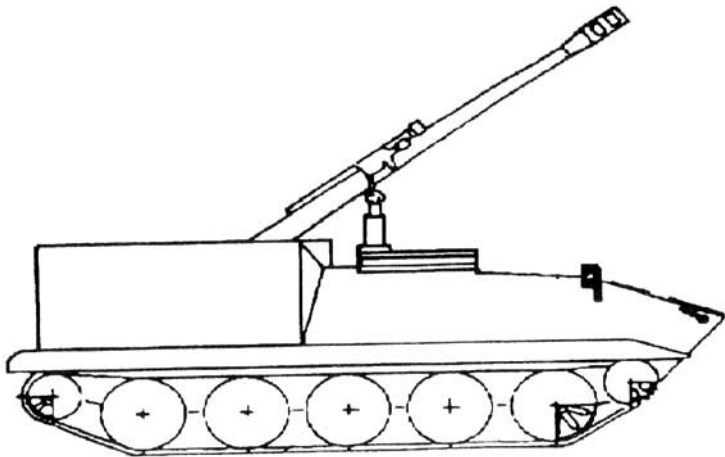
M-46

Type:	130mm towed gun
Max Range:	27,500 m
Max Rate of Fire:	8 rds/min (5 rds/min sustained)
Elevation:	-2.5 to 45 degrees
Traverse:	50 degrees
Other:	Accurate multipurpose gun that can be used as both a field artillery piece and a coastal defense weapon, 239mm armor penetration, long barrel, pepper pot muzzle brake



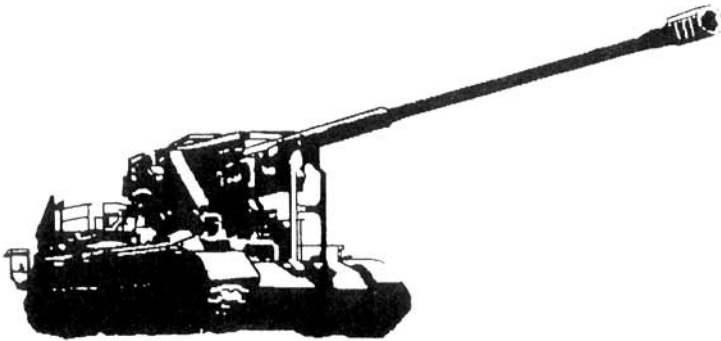
D-20

Type:	152mm towed howitzer
Max Range:	17,000 m
Max Rate of Fire:	6 rds/min (4 rds/min sustained)
Elevation:	-5 to 45 degrees
Traverse:	45 degrees
Other:	Armor penetration is 400mm with HEAT-SS, circular firing jack and 2 caster wheels make it possible to swiftly rotate entire D-20 360 degrees, short gun tube, double baffle muzzle brake



M-1977

- Type:** 122mm self propelled (SP) gun/howitzer (uses 122mm D-30 mounted on vehicle superstructure)
- Max Range:** 15,300 m (21,900 m rocket assisted projectiles)
- Max Rate of Fire:** 7-8 rds/min (1.7-4 rds/min sustained)
- Max Speed:** 40 km/hr approx
- Road Range:** 400 km approx
- Other:** Produced in North Korea, sides enclosed, top open



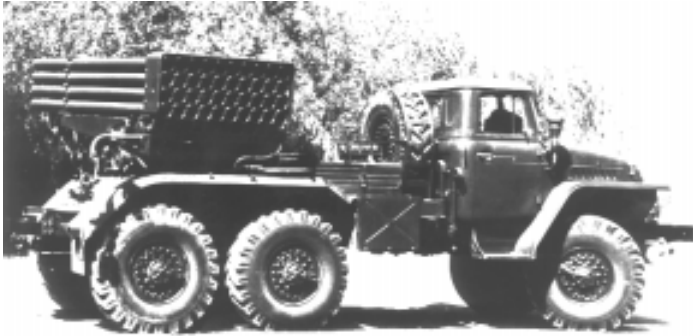
M-1978 (KOKSAN)

Type:	170mm self propelled (SP) gun
Max Range:	40,000 m
Max Rate of Fire:	1-2 rds per 5 min (estimate)
Max Speed:	40 km/hr approx
Road Range:	300 km approx
Other:	KOKSAN gun is probably mounted on a T-54 chasis



12 ROUND 107MM ROCKET LAUNCHER

Type:	107mm multiple rocket launcher (MRL)
Max Range:	8,500 m
Rockets:	HE and incendiary
Reload Time:	3 min
Elevation:	-4 to 58 degrees
Traverse:	32 degrees
Other:	12 launch tubes in array of 3 rows of 4 tubes (two other SP versions exists: one with 18 tubes and one with 24 tubes), can be towed or mounted on a 4 leg stand, 12-tube launcher can also be mounted on any suitable wheeled or tracked vehicle



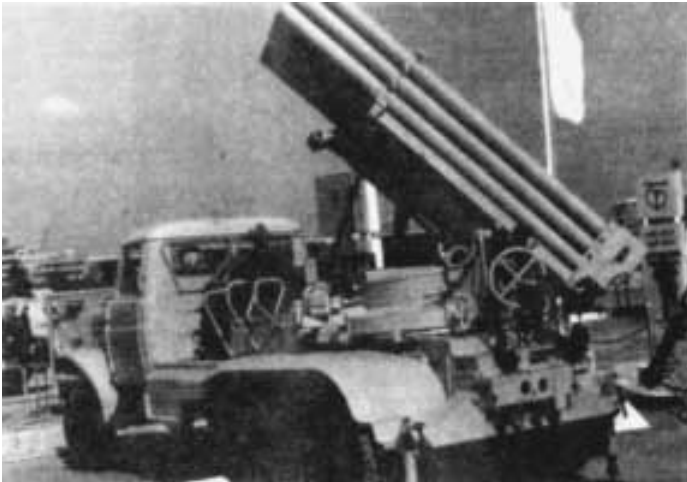
BM-21

Type:	122mm multiple rocket launcher (MRL)
Max Range:	20,380 m
Rockets:	Frag-HE, incendiary, smoke, possible chem
Rate of Fire:	.5 sec per rocket
Reload Time:	8 min
Elevation:	0 to 55 degrees
Other:	40 launch tubes in array of 4 rows of 10 tubes, each tube is grooved to provide spinning motion (a combination of spin and fin stabilization), rocket provides closely grouped fire that can be operated and fired from truck cab or fired remotely from up to 60 ft away, BM-21 and other 122mm rocket launchers can fire all 122mm rockets designed to fit in Soviet-derived 122mm launchers (including those that can achieve ranges of 30,000 to 36,000 meters), mounted on a URAL 375D (6x6) truck

LINE DIAGRAM UNAVAILABLE

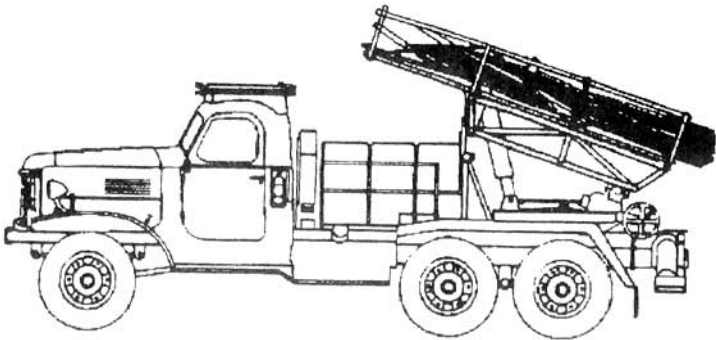
M-1985

Type: 122mm multiple rocket launcher (MRL)
Other: 40 rd, North Korean produced, mounted on Isuzu truck



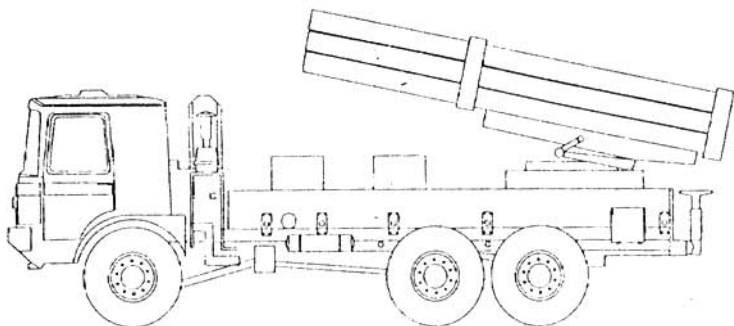
BM-11

Type: 122mm multiple rocket launcher (MRL)
Max Range: 20,500 m (estimated)
Rockets: All standard Russian, Chinese, and North Korean 122mm
Rate of Fire: 30 rds per 15 sec
Reload Time: 8-9 min
Other: 2 banks of 15 tubes mounted on single turntable, North Korean derivative of BM-21, mounted on URAL-375D or Japanese truck



BMD-20

Type:	200mm multiple rocket launcher (MRL)
Max Range:	19,000 m
Rocket:	Frag-HE
Rate of Fire:	4 rds per 4 sec
Reload Time:	6-10 min
Elevation:	9 to 60 degrees
Traverse:	20 degrees
Other:	Fires fixed fin rockets from a single row of 4 large, square, open framework launch tubes, mounted on ZIL-157 6x6 truck



240MM ROCKET LAUNCHER M-1985 & 240MM ROCKET LAUNCHER M-1991

The North Koreans have produced two different 240mm rocket launchers, the 12 round M-1985 and 22 round M-1991. The M-1985 rocket pack is easily identified as it has 2 rows of 6 tubes and is mounted on a cab behind engine chassis. The M-1991 is mounted on a cab over engine chassis. Both launch packs could be adapted to any suitable heavy cross-country truck.

LINE DIAGRAM UNAVAILABLE

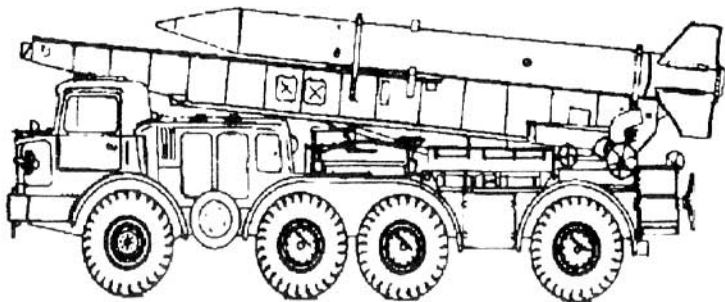
FROG-3

Type:	Free Rocket Over Ground (FROG) artillery system
Range:	10,000 to 35,000 m
Warhead:	454kg
Other:	Unguided, spin stabilized, solid fuel, 30-40 mins to prepare missile for firing, 60-70 mins to reload, mounted on wheeled chassis

LINE DIAGRAM UNAVAILABLE

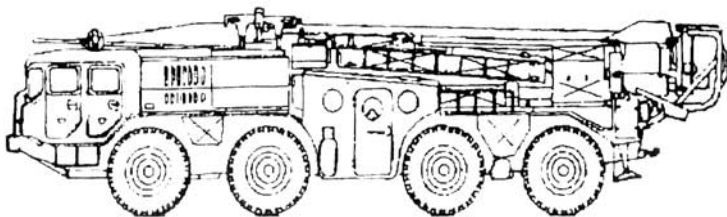
FROG-5

Type: Free Rocket Over Ground (FROG) artillery system
Range: 10,000 to 61,000 m
Warhead: Up to 800lbs
Other: Unguided, spin stabilized, solid fuel, 30-40 mins to prepare missile for firing, 60-70 mins to reload, mounted on wheeled chassis, vehicle can travel up to 44 km/hr



FROG-7

Type: Free Rocket Over Ground (FROG) artillery system
Range: 70,000 m
Warhead: Up to 450kg, HE, possibly chemical
Other: Unguided, spin stabilized, solid fuel, 20-30 mins to prepare for firing, system consists of a Transporter-Erector-Launcher (TEL) vehicle (ZIL-135 8x8) and a similar separate vehicle used to transport 3 additional rockets



SCUD-B (SS-1C)

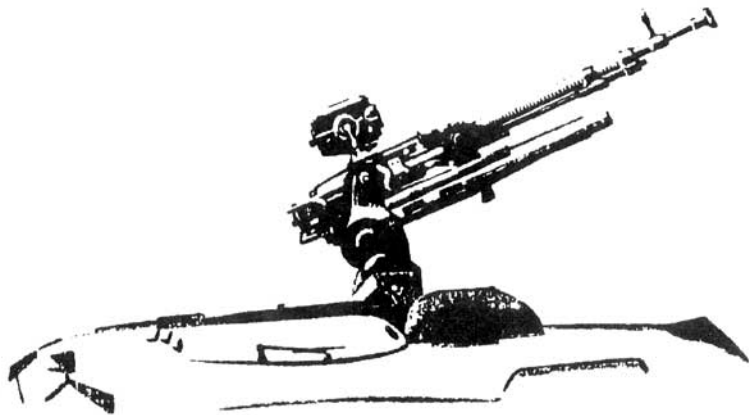
Type:	Surface-to-surface guided ballistic missile
Range:	Approximately 300 km
Warhead:	1,000kg, HE, chemical
CEP:	1 km
Other:	8 wheeled TEL, reload vehicle, fire control center van, communication vehicle, 1-1.5 hrs to prepare for firing

LINE DIAGRAM UNAVAILABLE

SCUD-C AND NODONG

Type: Surface-to-surface guided ballistic missile

It has been reported in open source documents that North Korea has developed a SCUD-C ballistic missile, thought to be an enhanced-range version of the SCUD-B with an alleged warhead of 700kg. The first of three successful test firings of the SCUD-C was reported to have been completed in June 1990. Recent open source reporting suggests that North Korea is developing the NODONG-1 missile. The NODONG-1 has a reported estimated range of 950-3,000 km, which includes not only the entire Korean Peninsula, but also Japan.



M-38/46 DSHK

Type:	12.7x108mm heavy machinegun
Tactical Antiair (AA) Range:	1,000 m
Rate of Fire:	540-600 rds/min
Azimuth:	Unlimited
Elevation:	-10 to 85 degrees
Fire Control:	Mechanical lead computing sight
Ammunition:	API, API-T
Other:	Manufactured in Russia and China, towed tripod mount



ZGU-1 (Mountain Pack)

Type:	14.5x114mm heavy AA machinegun
Tactical Antiair	
(AA) Range:	1,400 m
Rate of Fire:	550-600 rds/min
Azimuth:	Unlimited
Elevation:	-20 to 90 degrees
Fire Control:	Optical reflex sight (AA), telescope (ground)
Ammunition:	API-T, HEI, I-T
Other:	Manufactured in North Korea, Russia and China



ZPU-2

Type:	14.5x114mm twin heavy AA machinegun
Tactical Antiair (AA) Range:	1,400 m
Rate of Fire:	550-600 rds/min
Azimuth:	Unlimited
Elevation:	-15 to 90 degrees
Fire Control:	Optical mech computing sight (AA), telescope (ground)
Ammunition:	API, API-T, HEI, I-T
Other:	Manufactured in North Korea, Russia and China



ZPU-4

Type:	Towed 14.5x114mm quad heavy AA machinegun
Tactical Anti-air (AA) Range:	1,400 m
Rate of Fire:	550-600 rds/min per barrel
Azimuth:	Unlimited
Elevation:	8.5 to 90 degrees
Fire Control:	Optical mech computing sight (AA), telescope (ground)
Ammunition:	API, API-T, HEI, I-T
Other:	Manufactured in North Korea, Russia and China (Type-56)

LINE DIAGRAM UNAVAILABLE

M-1983

Type:	Quad 14.5mm SP heavy machinegun
Tactical Anti-air (AA) Range:	1,400 m
Maximum Vertical Range:	3,600 m
Horizontal Range:	5,800 m
Rate of Fire:	550-600 rds/min per barrel
Azimuth:	Unlimited
Elevation:	-5 to 85 degrees
Fire Control:	Radar, optical speed ring
Ammunition:	API, API-T, HEI
Other:	Manufactured in North Korea, main battle tank chassis, recoil operation, belt fed, 4 barrels

LINE DIAGRAM UNAVAILABLE

M-1990

Type:	30mm gatling gun
Tactical Anti-air (AA) Range:	3,000 m
Rate of Fire:	2,400-3,400 rds/min
Azimuth:	Unlimited
Elevation:	-5 to 85 degrees
Fire Control:	Radar, speed ring
Ammunition:	HEI-T (30x210mm)
Self Destruct Time:	7 to 10 secs
Self Destruct Range:	3,600-4,500 m
Other:	Manufactured in North Korea, 4 wheeled carriage (towed), 4 barrels, externally driven by electric motor

LINE DIAGRAM UNAVAILABLE

M-1992

Type:	Twin 30mm SP automatic cannon
Tactical Antiair (AA) Range:	3,000 m
Rate of Fire:	800 rds/min per barrel
Azimuth:	Unlimited
Elevation:	-5 to 85 degrees
Fire Control:	Radar, optical speed ring
Ammunition:	HEI-T (30x210mm)
Self Destruct Time:	7 to 10 secs
Self Destruct Range:	3,600-4,500 m
Other:	Manufactured in North Korea, gas operated, ZSU-23-4 variant chassis, max road speed 50 km/hr



M-1939

Type:	37mm automatic cannon
Tactical Anti-air (AA) Range:	2,500 m
Rate of Fire:	160-180 rds/min
Ammunition:	HEI-T (37x252mm)
Self Destruct Time:	8 to 12 secs
Self Destruct Range:	3,700-4,700 m
Other:	Manufactured in Russia and China (Type-55), 4 wheeled carriage (towed), 1 barrel, 5 round clip, recoil operation



Type-65

Type:	Twin 37mm AA gun
Tactical Antiair	
(AA) Range:	3,500 m
Rate of Fire:	150-180 rds/min per barrel
Azimuth:	Unlimited
Elevation:	-10 to 85 degrees
Fire Control:	Optical mech computing sight
Ammunition:	HEI-T (37x252mm)
Self Destruct Time:	9 to 12 secs
Self Destruct Range:	4,000-4,750 m
Other:	Manufactured in China, recoil operated, 4 wheeled carriage (towed)



Type-74

Type:	37mm twin automatic cannon
Tactical Anti-air	
(AA) Range:	3,500 m
Rate of Fire:	220-240 rds/min per barrel
Azimuth:	Unlimited
Elevation:	-5 to 87 degrees
Fire Control:	Optical mech computing sight, radar
Ammunition:	HEI-T (37x252mm)
Self Destruct Time:	9 to 12 secs
Self Destruct Range:	4,000-4,700 m
Other:	Manufactured in China, recoil operated, 4 wheeled carriage (towed)

LINE DIAGRAM UNAVAILABLE

SP AA GUN

Type:	37mm SP AA gun
Tactical Anti-air (AA) Range:	2,500 m
Rate of Fire:	150-180 rds/min per barrel
Azimuth:	Unlimited
Elevation:	-5 to 85 degrees
Fire Control:	Optical mech computing sight
Ammunition:	HEI-T (37x252mm)
Self Destruct Time:	9 to 12 secs
Self Destruct Range:	4,000-4,700 m
Other:	Manufactured in North Korea, recoil operated, 5 round clip, armored personnel carrier (tracked) carriage



S-60

Type:	57mm automatic AA gun
Tactical Anti-air	
(AA) Range:	4,000 m w/o radar, 6,000 m w/radar
Rate of Fire:	105-120 rds/min
Azimuth:	Unlimited
Elevation:	-4 to 87 degrees
Fire Control:	Optical mech computing sight, radar
Ammunition:	HEI-T (57x348mm)
Self Destruct Time:	13 to 17 secs
Self Destruct Range:	6,000-7,200 m
Other:	Manufactured on a 4 wheeled towed carriage, Chinese variant is the Type 59



TWIN 57MM SELF-PROPELLED AA GUN

Type:	57mm automatic AA gun
Tactical Anti-air	
(AA) Range:	4,000 m
Rate of Fire:	150-180 rds/min per barrel
Azimuth:	Unlimited
Elevation:	0 to 87 degrees
Fire Control:	Optical mechanical computing sight
Ammunition:	HEI-T (57x348mm)
Self Destruct Time:	13 to 17 secs
Self Destruct Range:	6,000-7,200 m
Other:	Mounted on a modified YW 531 APC, DPRK produced

LINE DIAGRAM UNAVAILABLE

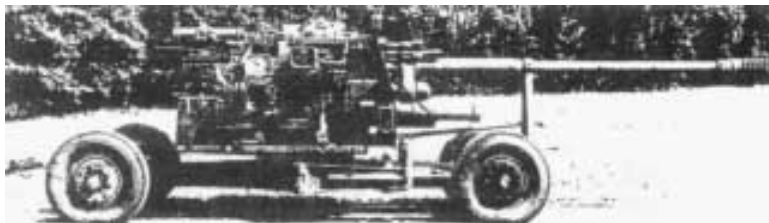
TWIN 57MM AA GUN

Type:	57mm automatic AA gun
Tactical Antiair	
(AA) Range:	4,000 m w/o radar, 6,000 w/radar
Rate of Fire:	105-120 rds/min per barrel
Azimuth:	Unlimited
Elevation:	-4 to 87 degrees
Fire Control:	Optical mechanical computing sight
Ammunition:	HE-T (57x348mm)
Self Destruct Time:	13 to 17 secs
Self Destruct Range:	6,000-7,200 m
Other:	Mounted on a 4 wheeled towed carriage, DPRK produced



KS-12

Type:	85mm single shot AA gun
Tactical Anti-air	
(AA) Range:	4,000 m w/o radar, 10,200 w/radar
Rate of Fire:	15-20 rds/min
Azimuth:	720 degrees
Elevation:	-3 to 82 degrees
Fire Control:	Optical telescope, radar
Ammunition:	HE-T, APC-T (85x__mm)
Self Destruct Time:	1 to 33 secs
Self Destruct Range:	800-10,200 m
Other:	Mounted on a 4 wheeled towed carriage, Chinese variant is Type-72



KS-19

Type:	100mm single shot AA gun
Tactical Anti-air	
(AA) Range:	4,000 m w/o radar, 12,600 w/radar
Rate of Fire:	15 rds/min
Azimuth:	Unlimited
Elevation:	-3 to 85 degrees
Fire Control:	Optical telescope, radar
Ammunition:	HE-T, APC-T (100x__mm)
Self Destruct Time:	1 to 33 secs
Self Destruct Range:	800-12,600 m
Other:	Mounted on a 4 wheeled towed carriage, Chinese variant is Type-59



SA-2 B/C/D/E/F GUIDLINE

The SA-2 is a somewhat mobile, medium to high level guided SAM system.

Maximum

Speed:	4.0 B/C/D, 4.5 E/F Mach
Effective Altitude:	27 B/C/F, 40 D/E km
Effective Range:	35 B/F, 44 C, 50 D/E km
Warhead:	HE 200kg (295kg SA-2E)
Fuze:	Contact, proximity, or command
Kill Radius:	65 m

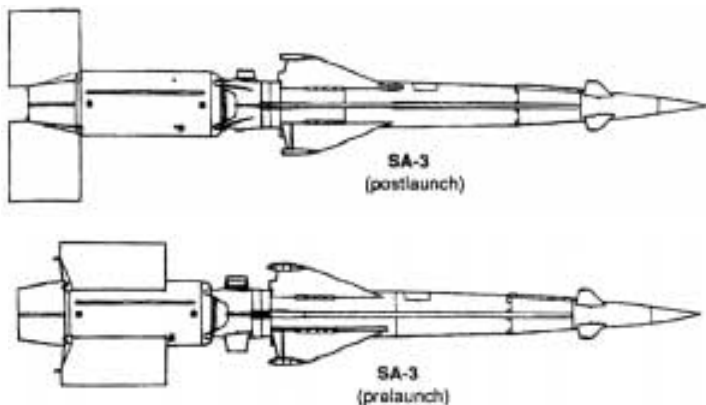
LINE DIAGRAM UNAVAILABLE

HQ-2B/F/J/P (SA-2 CHINA)

The HQ-2B/J is a Chinese reversed engineering version of the SA-2.

Maximum

Speed:	3.5-4 Mach
Effective Altitude:	27 km
Effective Range:	35 2B, 50 2J km
Warhead:	HE 188kg
Fuze:	Contact, proximity, or command
Kill Radius:	Unknown

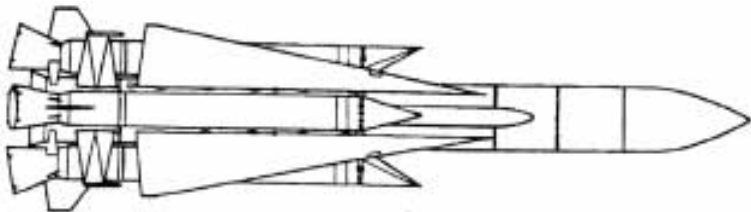


SA-3 GOA

The SA-3 B/C is a somewhat mobile low to medium level guided SAM system.

Maximum

Speed:	3.5 Mach
Effective Altitude:	22 km
Effective Range:	25 km
Warhead:	HE 60kg
Fuze:	Proximity doppler radar
Kill Radius:	12.5 m



SA-5 GAMMON

The SA-5 is a long range, medium to high altitude strategic semi-active guided SAM system.

Maximum

Speed:	4 Mach
Effective Altitude:	30.5 km
Effective Range:	300 km
Warhead:	HE 215kg
Fuze:	Proximity and command
Kill Radius:	Unknown

LINE DIAGRAM UNAVAILABLE

HN-5/5A (SA-7 CHINA)

The HN-5 is the Chinese version of the SA-7 short range, man-portable, passive IR homing SAM.

Maximum

Speed:	1.5 Mach
Effective Altitude:	2,300 m (both)
Effective Range:	HN-5 — 4,200, HN-5A — 4,400 km
Warhead:	Unknown
Fuze:	Unknown
Kill Radius:	Unknown



SA-7B

The SA-7B is a short range, man-portable, shoulder-fired, fire and forget IR SAM.

Maximum

Speed:	1.7-1.95 Mach
Effective Altitude:	2,300 m
Effective Range:	4,200 m
Warhead:	HE 1.8kg
Fuze:	Contact and graze
Kill Radius:	Unknown

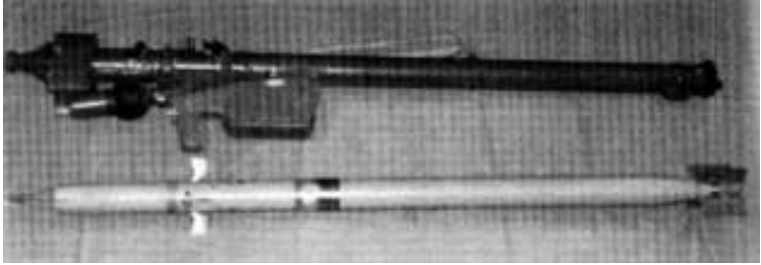


SA-14

The SA-14 is a short range, man-portable, shoulder-launched, fire and forget IR SAM.

Maximum

Speed:	2+ Mach
Effective Altitude:	5,500 m
Effective Range:	4,500 m
Warhead:	HE
Fuze:	Contact and graze
Kill Radius:	Unknown



SA-16

The SA-16 is an improvement over the SA-14. It has a bigger warhead, more speed, and more maneuverability.

Maximum

Speed:	2+ Mach
Effective Altitude:	3,500 m
Effective Range:	5,000 m
Warhead:	HE 2kg
Fuze:	Contact and graze
Kill Radius:	Unknown



STINGER

The Stinger is a short range, man-portable, shoulder-fired, passive IR homing SAM. North Korea may have obtained a limited number of these U.S. made SAMs.

Maximum

Speed:	2.2 Mach
Effective Altitude:	4,000 m
Effective Range:	6,000 m
Warhead:	HE 3kg
Fuze:	Contact
Kill Radius:	Unknown



CSA-3A



PGLM

No data is available on the above systems; however, they are believed to be in the NKA inventory.



TYPE 64 7.62MM PISTOL

The Type-64 is a DPRK copy of the old Browning Model 1900. This pistol is capable of taking a silencer.

Caliber:	7.62mm
Weight:	1kg (loaded)
Ammunition:	Ball
Max Effective Range:	50 m
Capacity:	8 rounds



TOKAREV TT-33 7.62MM PISTOL

The Tokarev is a recoil operated, magazine fed, automatic pistol.

Caliber:	7.62mm
Weight:	.94kg (loaded)
Ammunition:	Ball
Max Effective Range:	50 m
Capacity:	8 rounds



MAKAROV 9MM PISTOL

The Makarov can be recognized by the external hammer, the safety lever on the side, and the very compact design.

Caliber:	9mm
Weight:	.73kg (loaded)
Ammunition:	Ball
Max Effective Range:	50 m
Capacity:	8 rounds



AK-47 ASSAULT RIFLE

The AK-47 is a gas operated, rotary bolt, magazine fed, selective fire weapon. The Type-46 is a Chinese produced version of the AK-47, and the Type-58 is a DPRK version of the same weapon.

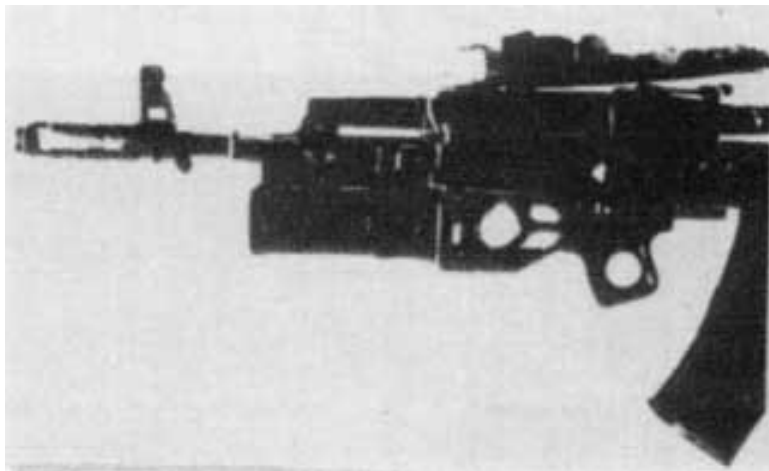
Caliber:	7.62mm
Weight:	4.81kg (loaded)
Ammunition:	Ball, tracer, API
Maximum	
Range:	2,500 m
Effective Range:	300 m
Cyclic Rate:	600 rpm



AK-74 ASSAULT RIFLE

The AK-74 is a gas operated, magazine fed, selective fire assault rifle.

Caliber:	5.45mm
Weight:	3.95kg (loaded)
Ammunition:	Ball, tracer, incendiary
Maximum	
Range:	3,150 m
Effective Range:	450 m
Cyclic Rate:	650 rpm



GP-25 GRENADE LAUNCHER

The GP-25 is a muzzle loaded, single shot, detachable 40mm underbarrel grenade launcher. It can be mounted on all variations of the Kalashnikov assault rifles.

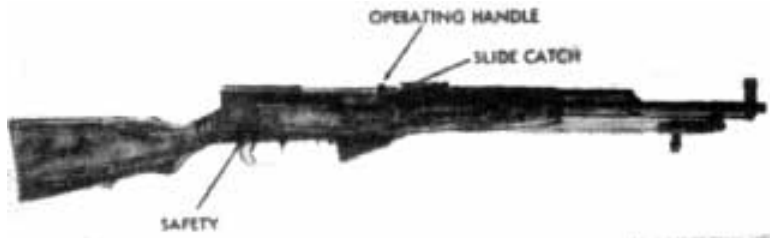
Caliber:	40mm
Weight:	3.95kg (loaded)
Ammunition:	HE
Maximum Range:	450 m



TYPE-68 (AKM) ASSAULT RIFLE

The Type-68 is a DPRK copy of the Russian AKM assault rifle. It does not have the rate reducer found on the AKM.

Caliber:	7.62mm
Weight:	3.6kg (loaded)
Ammunition:	Ball
Maximum	
Range:	2,500 m
Effective Range:	300 m
Cyclic Rate:	640 rpm



TYPE-56 SEMIAUTOMATIC CARBINE (SKS)

The Type-56 (SKS) features include a permanently attached folding bayonet, protruding 10 round internal magazine, high front sight, and a top mounted gas cylinder. Some variants of this weapon are modified to take a 30 round detachable magazine.

Caliber:	7.62mm
Weight:	4kg
Ammunition:	Ball
Maximum	
Range:	Unknown
Effective Range:	400 m
Cyclic Rate:	900 rpm



PPSH 1943 SUBMACHINEGUN (TYPE-50 CHINA/MODEL-49 DPRK)

The PPSH can be fired on either full or semiautomatic. It has a wood stock and uses a 71 round drum or a 35 round curved box magazine. However, the Type-50 only accepts the box magazine and the Model-49 only uses the drum magazine.

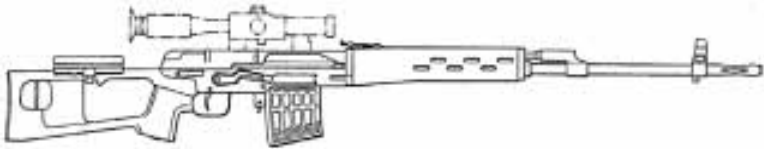
Caliber:	7.62mm
Weight:	3.5kg (unloaded)
Ammunition:	Ball
Maximum	
Range:	Unknown
Effective Range:	200 m
Cyclic Rate:	900 rpm



PPSM1943 SUBMACHINEGUN (TYPE-54 CHINA)

The PPS is a fully automatic weapon. It has a hinged stock which folds up and forward.

Caliber:	7.62mm
Weight:	3kg (unloaded)
Ammunition:	Ball
Maximum Range:	Unknown
Effective Range:	200 m
Cyclic Rate:	650 rpm



DRAGUNOV SNIPER RIFLE (SVD)

The Dragunov is a semiautomatic, gas operated rifle which feeds from a 10-round magazine. The SVD has a 4 power scope that has a battery illuminated reticle and an IR detection capability for night firing.

Caliber:	7.62mm
Weight:	4.7kg (loaded)
Ammunition:	Ball
Maximum	
Range:	3,500 m
Effective Range:	800 m
Cyclic Rate:	30 rpm



M1891/30 SNIPER RIFLE

The M1890/30 sniper rifle is an M1891/30 Mosin Nagant modified for a telescopic sight.

Caliber:	7.62mm
Weight:	5kg (loaded)
Ammunition:	Ball
Maximum	
Range:	3,500 m
Effective Range:	1,400 m w/4X scope
Cyclic Rate:	10 rpm



RPK-74 LIGHT MACHINEGUN

The RPM-74 is the machinegun version of the AK-74. The RPM-74 is equipped with a bipod and a longer magazine than the AK-74.

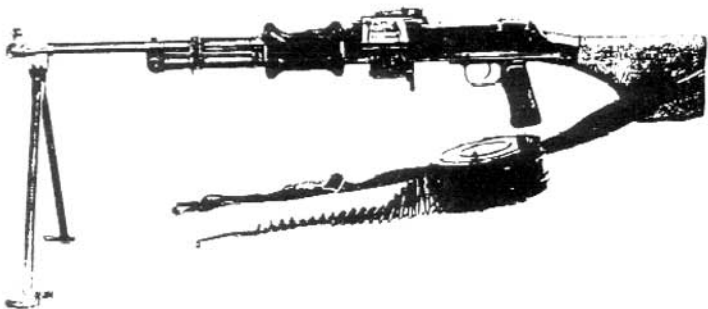
Caliber:	5.45mm
Weight:	5kg (loaded)
Ammunition:	Ball
Maximum	
Range:	2,500 m
Effective Range:	800 m
Cyclic Rate:	600 rpm



RPK LIGHT MACHINEGUN

The RPK is a gas operated, box or drum fed light machinegun.

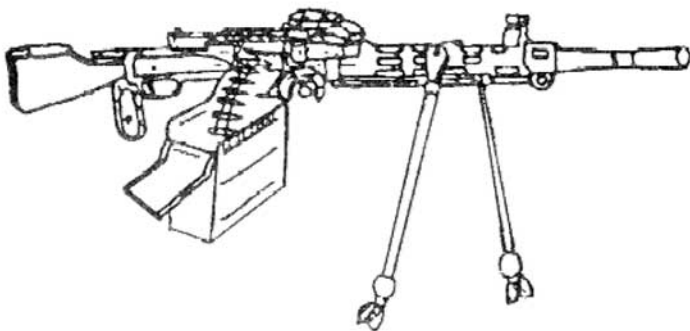
Caliber:	7.62mm
Weight:	5.6kg (empty)
Ammunition:	Ball, tracer, API
Maximum	
Range:	3,000 m
Effective Range:	800 m
Cyclic Rate:	600 rpm



RPD LIGHT MACHINEGUN

The RPD is a gas operated and belt fed light machinegun.

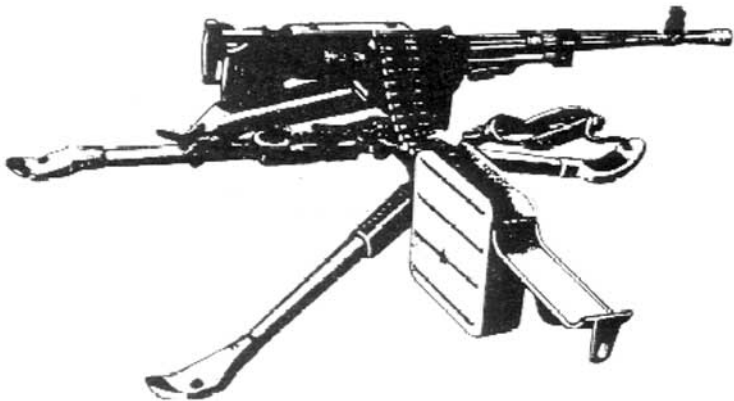
Caliber:	7.62mm
Weight:	7.1kg (empty)
Ammunition:	Ball
Maximum	
Range:	3,000 m
Effective Range:	800 m
Cyclic Rate:	700 rpm



RP-46 LIGHT MACHINEGUN

The RP-46 is a gas operated, air cooled, and belt fed light machinegun.

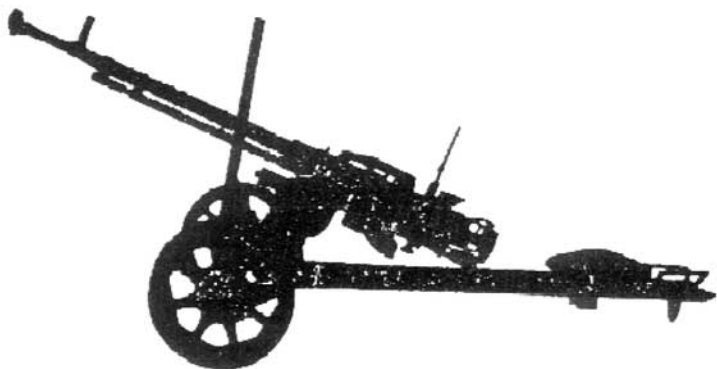
Caliber:	7.62mm
Weight:	13kg (empty)
Ammunition:	Ball
Maximum	
Range:	3,500 m
Effective Range:	800 m
Cyclic Rate:	600 rpm



SMG MACHINEGUN

The SMG is an air cooled, belt fed machinegun. This machinegun can be mounted on a tripod or wheeled mount.

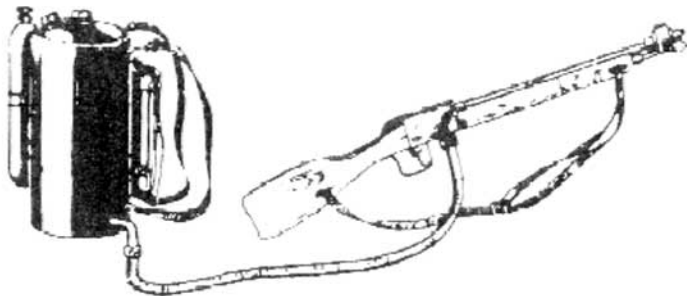
Caliber:	7.62mm
Weight:	13kg (gun only)
Ammunition:	Ball
Maximum	
Range:	3,500 m
Effective Range:	1,000 m
Cyclic Rate:	600-700 rpm



DSHK 38/46 HEAVY MACHINEGUN

The DShk 38/46 is a gas operated, belt fed, air cooled weapon which fires from the open bolt position. The Chinese Type 54 heavy machinegun is an exact copy of the DShk 38/46. Both weapons are found in the DPRK forces.

Caliber:	12.7mm
Weight:	35.6kg (empty)
Ammunition:	API, API-T
Maximum	
Range:	7,000 m (ground)
Effective Range:	1,000 m AA, 2,000 m ground
Cyclic Rate:	540-600 rpm



ROKS-3 FLAMETHROWER

The ROKS-3 is a typical portable flamethrower. It has a single cylindrical fuel tank with a filling aperture centrally located at the top and a battlefield filler with compressed nitrogen attached to the side. A spring loaded, pressure release valve is located beside the filling aperture. A hose connects the ignition cartridges in an ignition cylinder that advances automatically after a shot to bring the next unfired cartridge into the firing position. The ROKS-3 carries 10 igniters and has a total firing duration of 5-6 seconds.

Weight:	26kg full
Fuel Capacity:	4 gallons
Maximum Range:	35 m



AGS-17 AUTOMATIC GRENADE LAUNCHER

The AGS-17 is a belt fed, blow back operated weapon which is mounted on a tripod. A circular extension is provided on the left hand side of the weapon to receive an optical sight unit which allows the weapon to be used in either the direct fire or the indirect fire mode.

Caliber:	30mm
Weight:	33kg
Ammunition:	HE Frag
Maximum Range:	1,730 m
Effective Range:	1,200 m
Cyclic Rate:	400 rpm

LINE DIAGRAM UNAVAILABLE

60MM TYPE-31 MORTAR

The Chinese Type-31 is almost identical to the U.S. 60mm mortar. It is believed that the rounds for the U.S. model are interchangeable with the Chinese variant.

Caliber:	60mm
Weight:	20kg
Crew:	2
Ammunition:	Unknown
Range:	200-1,630 m
Rate of Fire:	15-20 rpm

LINE DIAGRAM UNAVAILABLE

82MM M-37 MORTAR

The Soviet M-37 is a mortar with a fixed firing pin for drop firing.

Caliber:	82mm
Weight:	56kg
Crew:	5
Ammunition:	Frag-HE, smoke, illuminating, incendiary
Range:	100-3,000 m
Rate of Fire:	15-25 rpm



120MM M-1943 MORTAR

The Soviet M-1943 is a mortar that can be drop fired or trigger fired by use of a lanyard. The Chinese variant of this mortar is the Type-53.

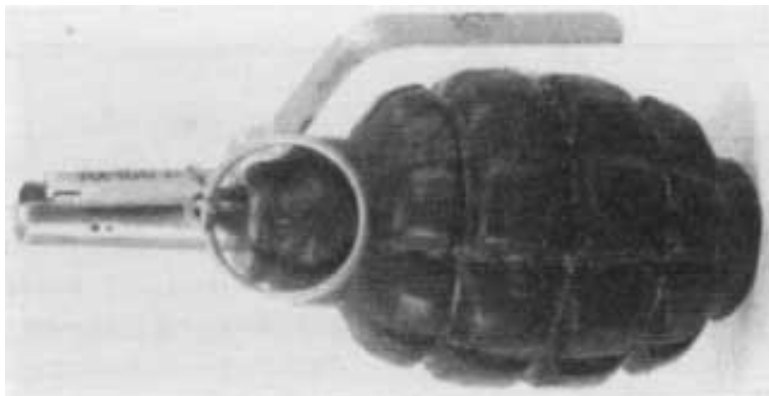
Caliber:	120mm
Weight:	500kg
Crew:	6
Ammunition:	Frag-HE, HE, smoke, illuminating, incendiary, possible chemical
Range:	460-5,700 m
Rate of Fire:	12-15 rpm

LINE DIAGRAM UNAVAILABLE

160MM M-43 MORTAR

The Soviet M-43 is a breech loaded mortar that is towed on a single axle carriage.

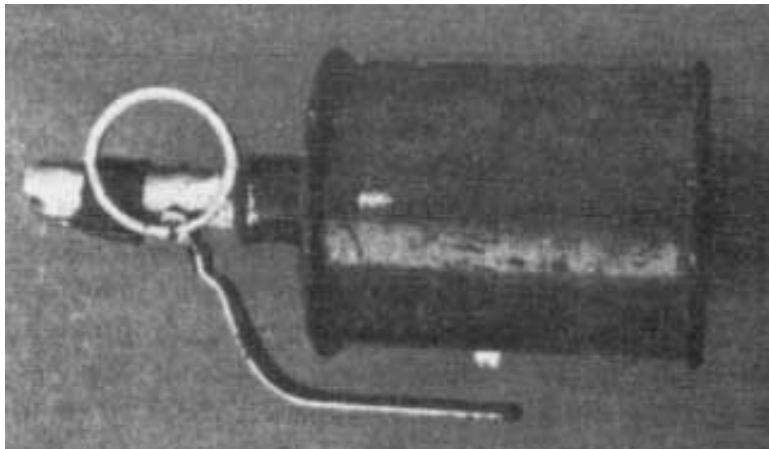
Caliber:	160mm
Weight:	1,170kg
Crew:	7
Ammunition:	Unknown
Range:	630-5,150 m
Rate of Fire:	3 rpm



F-1 FRAGMENTATION HAND GRENADE

The F-1 produced by the DPRK is a copy of the Soviet designed grenade of the same designation. It is oval in shape, quite heavy, and produces a wide variety of fragmentation patterns and ranges because of the unpredictable breakup of the body.

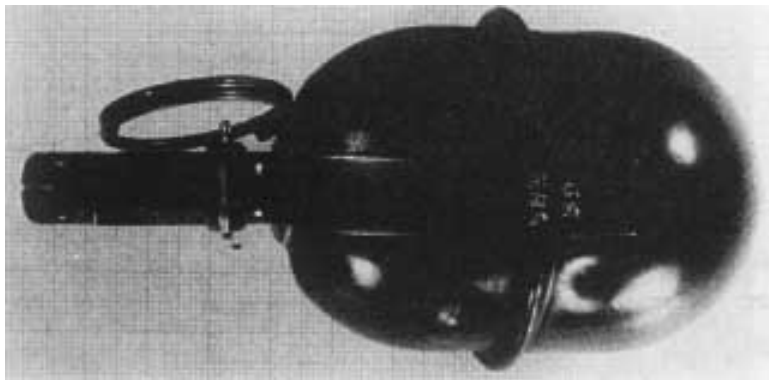
Grenade Case:	Cast iron
Color:	Olive drab
Fuze Type:	Striker release
Delay:	3.2-4.2 seconds
Explosive Type:	TNT
Explosive Weight:	60g
Casualty Radius:	15-20 m



RG-42 FRAGMENTATION HAND GRENADE

The RG-42 produced by the DPRK is a copy of the Soviet designed grenade of the same designation. It is cylindrical in shape. The sheet steel body, closed with end caps in a fashion similar to a tin can, encloses a pre-engraved steel fragmentation liner.

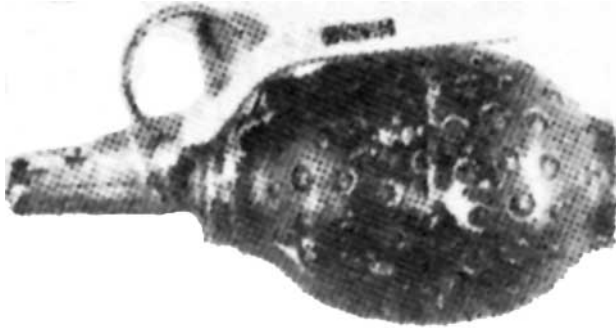
Grenade Case:	Sheet metal
Color:	Olive drab
Fuze Type:	Striker release
Delay:	3.2-4.2 seconds
Explosive Type:	TNT
Explosive Weight:	118g
Casualty Radius:	20 m



RGD-5 FRAGMENTATION HAND GRENADE

The RGD-5 produced by the DPRK is a copy of the Soviet designed grenade of the same designation. It is oval in shape. The two piece sheet steel body is joined in the center by a circumferential crimp. A two piece serrated steel fragmentation liner is placed between the grenade body and the explosive filler.

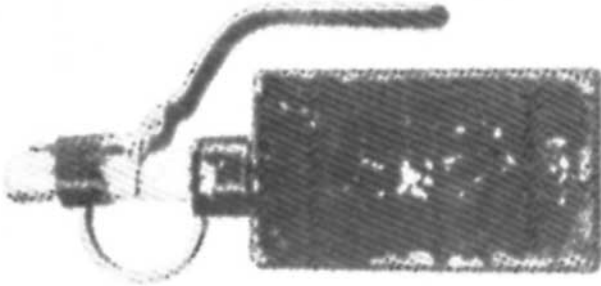
Grenade Case:	Sheet metal
Color:	Olive drab
Fuze Type:	Striker release
Delay:	3.2-4.2 seconds
Explosive Type:	TNT
Explosive Weight:	110g
Casualty Radius:	20 m



UNKNOWN FRAGMENTATION HAND GRENADE

The hand grenade is produced by the DPRK for use in special operations. It is oval in shape. The cast aluminum body forms a matrix in which preformed cast iron ball fragments are embedded. There is a possibility that this grenade has been adapted to fire from a rifle.

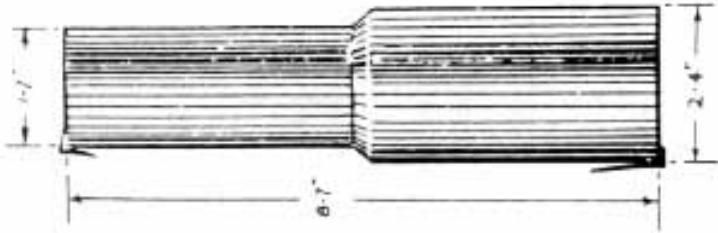
Grenade Case:	Aluminum
Color:	Olive drab
Fuze Type:	Striker release
Delay:	3.2-4.2 seconds
Explosive Type:	TNT
Explosive Weight:	60g
Casualty Radius:	20 m



UNKNOWN FRAGMENTATION HAND GRENADE

The hand grenade is rectangular in shape and is referred to as a “box” grenade. The body is sheet metal. Preformed steel balls, each with a diameter of approx. 6.3mm, are enclosed in the body for additional fragmentation.

Grenade Case:	Sheet metal
Color:	Olive drab
Fuze Type:	Striker release
Delay:	3.2-4.2 seconds
Explosive Type:	Comp B
Explosive Weight:	55g
Casualty Radius:	20 m



RDG-1 SMOKE HAND GRENADE

The RDG-1 smoke grenade is produced by the DPRK and is a copy of the Soviet designed grenade of the same designation. It is cylindrical in shape. The body of the grenade, made from molded cardboard, is affixed to a wooden handle. The grenade will float and therefore can be used in water. The primary purpose of the grenade is to provide signaling capability. Both black and white smoke grenades are produced.

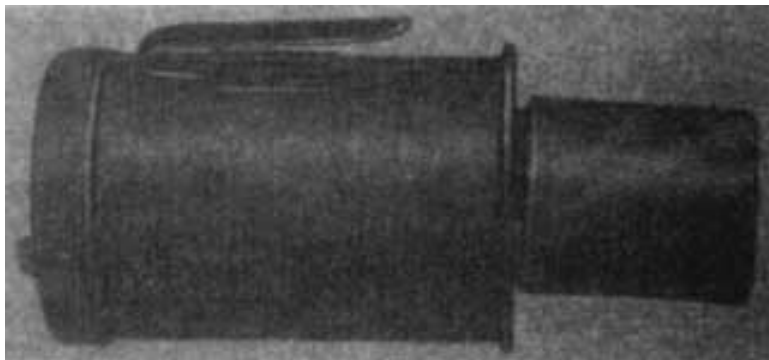
Grenade Case:	Cardboard
Color:	Gray
Fuze Type:	Pull friction
Delay:	5-10 seconds
Filler:	Potassium chloride
Duration:	60-90 seconds
Dispersion:	460 sq m



RDG-2 SMOKE HAND GRENADE

The RDG-2 smoke grenade is produced by the DPRK and is a copy of the Soviet designed grenade of the same designation. It is cylindrical in shape. The body of the grenade is made from molded cardboard. The primary purpose of the grenade is to provide limited concealment for maneuvering troops. The RDG-2 is white smoke, RDG-2ch is black smoke, and the RDG-2kh is gray smoke.

Grenade Case:	Cardboard
Color:	Gray
Fuze Type:	Pull friction
Delay:	10-15 seconds
Filler:	HC smoke
Duration:	90 seconds
Dispersion:	160 sq m



TYPE-S SMOKE HAND GRENADE

The Type-S smoke grenade is produced by the DPRK and is a copy of the Soviet designed grenade of the same designation. It is cylindrical in shape and has a metal clip affixed to the side for fastening the grenade onto a belt for carrying. The body of the grenade is made from sheet metal. The primary purpose of the grenade is to provide screening smoke. Only white smoke is available.

Grenade Case:	Sheet metal
Color:	Unknown
Fuze Type:	Pyrotechnic
Delay:	12-15 seconds
Filler:	Potassium chloride or ammonium nitrate
Duration:	60-90 seconds
Dispersion:	15-20 m



LACRIMATORY HAND GRENADE

The grenade is a copy of a North Vietnamese model. The design follows the typical Vietnamese construction with a wooden handle and a thin sheet metal body. A small explosive charge is present in the grenade to disperse the tear agent filler. The illustration is that of a Vietnamese model, but is reportedly similar to those used by the DPRK.

Grenade Case:	Sheet metal
Color:	Light blue/green with red band
Fuze Type:	Pull friction
Delay:	3-4 seconds
Filler:	TNT/CS mixture
Duration:	Unknown
Dispersion:	10 m



RPG-43 ANTITANK HAND GRENADE

The RPG-43 hand grenade produced by North Korea is a copy of the Soviet designed grenade of the same designation. It is cylindrical in shape with a large wooden handle. The RPG-43 is large, bulky, and lacks sufficient stabilization to allow it to accurately impact and function on the target. This grenade is being replaced by the RKG-3 and is seldom encountered.

Grenade Case:	Sheet metal
Color:	Olive drab
Fuze Type:	Impact
Delay:	None
Explosive Type:	TNT
Explosive Weight:	600g
Armor Penetration:	75mm



RKG-3 ANTITANK HAND GRENADE

The RKG-3 hand grenade produced by DPRK is a copy of the Soviet designed grenade of the same designation. It is cylindrical in shape. The grenade employs a shaped charge warhead for armor penetration. The size, weight, and characteristics of the grenade make it hard to throw and difficult to accurately place on the target.

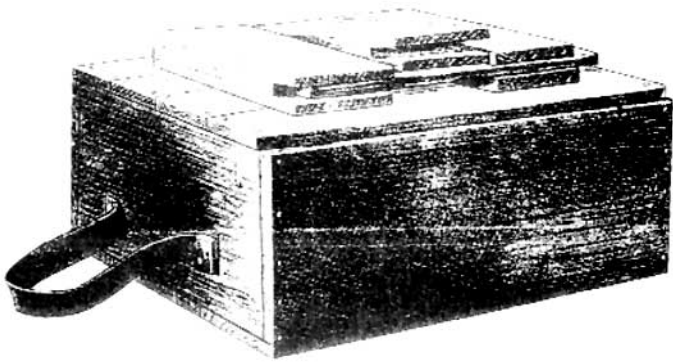
Grenade Case:	Sheet metal
Color:	Olive drab
Fuze Type:	Impact
Delay:	None
Explosive Type:	TNT
Explosive Weight:	575g
Armor Penetration:	125mm



ATM-72 ANTITANK MINE

The ATM-72 is an antitank blast mine.

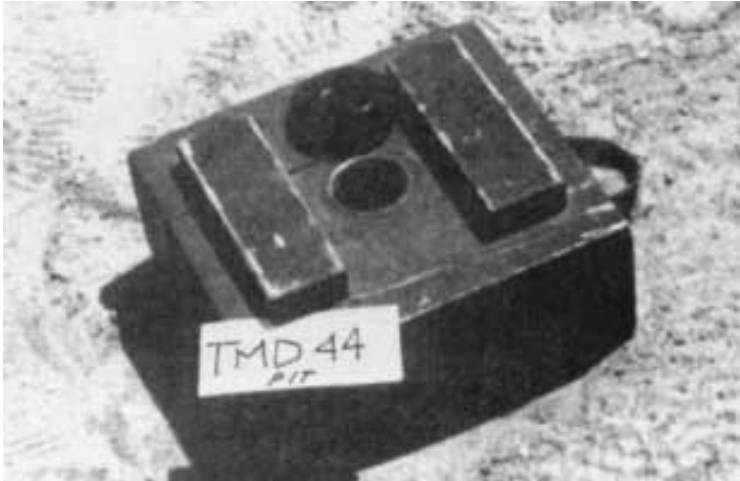
Mine Case:	Metal
Color:	Olive drab
Fuze Type:	MF-2 pressure
Actuation Force:	300-600kg
Explosive Type:	TH-50
Explosive Weight:	9kg



TMD-B ANTITANK MINE

The TMD-B is an antitank blast mine.

Mine Case:	Wood
Color:	Olive drab or natural wood
Fuze Type:	MV-5 pressure
Actuation Force:	200-500kg
Explosive Type:	Amatol
Explosive Weight:	9-9.7kg



TMD-44 ANTITANK MINE

The TMD-44 is an antitank blast mine.

Mine Case:	Wood
Color:	Olive drab or natural wood
Fuze Type:	MV-5 pressure
Actuation Force:	200-500kg
Explosive Type:	TNT or Ammonite 80
Explosive Weight:	4-6.7kg



TM-46 AND TMN-46 ANTITANK MINE

The TM-46 and TMN-46 are antitank blast mines. The difference between the two is that the TMN-46 has a second fuze well for boobytrap purposes where the TM-46 does not.

Mine Case:	Metal
Color:	Olive drab
Fuze Type:	MV-5 and MV-46 pressure
Actuation Force:	180kg for MV-46 and 200-500 for MV-5
Explosive Type:	TNT or Amatol
Explosive Weight:	5.7kg



TM-41 ANTITANK MINE

The TM-41 is an antitank blast mine.

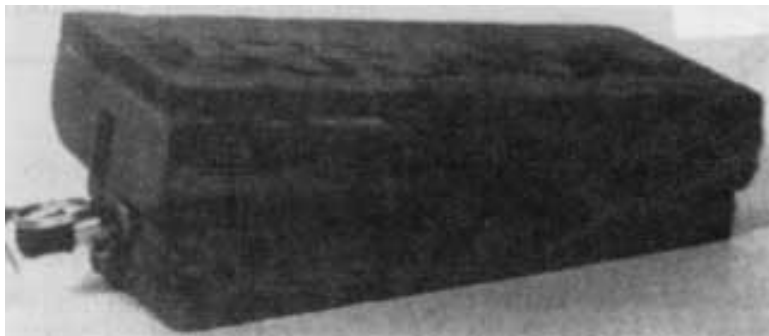
Mine Case:	Metal
Color:	Olive drab
Fuze Type:	MV-5 pressure
Actuation Force:	160kg
Explosive Type:	TNT or Amatol
Explosive Weight:	4kg



POMZ-2 ANTIPERSONNEL MINE

The POMZ-2 is an antipersonnel fragmentation mine.

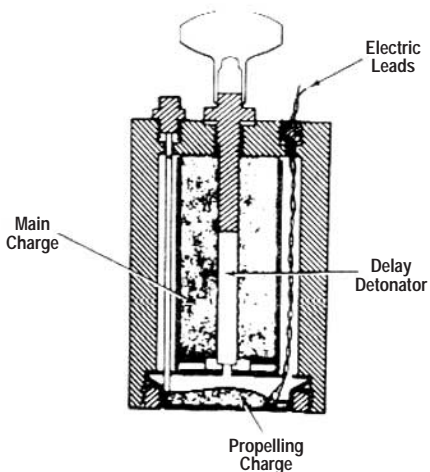
Mine Case:	Metal
Color:	Olive drab
Fuze Type:	MUV trip wire
Actuation Force:	2-5kg
Explosive Type:	TNT
Explosive Weight:	.075kg
Effective Range:	4 m



PMD-6 ANTIPERSONNEL MINE

The PMD-6 is an antipersonnel blast mine.

Mine Case:	Wood
Color:	Natural wood
Fuze Type:	MUV pressure
Actuation Force:	1-10kg
Explosive Type:	TNT
Explosive Weight:	.02kg
Effective Range:	Limited



OZM-3 ANTIPERSONNEL MINE

The OZM-3 antipersonnel mine is a bounding fragmentation mine. The OZM-3 also has electronic fuzing for use in controlled minefields.

Mine Case:	Cast iron
Color:	Olive drab
Fuze Type:	MUV trip wire
Actuation Force:	2-5kg
Explosive Type:	TNT
Explosive Weight:	.075kg
Effective Range:	10 m

LINE DIAGRAM UNAVAILABLE

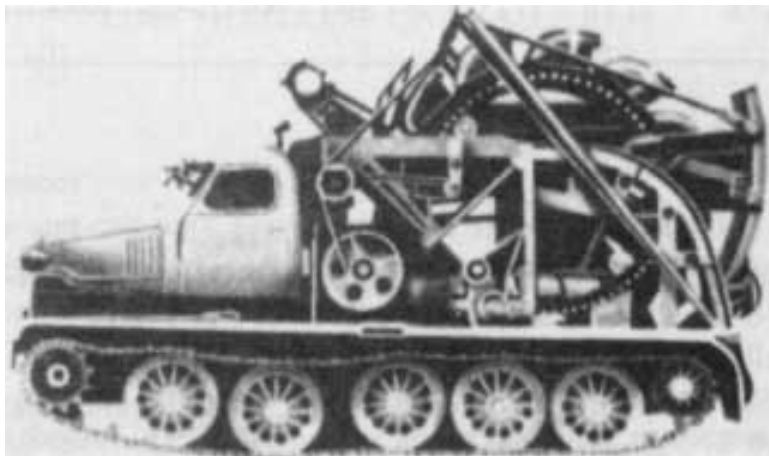
PMR-3 MECHANICAL MINELAYING TRAILER

The PMR-3 consists of a single chute and a plow attachment. The attachment provides the option of burying the mines or depositing them on the surface of the ground. The mines can be spaced 4 to 5.5 meters apart, depending on the control setting. If buried, the mines are emplaced at a depth of 6 to 12 centimeters at a speed of 5 km/hr. The trailer can store 200 to 300 antitank mines. The PMR-3 carries a crew of 4-5 personnel.

LINE DIAGRAM UNAVAILABLE

PT-54/55 MINE CLEARING ROLLERS

The PT-54/55 is a tank mounted mineclearing roller system with two independent roller sets attached to arms in front of each tread on a tank. Used at speeds of 8-12 km/hr, the PT-54/55 can clear a path .8-1.3m wide in front of each roller. The rollers cannot detonate most modern mines and can only withstand about 10 antitank mine explosions.



BTM HIGH SPEED DITCHING MACHINE

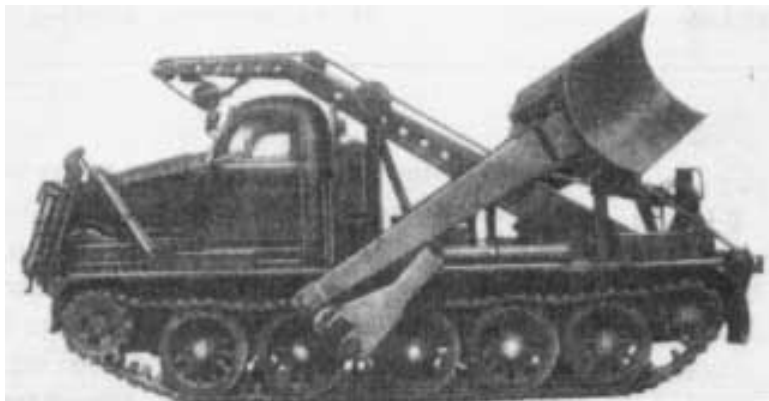
The BTM is a high speed, bucket wheel ditching machine mounted on the AT-T heavy tracked artillery tractor. The ditching wheel is mechanically raised and lowered by cables or chains. The BTM can be used to dig individual protective positions, trenches for shelter, firebreaks and strips. Ditching speed is 300-500 m/hr in sandy loam soil.

Maximum Speed: 35 km/hr

Crew: 2

Ditch Depth: 1.5 m

Ditch Width: 1 m



BAT-M DOZER

The BAT-M dozer has a hydraulic operated, two section adjustable dozer blade mounted on an AT-T heavy artillery tractor with a rotary crane mounted on the bed of the vehicle. The BAT-M can move material with its blade at a rate of 200-250 cubic meters per hour. Its crane capacity is 2 metric tons. BAT-M also has an air filtration system and can operate in contaminated areas for short periods of time.

Maximum Speed: 35 km/hr
Crew: 2



MDK-2 TRENCH DIGGING MACHINE

The MDK-2 trench digging machine is based on the chassis of the AT-T heavy tracked artillery tractor. The circular digging machine is used for digging weapon trenches, pits for vehicles, and other equipment. Depending on the soil conditions, the MDK-2 can dig a maximum of 300 cubic meters per hour.

Maximum Speed: 35 km/hr

Crew: 2

Maximum Ditch Depth: 4.5 m

Maximum Ditch Width: 4 m

LINE DIAGRAM UNAVAILABLE

PMP PONTOON BRIDGE

The PMP pontoon bridge is a version of the Russian PMP pontoon bridge. The PMP ribbon set consists of pontoons and approach ramps constructed of a low alloy steel. Each pontoon section is launched from a truck and automatically unfolds upon entering the water. The PMP has a 60 ton capacity and can be constructed in rivers with a current flow or still waters.

LINE DIAGRAM UNAVAILABLE

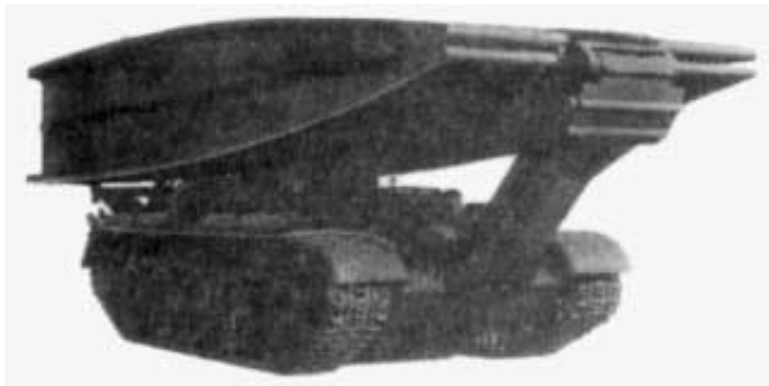
TPP PONTOON BRIDGE

The TPP by today's standards is an obsolete bridging system. However, it is still well suited for use in the LOC role. A full bridge set consists of 96 steel decked pontoon sections that are connected end to end in combinations of two or three to form a single full pontoon. The strong points of the TPP are high load capacity and its ability to operate in high river velocities. However, it requires 116 2.5 ton trucks to transport the system, lacks ramps for loading/unloading directly onto the shore, and is manpower intensive to construct. The TPP can form a 181 m bridge with a 70 ton capacity or a 241 m bridge with a 50 ton capacity.



GSP AMPHIBIOUS FERRY

The Russian GSP ferry consists of two tracked amphibious vehicles which make up the left and right halves of the ferry. To make the full ferry, the vehicles are joined together in the water and the pontoons are lowered to the float position. There are two retractable scissor-type ramps on each side of the full ferry for loading and unloading. The GSP can carry up to 50 metric tons at a water speed of 7.7 km/hr. Unloaded it can go 10.8 km/hr in water. The six-man crew (2 vehicles) can assemble the ferry in 3 to 5 minutes. The GSP cannot operate with the river current faster than 2 m/sec or the river bank is higher than .5 m.



BLG-60 ARMORED VEHICLE-LAUNCHED BRIDGE

The BLG-60 armored vehicle-launched bridge (AVLB) system is used to emplace a treadway bridge over obstacles up to 19 meters wide. The BLG-60 consists of a scissor bridge mounted on a modified T-55 hull. The bridge is a two box treadway system. Once erected it can support vehicles up to 50 tons.

Emplacement Time:	3 min
Treadway Width:	3.45 m
Crew:	2
Maximum Speed:	50 km/hr



MTU-20 ARMORED VEHICLE-LAUNCHED BRIDGE

The MTU-20 armored vehicle-launched bridge (AVLB) system is used to emplace a treadway bridge over obstacles up to 18 meters wide. The MTU-20 consists of a twin treadway superstructure mounted on a modified T-55 hull. Once erected the bridge can support vehicles up to 50 tons.

Emplacement Time:	5-7 min
Treadway Width:	3.3 m
Crew:	2
Maximum Speed:	50 km/hr



MT-55 TANK-LAUNCHED BRIDGE

The MT-55 is a tank-launched bridge based on a T-55 MBT hull. The MT-55 span is 18 meters long and can support loads up to 50 tons. The launcher has a gap measuring device and infrared equipment for bridge laying at night.

Emplacement Time:	3 min
Treadway Width:	3.2 m
Crew:	2
Maximum Speed:	50 km/hr



K-61 TRACKED AMPHIBIOUS VEHICLE

The K-61 is a large, unarmored tracked amphibious vehicle used extensively to transport cargo, equipment and personnel in river crossing operations. It is capable of carrying light vehicles and equipment up to 5 tons or 50 troops across water. It can carry up to 3 tons on land. The K-61 is powered by a 4 cylinder 135 hp diesel engine and is propelled in the water by two propellers located in the rear of the vehicle. Generally considered obsolete, it is an important and integral part of the DPRK ERC units.

Maximum Speed: Land 36 km/hr, water 10 km/hr

GROUND TRANSPORTATION VEHICLES

The numbers of transport equipment organic to combat units in the NKA have greatly increased since the 1950s. The numbers of motor transportation brigades for resupply have also increased, along with quality and performance. The NKA prefers foreign trucks over indigenously produced trucks. Indigenously produced trucks are usually used in the civil sector. Most trucks imported to the DPRK are from the former Soviet Union (FSU) and Japan. Trucks from the FSU offer the NKA the highest performance levels while the Japanese trucks are rated second, but with higher technology and reliability.

All NKA wheeled transport vehicles for either general transport or weapon systems are thin-skinned vehicles. They are all vulnerable to small arms fire, fragmentation explosives, and anything more destructive.



SELF RELIANCE 68 NA (KAENSAENG)

The Self Reliance 68 NA (KAENSAENG) is the only light utility model vehicle the DPRK has produced since 1970. Two variants are produced, a utility and a cargo model. The KAENSAENG is a 4x4 half ton utility truck that appears to be an exact copy of the former soviet Union GAZ-69. Statistics for the GAZ-69 are as follows:

Maximum Speed:	90 km/hr
Range:	530 km
Maximum	
 Cargo Weight:	500kg
 Towing Weight:	800kg



UAZ-469

The Russian designed UAZ-469 utility truck was developed to replace the GAZ-69. The outstanding features of this vehicle include improved cross-country performance, better gas mileage, greater starting torque, increased maximum and cruising speeds, greater load capacity, and a better heating system than the GAZ-69. The UAZ-469 can be transported and airdropped by airplanes and helicopters. One of the DPRK variants of this vehicle is the UAZ-469 RKh. This vehicle is used in NBC defense units and is equipped with NBC detection equipment.



VICTORY 58 (SUNGNI)

The Victory 58 (SUNGNI) is a copy of the former Soviet Union GAZ-51, but it has weaker springs than the GAZ-51. The engine is hard to start, and the crudely copied carburetor, used since 1961, wastes gasoline badly at low speeds, accounting for the usually high fuel consumption. Military usage is probably limited due to the vehicle's age.



FIGHT 66 (TUJAENG)

The Fight 66 (TUJAENG) 2.5 ton, 4x2, cargo truck was introduced about 1976 as the replacement for the Victory 58. The major change noted between the two designs is the new and more modern looking cab. Today, the Fight 66 is probably the largest portion of the DPRK's truck production.

LINE DIAGRAM UNAVAILABLE

ZIL-130

The ZIL-130 started production in late 1962 in Russia. It is a medium truck with a rated payload capacity of 5 tons. Its body consists of a wooden platform with hinged, drop side boards. Its metal cab seats three.



ZIL-157

The ZIL-157 is one of the principal medium trucks of the DPRK forces. The ZIL-157 is used to carry cargo, multiple rocket launchers, TPP pontoons, and other specialized equipment.

Maximum Speed: 65 km/hr
Range: 580 km
Maximum Payload: 4.5 tons



ISUZU TWD25

This 6x6 2.5 ton cargo truck is imported from Isuzu Motors of Japan. This vehicle can transport 5,000 kg of cargo on hard surfaces and 2,500 kg of cargo in off road conditions. The Isuzu TWD25 is equipped with a 210 hp, 6 cylinder, liquid cooled diesel engine.

Maximum Speed: 85 km/hr



ISUZU HTW11

This 6x6 8 ton Japanese import is equipped with all wheel drive for good on/off road performance. The HTW11 is equipped with a 150 hp, 6 cylinder, liquid cooled diesel engine.

Maximum Speed: 82 km/hr

Maximum Payload: 4,700kg



NISSAN TZA52PP

This 6x6 30 ton Japanese import, equipped with all wheel drive and a 30,000 kg payload, makes for a dependable military vehicle. The TZA52PP is equipped with a 300 hp, 8 cylinder, direct injection, water cooled diesel engine.



ZIL-131

The ZIL-131 was produced by the former Soviet Union as a replacement to the ZIL-157 as a basic tactical general purpose truck. ZIL-131 improvements over the ZIL-157 include increased payload, higher output engine, improved power train, shorter wheelbase, power steering, waterproof ignition, and a modified cab controlled tire inflation system. Another unique feature of the ZIL-131 is the ability of the front axle drive to engage automatically when first gear is engaged. Additionally, the driver can manually engage the front axle drive in second gear.



KRAZ-260

This Russian produced vehicle was designed to replace the KRAZ-255B. The KRAZ-260 is an improvement to the KRAZ-255B in several areas. The power has been increased by turbocharging the engine. This has resulted in improved highway and cross-country speeds. Payload has been increased by 1,500 kg. This vehicle has full time all wheel drive and a fully bolted together frame.

Maximum Speed: 80 km/hr



INDEPENDENCE (CHAJU)

The North Koreans emphasize heavy payload vehicles to support their heavy industry. Currently, one of these vehicles known to be in production is the Independence (CHAJU). The Independence entered production in 1971. It is apparently identical to the Russian KRAZ-255B. It is an 11 ton dump truck with a cab behind engine design which can seat the driver and two passengers.



INDEPENDENCE 82 (CHAJU 82)

The Independence 82, a 10 ton 4x2 dump truck prototype, was first produced in 1982 as an improvement to the older Independence. The Independence 82 is still in production and in service with DPRK military and civilian transportation units. It is believed to be powered by a 240 hp, 8 cylinder diesel engine and available in 2 and possibly 4 wheel drive. Configurations include a dump truck, a standard cargo bed model, and a truck tractor. The vehicle has a 7 cubic meter volume cargo body, a maximum speed of 94 km/hr, and a turning radius of 9 meters.

LINE DIAGRAM UNAVAILABLE

M-65 PROTECTIVE MASK

Features prominent filter housing on left hand cheek of facepiece and prominent voicemitter at front. Large lens eyepieces are provided and mask is held in position by six straps. Filter has efficiency of 99.995% and can withstand aerosol droplets down to 0.3 microns.

Weight: 0.6kg

Status: In service with DPRK forces.

LINE DIAGRAM UNAVAILABLE

MODEL SHLEM HOOD TYPE PROTECTIVE MASK

The Shlem mask consists of a facepiece (w/o voice transmitter), hose, and filter canister, which can be changed without taking the mask off. The valves of the Shlem tend to freeze and the hoses crack in cold weather.

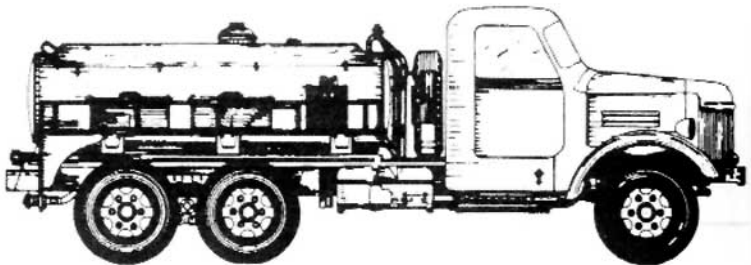
LINE DIAGRAM UNAVAILABLE

L-1 LIGHTWEIGHT PROTECTIVE SUIT

Rubberized suit consisting of jacket with fitted hood, overtrousers with integral overboots, two pair of two-fingered gloves, and carrying satchel. Suit provides complete protection against most NBC agents when worn with a face mask.

Weight: 3kg (approx.)

Status: In service with chemical units.



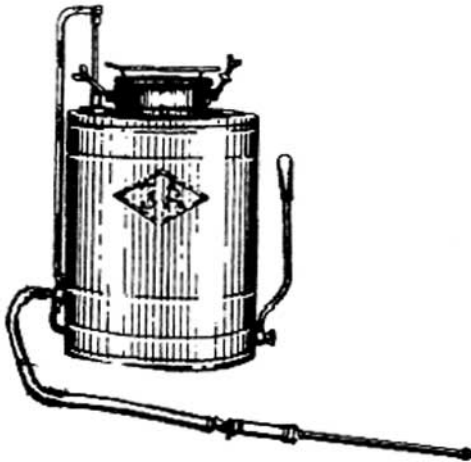
ARS-12U TRUCK-MOUNTED DECONTAMINATION APPARATUS

The ARS-12U is mounted on a ZIL-131 or ZIL-157 truck. It can be used to decontaminate vehicles, large weapon systems, heavy equipment, and terrain. It is also used to refill portable decontamination equipment, transport water, fight fires, and provide cold showers. It has a 2,500 liter tank that can decontaminate about 25 tanks, 50-80 artillery pieces, or 500 m of road with a 5 m width before needing to resupply.

LINE DIAGRAM UNAVAILABLE

MODEL BU-4 TRUCK-MOUNTED CLOTHING DECONTAMINATION APPARATUS

The BU-4 is a boiling apparatus that can be used to decontaminate chemically and biologically contaminated clothing, shelters, tarpaulins, and other items that can be laundered. The system consists of boilers with integral furnaces, tanks to hold reserve water, a hand pump, a hand press, and a drying tent. The BU-4 is normally carried on a GAZ-53 or GAZ-63 truck.



MODEL RDP-4V BACKPACK DECONTAMINATION APPARATUS

The RDP-4V is a hand operated backpack spray apparatus that is used to decontaminate vehicles, weapons, material, buildings, and small areas of terrain. The apparatus is composed of a metal tank with a large filling aperture, clamp on pressure lid, shoulder/waist straps, a piston-type air pump mounted inside the tank, a shutoff valve, a discharge hose, and a spray pipe with control valve and nozzle.

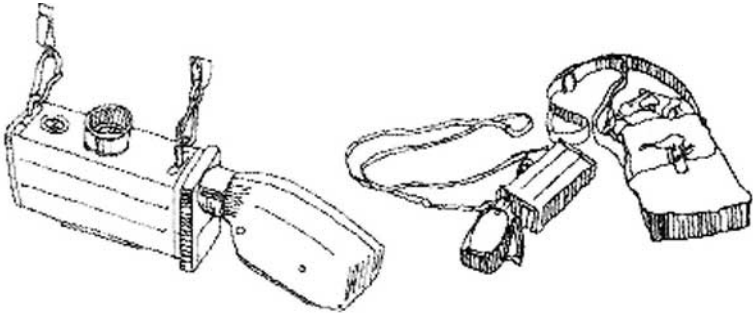
LINE DIAGRAM UNAVAILABLE

GSP-1 DETECTOR-ALARM, AUTOMATIC

Detects G-type nerve agents in the atmosphere and nuclear radiation in the immediate environment. The detector activates both a light and an audible alarm when it detects either of these contaminants. The detector is usually mounted in a reconnaissance vehicle, but may also be used at a fixed point. The GSP-1 can operate up to 8 hours before the batteries need to be recharged.

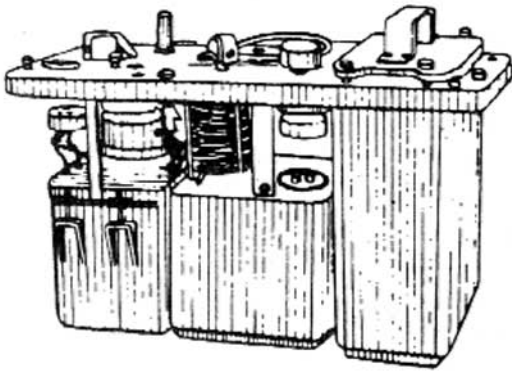
Weight: 18kg (approx.)

Status: Probably in service with chemical units.



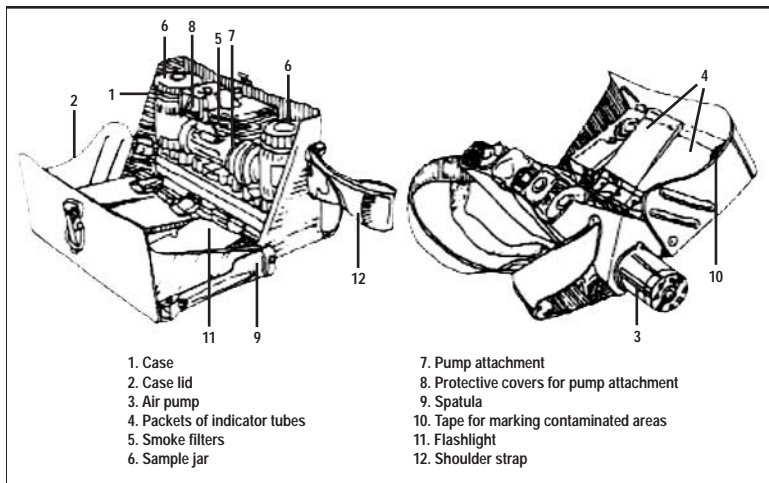
MODEL DP-62 LIGHTWEIGHT SURVEY METER

The DP-62 lightweight survey meter is used to detect and determine the level of beta-gamma radiation in the field. It consists of a hand generator and instrument proper. The presence of radiation is indicated by flashes of a neon tube, viewed through a condensing lens on the upper surface of the instrument. The celluloid window on the bottom of the instrument permits the access of beta particles to the radiation sensitive element of the meter. The detection range of the meter is from 10 to 500 millirads/hour. The meter is rugged, lightweight, compact, and simple to operate. The hand generator affords a constant source of power, making the meter independent of batteries.



MODEL DP-1a/b AREA SURVEY METER

The Model DP-1a area survey meter is a gamma detection and measuring device that can be used to measure radiation intensities in four sub-ranges from .04 to 400 rads/hour. The Model DP-1b is a battery powered area survey meter and is used to measure gamma radiation and to detect beta radiation. The instrument uses an ion chamber.



PKhR CHEMICAL AGENT DETECTION AND IDENTIFICATION KIT

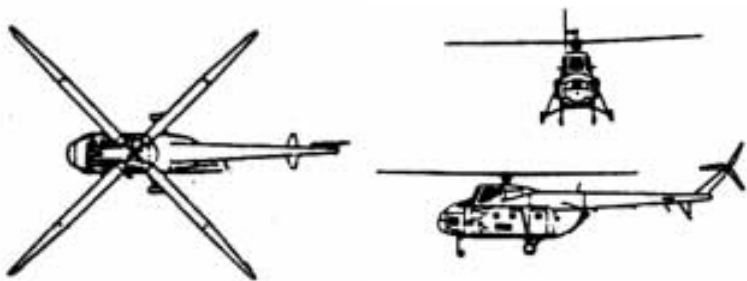
The PKhR chemical agent detection and identification kit will identify a wide array of chemical agents to include mustard, lewisite, hydrogen cyanide, phosgene, chloroacetophenone, adamsite, and G/V type nerve agents.



MI-2 HOPLITE

The Mi-2 is a twin turbine light utility helicopter. Possible armament includes up to 23mm machineguns, 57mm rockets, or the AT-3C ATGM. The Mi-2 can carry 6-8 troops or 700 kg internal cargo or 800 kg slung external.

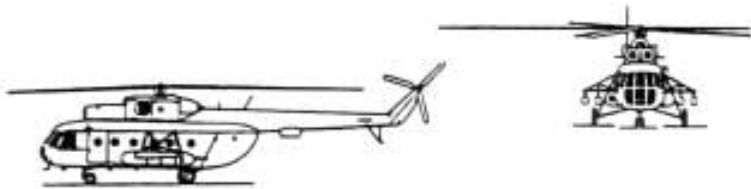
Maximum Speed:	210 km/hr
Weight:	3,500kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	4 km
Maximum Range:	580 km (maximum fuel)
Combat Range:	170 km



MI-4 HOUND

The Mi-4 is a multirole helicopter used for troop assault, armed support and general cargo transport. Optional weapons pylons can be added to support four 16 shot, 57mm rocket pods, or four AT-2 or AT-3 ATGMs.

Maximum Speed:	210 km/hr
Weight:	7,800kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	5.4 km
Maximum Range:	460 km (maximum fuel)
Combat Range:	250 km



MI-8 HIP

The Mi-8 is a medium utility helicopter. The Mi-8 can carry up to 24 fully equipped combat troops or 2,425 kg of cargo when the aircraft is fully armed. The Mi-8 can carry rocketpods, ATGMs, general/special purpose bombs (250/500kg), and a nose mounted machinegun.

Maximum Speed:	250 km/hr
Weight:	12,000kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	3.5-4.5 km
Maximum Range:	410 km (maximum fuel)
Combat Range:	200 km



MI-17 HIP

The Mi-17 has an airframe basically identical to that of the Mi-8, but has more powerful 1,900 shp turboshaft engines. The Mi-17 has the same armament options as the Mi-8 supplemented with GSh-23 23mm gun packs.

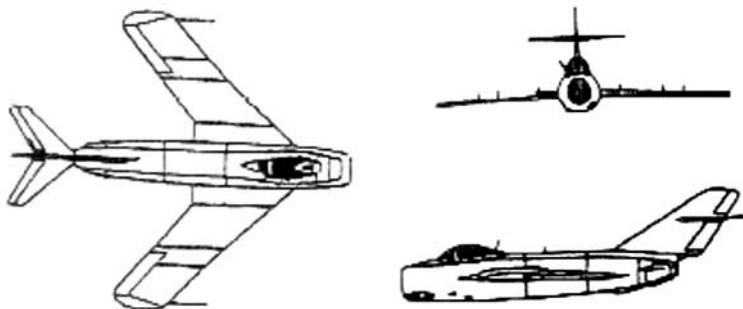
Maximum Speed:	250 km/hr
Weight:	13,000kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	5 km
Maximum Range:	950 km (maximum fuel)
Combat Range:	Unknown



HUGHES 500 D/E

The Hughes 500 is a multirole utility helicopter. The DPRK has at least 75 civilian D/E model helicopters. Although these aircraft were not sold with weapons on them, it is possible that some weapons systems have been added.

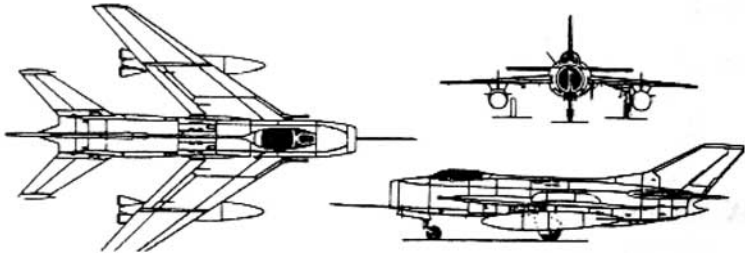
Maximum Speed:	280 km/hr
Weight:	1,700kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	4,800 m
Maximum Range:	327 km (maximum fuel)
Combat Range:	Unknown



F-5 (MIG-17) FRESCO A/B/C/D

The DPRK has about 100 of these in a ground attack role and about 30 aircraft as fighters. The F-5 is a single seat aircraft with a single turbojet engine. It has three 23mm cannons and/or four AA-1 ALKALI missiles. There are two under-wing hardpoints for drop tanks or stores up to 500 kg.

Maximum Speed:	1,145 km/hr
Weight:	6,700kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	16.6 km
Maximum Range:	2,250 km
Combat Range:	Unknown



F-6 (MIG-19) FARMER

The DPRK has about 160 of these aircraft. The F-6 is the Chinese version of the MiG-19. The F-6 has six attachment points for external stores (three on each wing). The outboard wing stations can carry a 250 kg bomb. The outboard wing stations can also carry a 760 or 400 liter drop tank or the CAA-1b AAM. The inboard wing stations can carry practice bombs or rocket pods with either 8 x 57mm, 16 x 57mm, or 7 x 90mm rockets.

Maximum Speed:	1.16 Mach
Weight:	9,040kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	16.7 km
Maximum Range:	Unknown
Combat Range:	Unknown



MIG-21 FISHBED D/F/J

The DPRK has about 160 of these aircraft. The FISHBED D/F is armed with a twin barrel 23mm GSh-23 gun with 200 rounds a belly pack. The J model carries the GSh-23 internally. All models also have four underwing pylons for weapons and drop tanks. The MiG-21 has a JAY BIRD/SPIN SCAN search and track radar with a 20 km range. Typical loads for the intercept role are two AA-2/2D ATOLLs and two radar homing AA-2C ATOLLs; two UV-16-57 rocket pods on the outer pylons, or two drop tanks and two AA-2/2D or AA-2C AAMs. Typical loads for ground attack are four UV-16-57 rocket pods, two 500 kg and two 250 kg bombs, or four 240mm S-24 rockets.

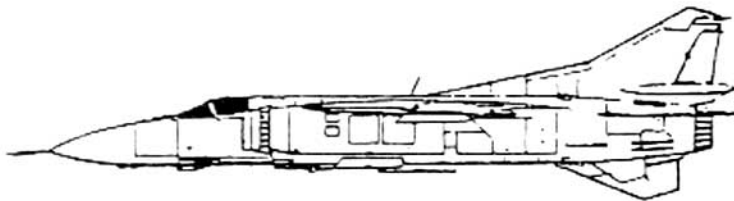
Maximum Speed:	2.05 Mach
Weight:	9,800kg (loaded)
Maximum Ceiling:	18 km
Service Ceiling:	15.2 km
Maximum Range:	971 km
Combat Range:	593 km (with drop tanks)

LINE DIAGRAM UNAVAILABLE

F-7

The DPRK has about 40 of these aircraft. The F-7 is the Chinese version of the FISHBED C. The F-7 is armed with two 30mm Type 30-1 belt-fed cannons with 60 rounds per gun. There are two hardpoints under each wing, with the outboard ones sometimes used for drop tanks. Each inboard pylon is capable of carrying a PL-2, PL-2A, PL-5B, AA-2 AAM; or a Type-57-2 pod with 18 x 57mm rockets; or a Type-90-M1 pod with 7 x 90mm rockets; or bombs of 50/150/250/500 kg. The outboard pylons can also carry one of the rocket pods, a 50/150 kg bomb, or a 500 liter droptank.

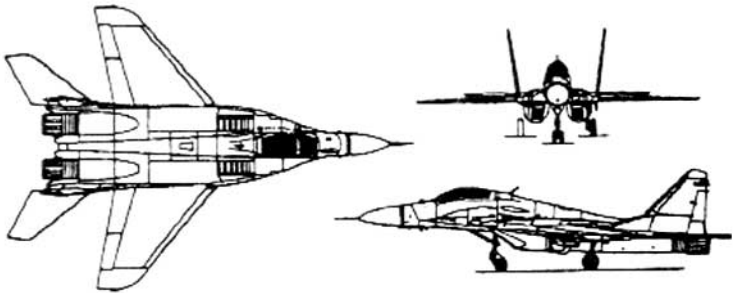
Maximum Speed:	2.05 Mach
Weight:	5,240kg (loaded)
Maximum Ceiling:	18.7 km
Service Ceiling:	19.8 km
Maximum Range:	1,203 km
Combat Range:	939 km (with drop tanks)



MIG-23 FLOGGER

The DPRK has at least 46 MiG-23ML fighters. The MiG-23ML (FLOGGER G) is equipped with the HIGH LARK radar and can be armed with AA-2/ATOLL, AA-7/APEX, and AA-8/APHID AAMs. It also carries a twin barrel GSh-23 gun.

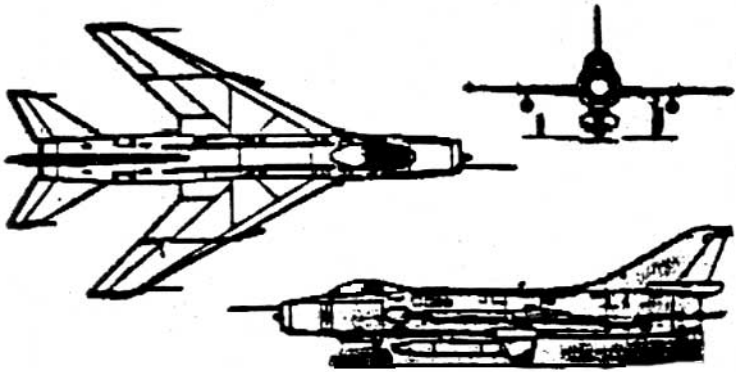
Maximum Speed:	2.35 Mach
Weight:	18,900kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	18 km
Maximum Range:	Unknown
Combat Range:	900-1,300 km



MIG-29 FULCRUM A/B

The DPRK has about 10 MiG-29 aircraft. The MiG-29 is a twin engine fighter. It can carry two medium range radar homing AA-10/ALAMO and four close range AA-11/ARCHER AAMs on three pylons under the wings. It can also carry AA-8/APHID missiles, bombs, and 57/80/240mm rocket pods. The MiG-29 also has one 30mm gun.

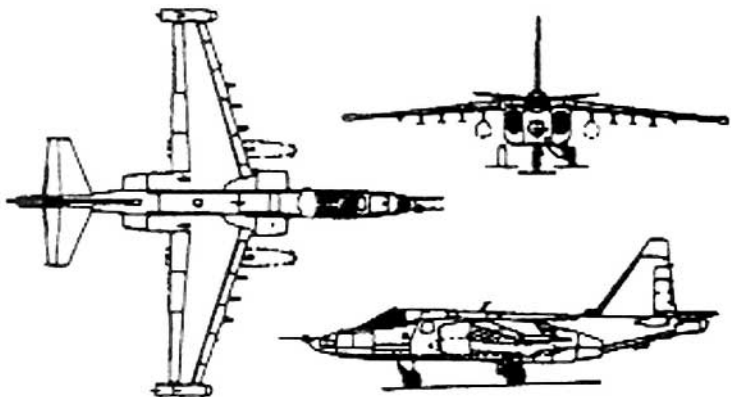
Maximum Speed:	2.3 Mach
Weight:	18,900kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	18 km
Maximum Range:	2,900 km (ferry mission)
Combat Range:	1,500 km



SU-7B FITTER A

The DPRK has about 20 of these aircraft. The Su-7B is a single seat ground attack aircraft. It is armed with two 30mm NR-30 guns in wing roots, each with 70 rounds. Under-wing pylons allow two 742 kg or two 495 kg of bombs or rocket pods.

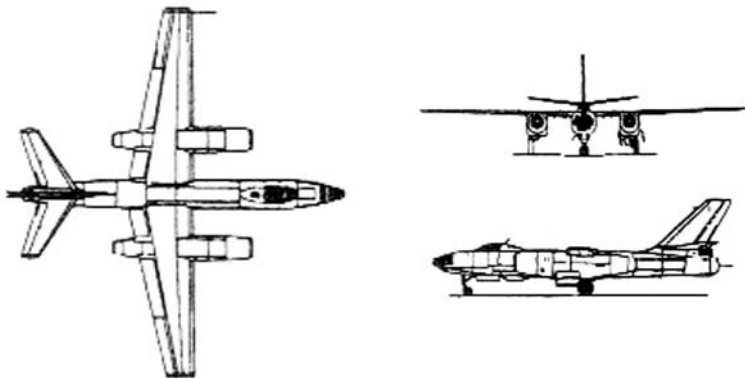
Maximum Speed:	1.6 Mach
Weight:	13,387kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	18 km
Maximum Range:	1,449 km
Combat Range:	250-350 km (with drop tanks)



SU-25 FROGFOOT A

The DPRK has about 35 of these aircraft. The Su-25 is a single seat ground attack aircraft. It is armed with one twin barrel 30mm gun in the bottom of the fuselage with 250 rounds. There are 8 pylons under the wings which can carry about 4,000 kg of air-to-ground weapons, including 57mm to 330mm rockets. There are two small outboard pylons for AA-2D/ATOLL or AA-8/APHID AAMs.

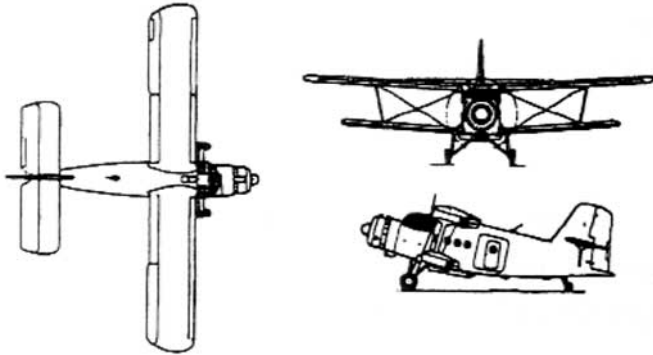
Maximum Speed:	.8 Mach
Weight:	17,600kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	7 km
Maximum Range:	Unknown
Combat Range:	1,250 km (with drop tanks)



IL-28 BEAGLE

The DPRK has about 80 of these aircraft. The Il-28 is a three seat light bomber. It has an internal bay for up to 3,000 kg of bombs or two air launched torpedoes. It is also armed with two fixed 23mm cannons mounted in the nose and two in the tail turret.

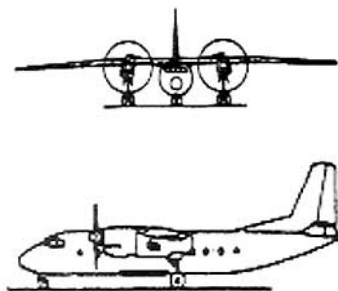
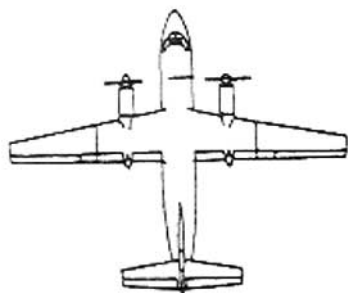
Maximum Speed:	900 km/hr
Weight:	21,000kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	12.3 km
Maximum Range:	2,180 km (w/1,000kg payload)
Combat Range:	Unknown



Y-5 (AN-2 COLT)

The DPRK has about 270 of these aircraft. The Y-5 is a general purpose biplane used mostly to insert SOF troops. It can be used to drop 100/250 kg bombs or to spray chemicals.

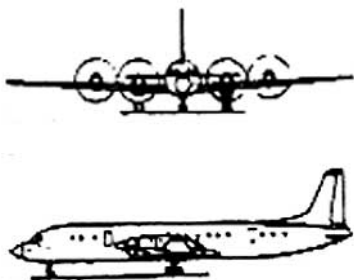
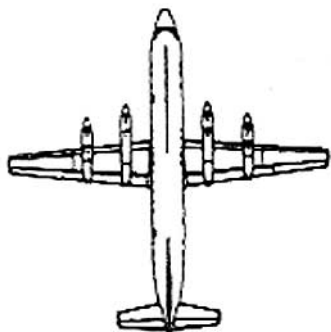
Maximum Speed:	220 km/hr
Weight:	5,250kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	3.5 km
Maximum Range:	Unknown
Combat Range:	450 km



AN-24 COKE

The DPRK has about 6 of these aircraft. The An-24 is a short range transport aircraft.

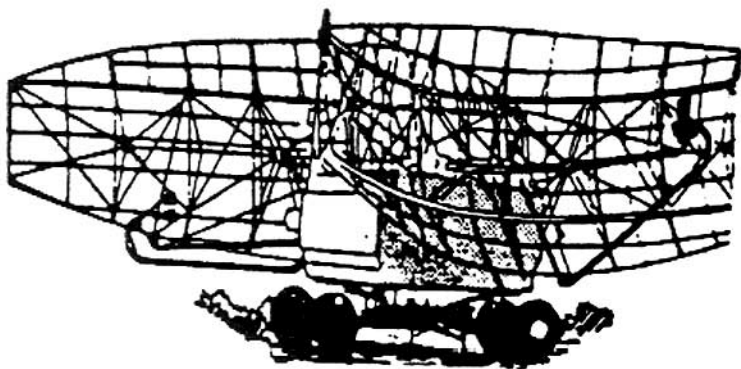
Maximum Speed:	484 km/hr
Weight:	21,800kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	8.75 km
Maximum Range:	Unknown
Combat Range:	Unknown



IL-18 COOT

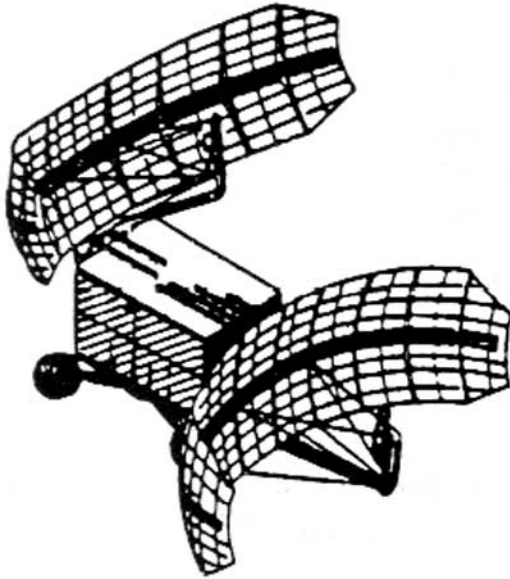
The DPRK has 2 of these aircraft. The Il-18 is a medium transport aircraft, which can carry up to 90 troops.

Maximum Speed:	675 km/hr
Weight:	64,000kg (loaded)
Maximum Ceiling:	Unknown
Service Ceiling:	8-10 km
Maximum Range:	Unknown
Combat Range:	3,700 km (loaded)



BACK NET

Type:	EW/GCI
Frequency Band:	E
Maximum Range:	300 km
Associated With:	SA-5
Comments:	3-6 rpm Scan



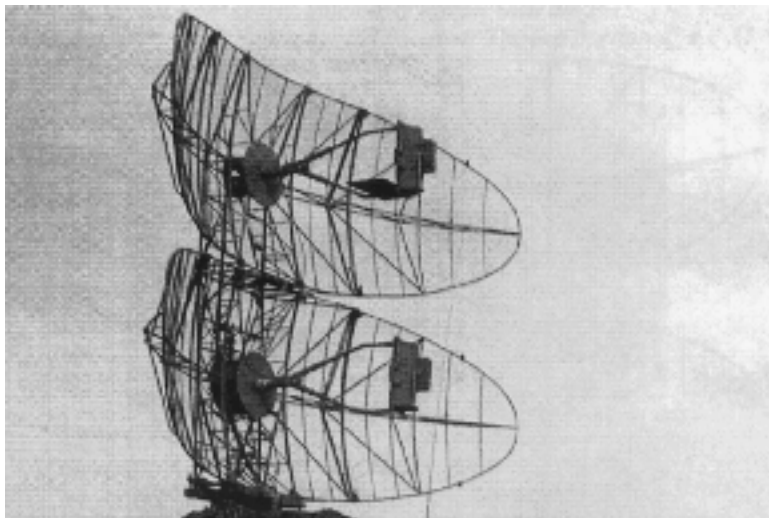
BAR LOCK

Name: P-35/37
Type: EW
Frequency Band: E/F
Maximum Range: 200 km
Associated With: SA-5
Comments: 1 mw/b power, PRF 375pps, 7 rpm Scan,
BW .7deg, PW 1.5, 4.5 us, Accuracy range
350m-AZ .14 deg



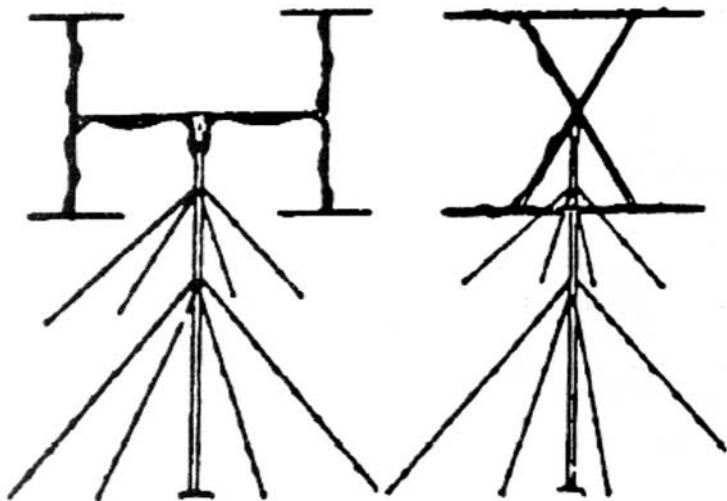
FAN SONG A/B/C/E/F

	A/B	C/E	F
Type:	FC/TRK	FC/TRK	FC/TRK
Frequency Band:	E/F	G	E/F
Maximum Range:	60-120 km	70-145 km	70-145 km
Associated With:	SA-2	SA-2	SA-2
Comments:			
FAN SONG A/B:	600kw power, Vert Ant BW 10 10x2deg Hort Ant BW 2x10deg, Scan 15.5-17HZ		
FAN SONG C/E:	1.0mw power, Vert Ant BW 7.5x1.5deg Hort Ant BW 11.5x7.5, Scan 15.5-17HZ PRF 828-1440 Search, 1656-2880 Trk PW .4-1.2ms us, .2-.9ms us		
FAN SONG F:	600kw power, Vert Ant BW 10 10x2deg Hort Ant BW 2x10deg, Scan 15.5-17HZ		
(guidance):	PRF 44pps		



FLAT FACE

Name: P-15
Type: EW/ACQ
Frequency Band: C
Maximum Range: 200 km
Associated With: SA-3, Guns
Comments: Power 380kw, BW AZ 4.3deg-ELEV 4.3 deg
PW 2us, PRF 200-700pps, 70km range at
300m alt, accuracy 650m range, 1.8 deg AZ



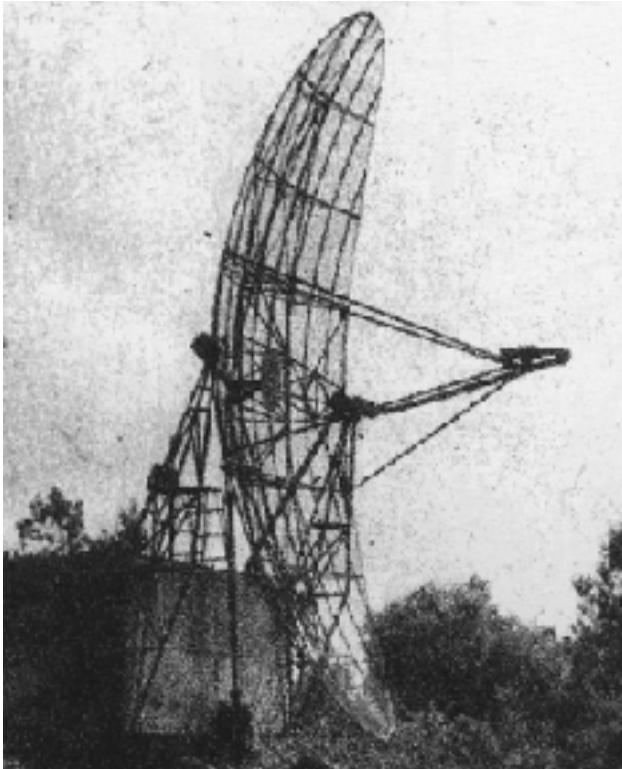
KNIFE REST A/B/C

	A	B/C
Name:	P-8 Dolfin	P-10
Type:	EW	EW
Frequency Band:	A	A
Maximum Range:	75 km	70 km
Associated With:	SA-2	SA-2
Comments:	75kw power, PW 4-12us	



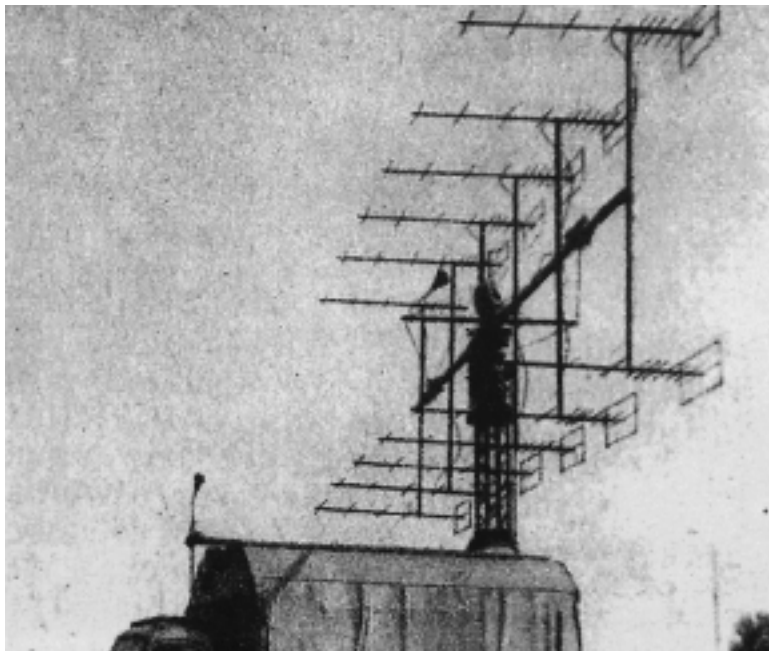
LOW BLOW

Type:	FC	Trk/FC	Guid
Frequency Band:	I	I	D
Maximum Range:	40 km	40-85 km	29 km
Associated With:	SA-3	SA-3	SA-3
Comments:	Power 250kw, PRF 1750-3500pps, PW .25-5ms(us), BW 12x1.5, Scan (trough) 16HZ		
FC	PRF 3560-3585HZ, Scan (Para) 25HZ		
Trk/FC			



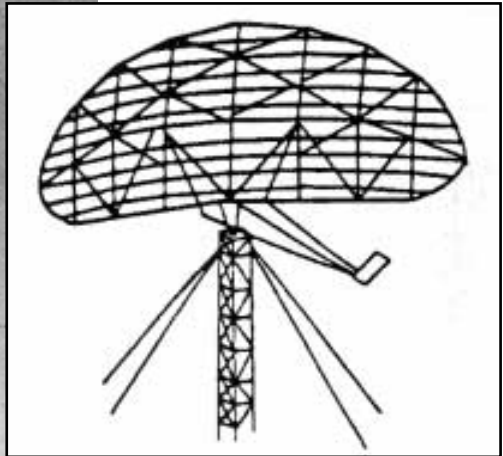
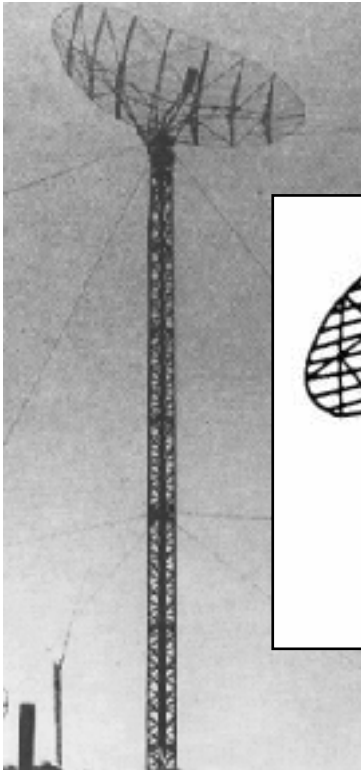
SIDE NET

Name:	PRV-11
Type:	Height
Frequency Band:	E
Maximum Range:	28 km
Associated With:	SA-2/3/5
Comments:	Max altitude 32km



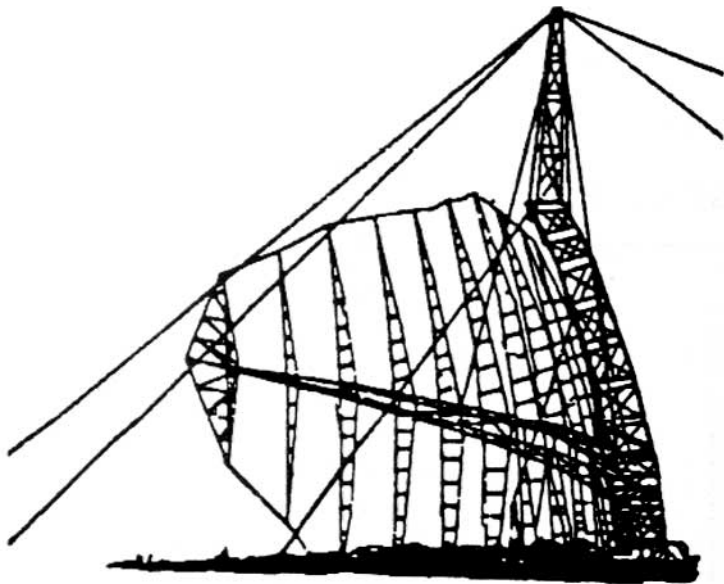
SPOON REST A/C/D

Name: P-12
Type: ACQ/EW
Frequency Band: A
Maximum Range: 200 km
Associated With: SA-2/8
Comments: Power 314kw, BW 6x22.5, PRF 310-400pps,
PW 4-6us, Max Alt 32km, Scan 2-6rpm



SQUAT EYE

Name:	P-15M(2)
Type:	EW
Frequency Band:	C
Maximum Range:	128 km
Associated With:	SA-3/5
Comments:	Power 380kw



TALL KING

Name:	P-14
Type:	BW
Frequency Band:	A
Maximum Range:	605 km
Associated With:	SA-5
Comments:	Scan 2-6rpm

OTHER RADAR SYSTEMS

RADAR	Type	Freq Band	Maximum Range	Associated With	Comments
BACK TRAP	EW/ACQ	E	410km	SA-5	Power: 2mw; Scan: 6rpm
BIG BACK	EW/GCI	L	600km	SA-5	
DOG EAR	ACQ	G	50km 35km	SA-9/13 ZSU-23-4	
GIN SLING (range meas) (Msl Guidance)	FC/TRK	E/F I/J D	100+km	HQ-2	(Main R/T) (Range Measurement)
ODD PAIR	Height	E		SA-5	Scan: 3-6rpm
SJ-202	FC/ACQ		115km	HQ-2	
SQUARE PAIR	FC	H	255km (160-270)	SA-5	
TIN SHIELD	EW/GCI		200km	SA-2/3/5	

LINE DIAGRAM UNAVAILABLE

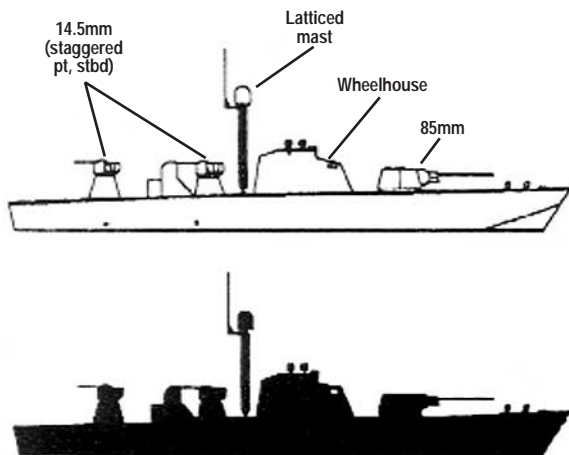
SOHO FF

LOA/Beam/Draft:	242.1x50.9x12.1 ft
Missile Launchers:	4xCSS-N-1 single tube SSM
Guns:	100mm single barrel, 2x37mm, 30mm, and 25mm twin barrel
Other Weapons:	4xRBU-1200; mines; d.c.
Maximum Speed:	23kts
Aircraft:	Platform for 1 medium helo



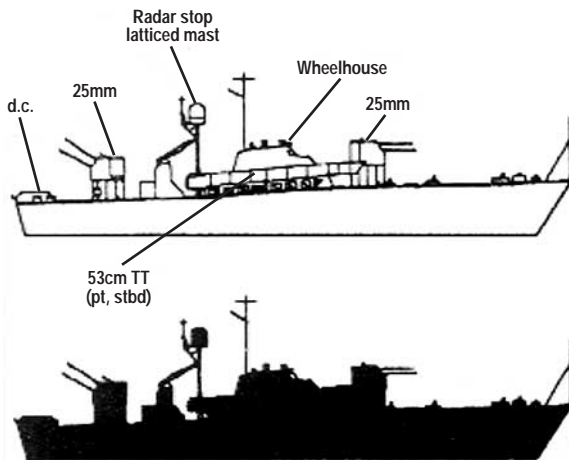
NAJIN FFL

LOA/Beam/Draft:	335x33x10 ft
Missile Launchers:	2xCSS-N-1 single tube SSM
Guns:	2x100mm single barrel 2x57mm, 30mm, and 25mm twin barrel 4x14.5mm quad barrel
Other Weapons:	4xRBU-1200; mines; d.c.
Maximum Speed:	24.3kts
Aircraft:	None



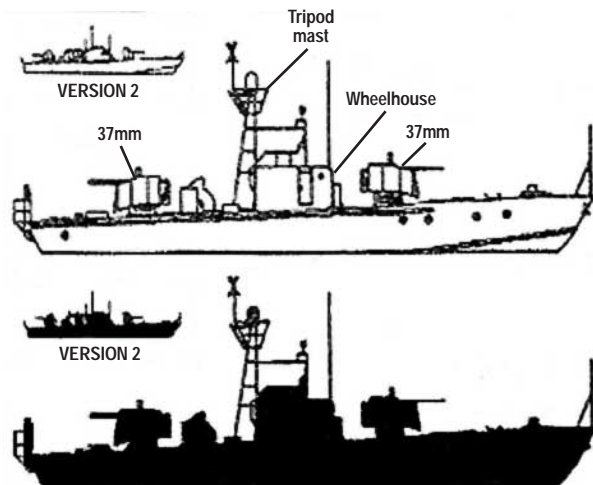
CHONGJIN PB

LOA/Beam/Draft:	85.3x19x6.6 ft
Missile Launchers:	None
Guns:	85mm single barrel tank turret 2x14.5mm twin barrel
Other Weapons:	None
Maximum Speed:	40kts
Aircraft:	None



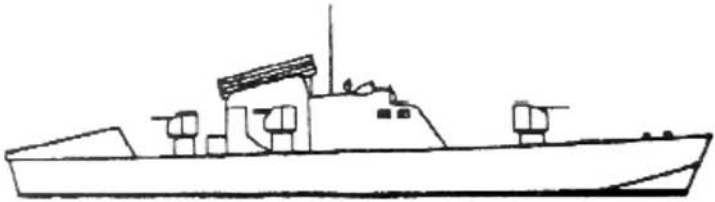
P-6 PB/PT

LOA/Beam/Draft:	83.7x20.3x5.9 ft
Missile Launchers:	None
Guns:	2x25mm twin barrel 2x14.5mm twin barrel
Other Weapons:	2x53cm single torpedo tubes (PT)
Maximum Speed:	43kts
Aircraft:	None



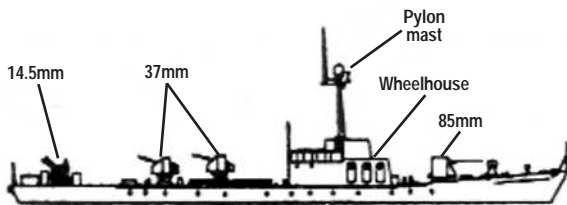
SHANTOU PB

LOA/Beam/Draft:	82x17.4x6.9 ft
Missile Launchers:	None
Guns:	2x37mm twin barrel or 2x37mm single barrel and 2x25mm twin barrel
Other Weapons:	None
Maximum Speed:	24kts
Aircraft:	None



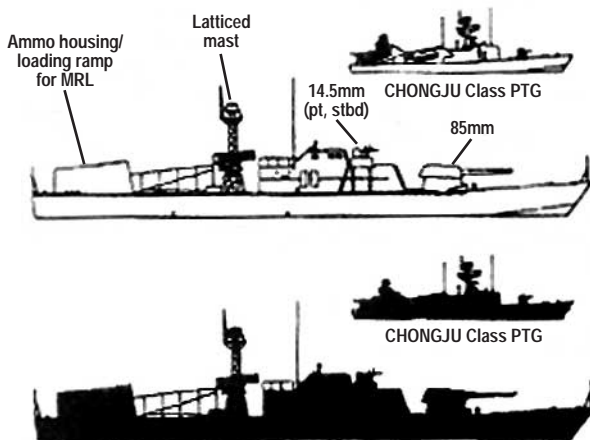
CHAHO PB

LOA/Beam/Draft:	85.3x19x6.6 ft
Missile Launchers:	None
Guns:	2x14.5mm twin barrel
Other Weapons:	122mm (BM-21) MRL
Maximum Speed:	40kts
Aircraft:	None



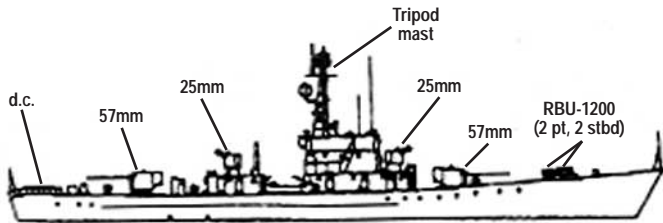
CHODO PC

LOA/Beam/Draft:	140.1x19x6.2 ft
Missile Launchers:	None
Guns:	85mm single barrel 2x37mm single barrel and 14.5mm quad barrel
Other Weapons:	Mines
Maximum Speed:	20kts
Aircraft:	None



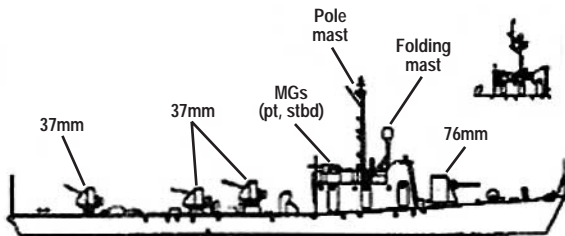
CHONGJU PC/PT/PTG/WPC

LOA/Beam/Draft:	139.8x24x6.6 ft
Missile Launchers:	4xCSS-N-1 single tube (PTG)
Guns:	85mm, 2x37mm, 25mm, and 14.5mm (PC/WPC) 2x30mm (PT/PTG)
Other Weapons:	2 possible RBU-1200 (PC/WPC) and at least 2 torpedoes (PT)
Maximum Speed:	22.5kts
Aircraft:	None



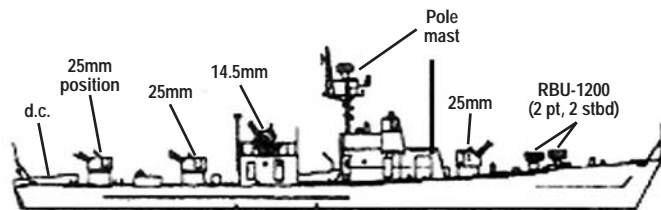
HAINAN PC

LOA/Beam/Draft:	192.9x23.6x14.1 ft
Missile Launchers:	None
Guns:	2x57mm and 25mm twin barrel
Other Weapons:	4xRBU-1200 5 tube launcher, mines, d.c.
Maximum Speed:	30.5kts
Aircraft:	None



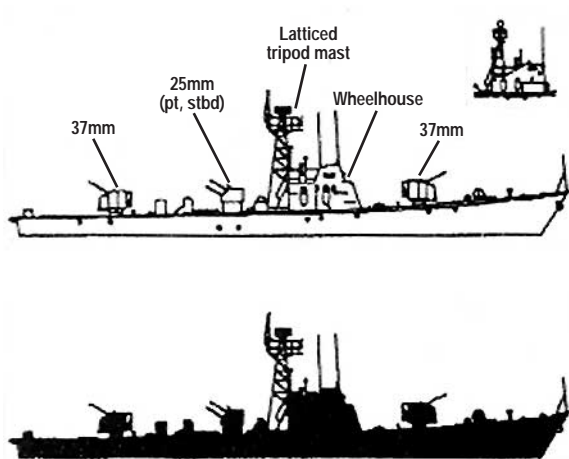
K-48 PC

LOA/Beam/Draft:	125x18x5.6 ft
Missile Launchers:	None
Guns:	76mm and 3x37mm single barrel 2x14.5mm twin barrel
Other Weapons:	Mines
Maximum Speed:	18kts
Aircraft:	None



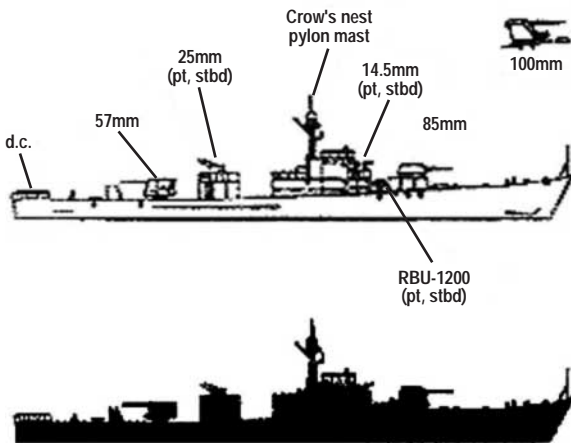
S.O. 1 PC

LOA/Beam/Draft:	137.8x20x7.9 ft
Missile Launchers:	None
Guns:	100mm (one unit) 76mm single barrel 3x25mm twin barrel 14.5mm quad mount
Other Weapons:	4xRBU-1200, mines, d.c.
Maximum Speed:	28.5kts
Aircraft:	None



SHANGHAI II PC

LOA/Beam/Draft:	127.3x17.7x5.3 ft
Missile Launchers:	None
Guns:	2x37mm and 25mm twin barrel At least one 82mm RR (on some)
Other Weapons:	Mines, d.c.
Maximum Speed:	30kts
Aircraft:	None



TAECHONG I/II PC

	Taechong I	Taechong II
LOA/Beam/Draft:	197.5x23.6x6.6 ft	199.5x23.6x6.6 ft
Missile Launchers:	None	None
Guns:	100mm or 85mm single barrel 25mm twin barrel 57mm twin barrel 14.5mm twin barrel	100mm or 85mm single barrel 57mm twin barrel 2x30mm twin barrel 14.5mm twin barrel
Other Weapons:	2xRBU-1200, mines, d.c.	d.c.
Maximum Speed:	30kts	30kts
Aircraft:	None	None

LINE DIAGRAM UNAVAILABLE

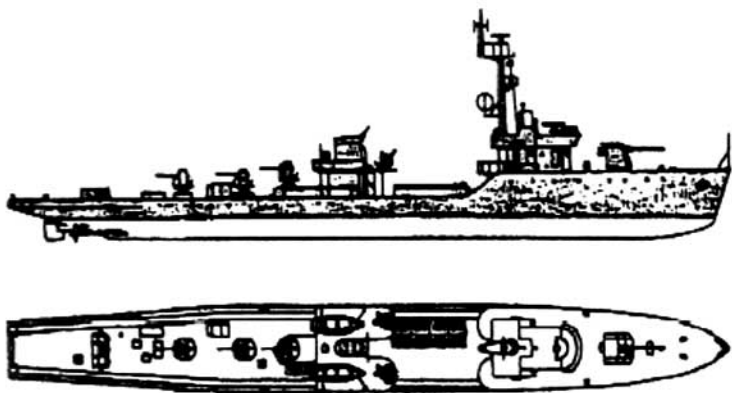
MAYANG PG

LOA/Beam/Draft:	196.9x32.8x9.8 ft
Missile Launchers:	None
Guns:	85mm single barrel 57mm and 4x14.5mm twin barrel
Other Weapons:	None
Maximum Speed:	16kts
Aircraft:	None



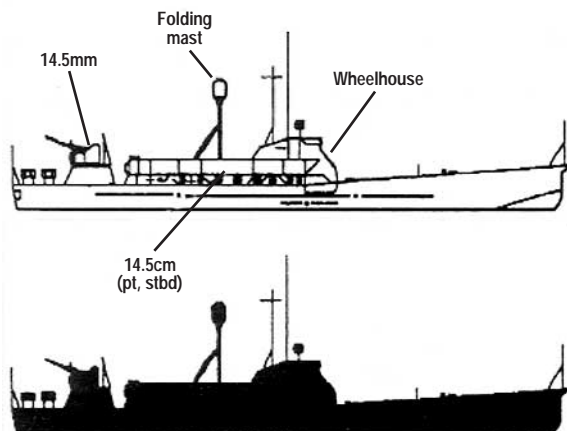
SARIWON PG

LOA/Beam/Draft:	201.8x24.6x7.9 ft
Missile Launchers:	None
Guns:	85mm single barrel 1 or 2x57mm twin barrel 2x37mm twin barrel 4x14.5mm quad barrel
Other Weapons:	RBU-1200, mines
Maximum Speed:	18kts
Aircraft:	None



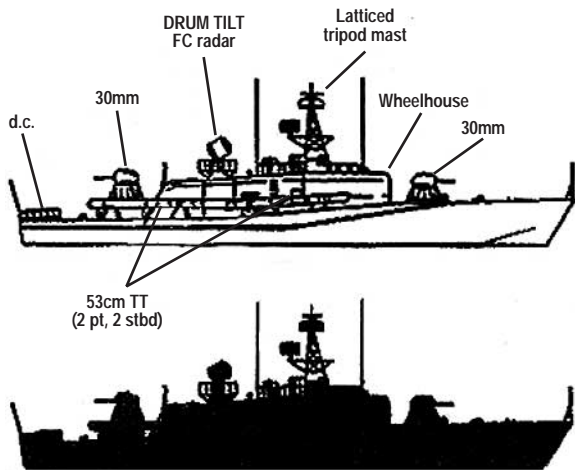
T CLASS PG

LOA/Beam/Draft:	203.4x23.6x7.9 ft
Missile Launchers:	None
Guns:	85mm single barrel 2x37mm twin barrel 4x14.5mm quad barrel
Other Weapons:	Mines
Maximum Speed:	18kts
Aircraft:	None



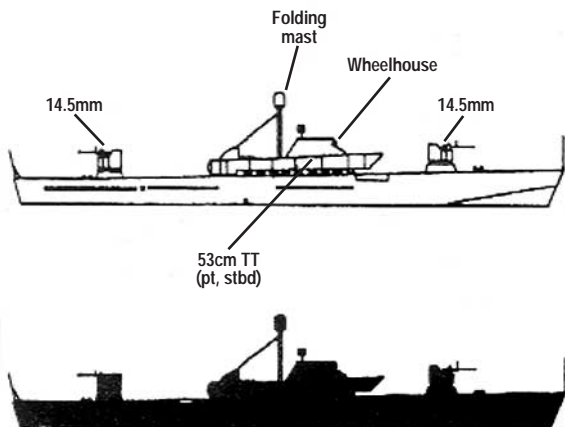
P-4 PT

LOA/Beam/Draft:	63.3x12.1x3.3 ft
Missile Launchers:	None
Guns:	2x14.5mm twin barrel
Other Weapons:	2x45cm single torpedo tubes
Maximum Speed:	55kts



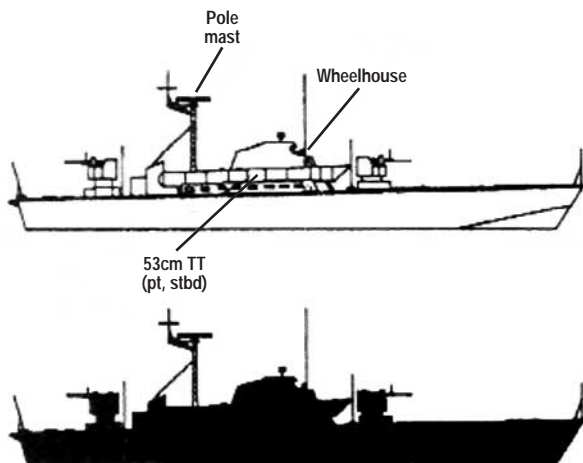
SHERSHEN PT

LOA/Beam/Draft:	113.8x22x6.6 ft
Missile Launchers:	None
Guns:	2x30mm twin barrel
Other Weapons:	4x53cm single topedo tubes
Maximum Speed:	45kts
Aircraft:	None



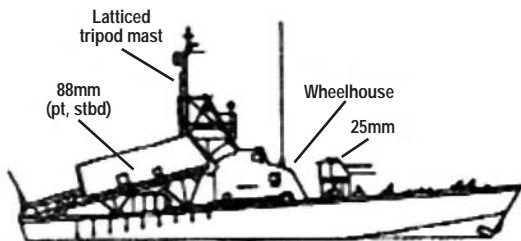
SINHUNG PT/PTH/WPB/WPBH

LOA/Beam/Draft:	75.5x16.1x4.9 ft
Missile Launchers:	None
Guns:	2x14.5mm twin barrel
Other Weapons:	2x53cm single torpedo tubes (PT/PTH)
Maximum Speed:	52kts (57kts PTH)
Aircraft:	None



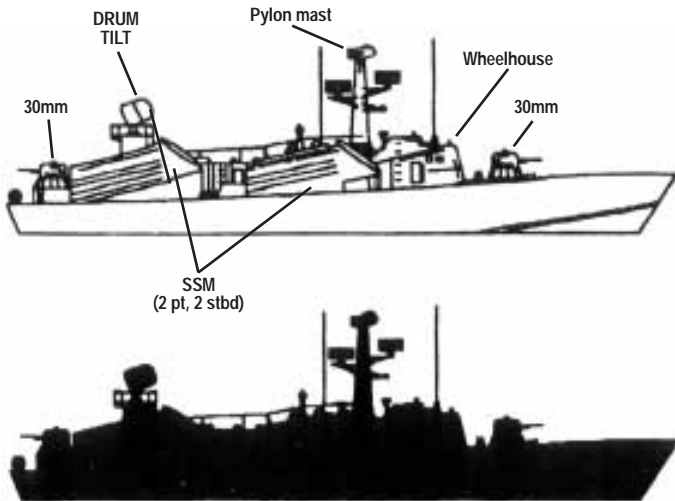
SINNAM PT

LOA/Beam/Draft:	81.4x20x5.9 ft
Missile Launchers:	None
Guns:	2x14.5mm twin barrel
Other Weapons:	2x53cm single topedo tubes, deck rails
Maximum Speed:	43kts
Aircraft:	None



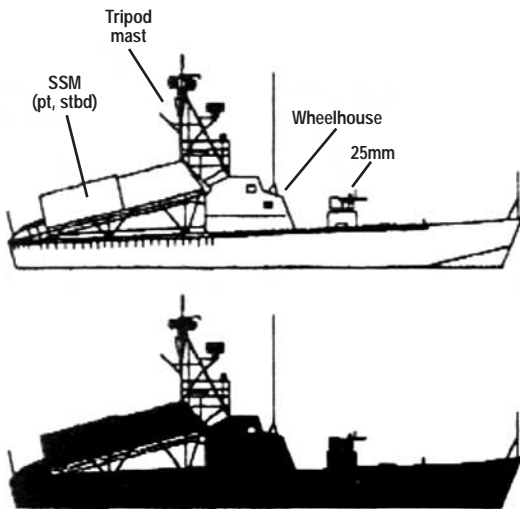
KOMAR PTG

LOA/Beam/Draft:	83.7x23x6.6 ft
Missile Launchers:	2xCSS-N-1 single tube SSM
Guns:	25mm twin barrel
Other Weapons:	None
Maximum Speed:	40.5kts
Aircraft:	None



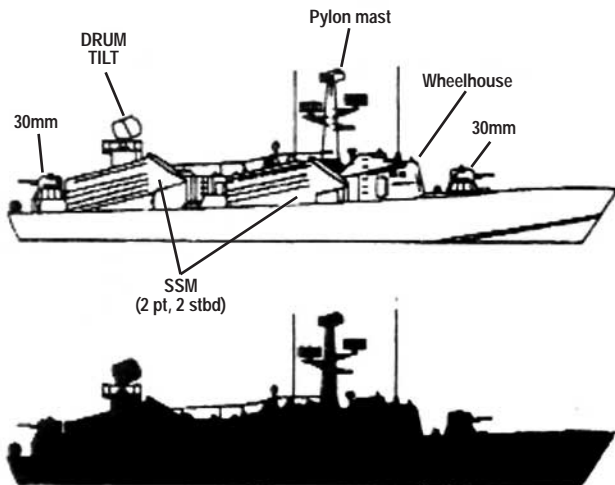
OSA I PTG

LOA/Beam/Draft:	126.6x24.9x8.9 ft
Missile Launchers:	4xSS-N-2 or CSS-N-1 single tube SSM
Guns:	2x30mm or 25mm twin barrel
Other Weapons:	None
Maximum Speed:	35kts
Aircraft:	None



SOHUNG PTG

LOA/Beam/Draft: 84x24x6.6 ft
Missile Launchers: 2xCSS-N-1 single tube SSM
Guns: 14.5mm or 25mm twin barrel
Other Weapons: None
Maximum Speed: 40kts
Aircraft: None



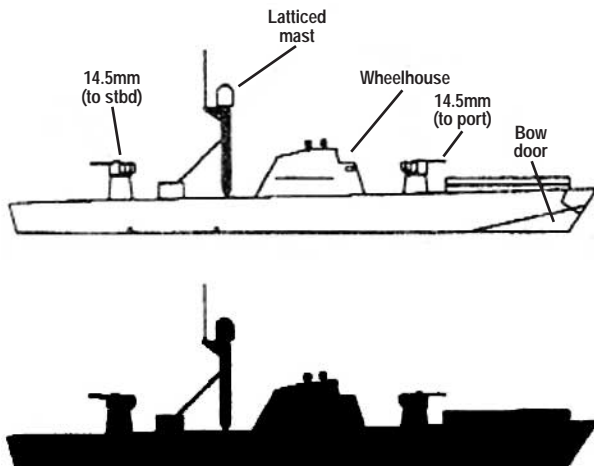
SOJU PTG

LOA/Beam/Draft:	138.1x25.6x9.8 ft
Missile Launchers:	4xCSS-N-1 single tube SSM
Guns:	2x30mm twin barrel
Other Weapons:	None
Maximum Speed:	33kts
Aircraft:	None

LINE DIAGRAM UNAVAILABLE

HUNGNAM LCM

LOA/Beam/Draft:	55.8x14.1x3.9 ft
Missile Launchers:	None
Guns:	2x14.5mm twin barrel
Other Weapons:	None
Maximum Speed:	9kts
Aircraft:	None



NAMPO LCP

LOA/Beam/Draft:	85.3x19x6.6 ft
Missile Launchers:	None
Guns:	2x14.5mm twin barrel
Other Weapons:	None
Maximum Speed:	40kts
Aircraft:	None

LINE DIAGRAM UNAVAILABLE

KONG BANG I/II/III LCPA

	Kong Bang I	Kong Bang II	Kong Bang III
LOA/Beam/Draft:	75.5x29.5 ft	68.9x26.2 ft	60.7x23 ft
Missile Launchers:	None	None	None
Guns:	None	None	None
Other Weapons:	None	None	None
Maximum Speed:	52kts	52kts	50kts
Aircraft:	None	None	None

LINE DIAGRAM UNAVAILABLE

KOWAN ASR

LOA/Beam/Draft: 275.6x46.3x13.1 ft
Missile Launchers: None
Guns: 6x14.5mm twin barrel
Other Weapons: None
Maximum Speed: 20kts
Aircraft: None

LINE DIAGRAM UNAVAILABLE

KIMJIN WPB

LOA/Beam/Draft: 59.1x9.8x4.9 ft
Missile Launchers: None
Guns: 2x14.5mm twin barrel
Other Weapons: None
Maximum Speed: 46kts
Aircraft: None

LINE DIAGRAM UNAVAILABLE

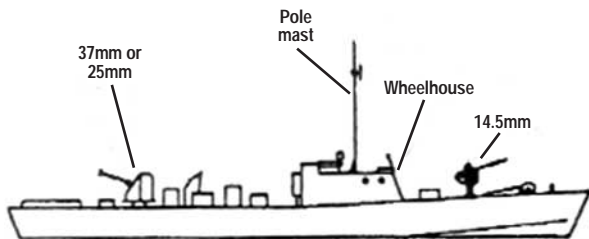
YONGDO WPB

LOA/Beam/Draft: 53.5x14.4x2.3 ft
Missile Launchers: None
Guns: 14.5mm twin barrel
Other Weapons: None
Maximum Speed: 25kts
Aircraft: None

LINE DIAGRAM UNAVAILABLE

HANTAE LCU

LOA/Beam/Draft: 154.2x21.3x5.6 ft
Missile Launchers: None
Guns: 4x25mm twin barrel
Other Weapons: None
Maximum Speed: 22.5kts
Aircraft: None



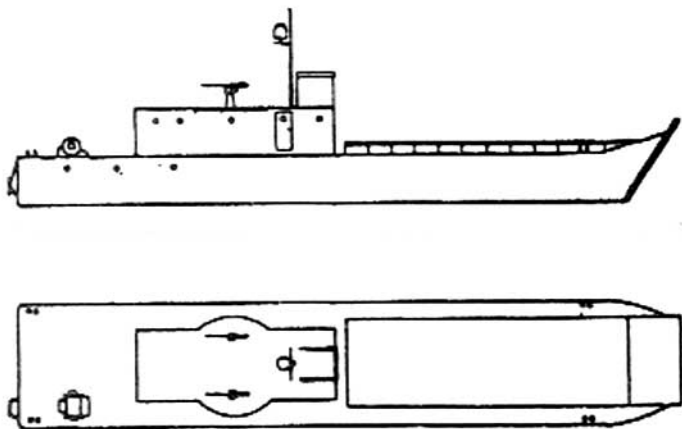
YUKTO I/II MSI

	Yukto I	Yukto II
LOA/Beam/Draft:	78.7x13.1x5.6 ft	69x13.1x5.6 ft
Missile Launchers:	None	None
Guns:	14.5mm twin barrel 37mm single barrel or 25mm twin barrel	14.5mm twin barrel
Other Weapons:	Mines	Mines
Maximum Speed:	18kts	18kts
Aircraft:	None	None

LINE DIAGRAM UNAVAILABLE

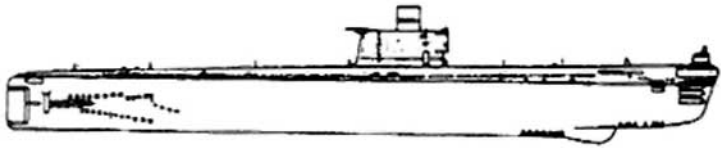
NAMPO A/B LCPA

LOA/Beam/Draft: 55.8x22.6x-- ft
Missile Launchers: None
Guns: Unknown
Other Weapons: None
Maximum Speed: 52kts
Aircraft: None



HANCHON LCU

LOA/Beam/Draft: 117.1x25.9x3.9 ft
Missile Launchers: None
Guns: 14.5mm
Other Weapons: None
Maximum Speed: 10kts
Aircraft: None



ROMEO SS

LOA/Beam/Draft:	252x23x20 ft
Propulsion:	Diesel electric; 2 shafts
Missile Launchers:	None
Torpedoes:	53cm; 8 tubes (6 bow, 2 stern)
Maximum Speed:	16kts surfaced; 13kts submerged



WHISKEY SS

LOA/Beam/Draft: 249x21x16 ft
Propulsion: Diesel electric; 2 shafts
Missile Launchers: None
Torpedoes: 53cm; 6 tubes (4 bow, 2 stern)
Maximum Speed: 17kts surfaced; 13kts submerged

LINE DIAGRAM UNAVAILABLE

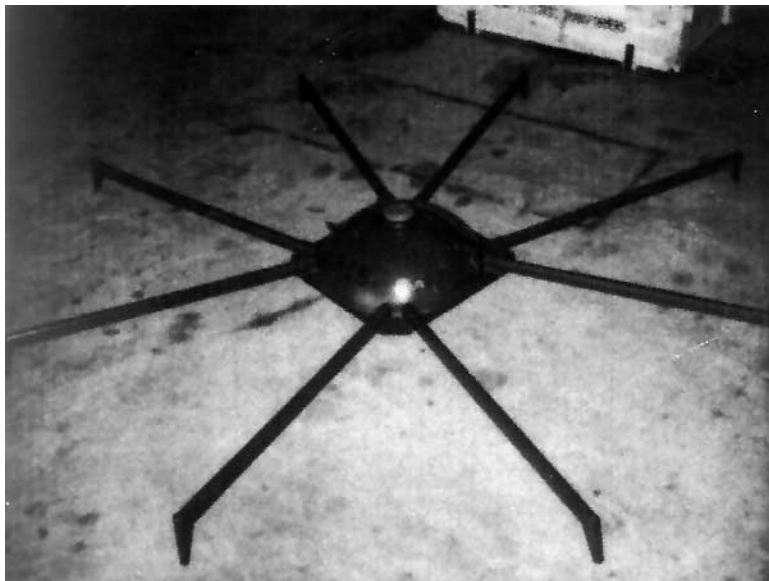
YUGO SSM

LOA/Beam/Draft: 66x9.8x-- ft
Propulsion: Diesel electric
Missile Launchers: None
Torpedoes: No known capability
Maximum Speed: 11kts surfaced; 8kts submerged

THE NAVAL MINE THREAT TO AMPHIBIOUS OPERATIONS

Naval mines include the following types:

- Deep Water:** +200 ft; rising mines, moored mines, and some bottom mines.
- Shallow Water:** 200 to 40 ft; bottom mines, moored mines, and rising mines.
- Very Shallow Water:** 40 to 10 ft; bottom mines, moored mines, controlled mines, and buried mines.
- Surf Zone:** 10 ft to high water mark; anti-invasion mines, controlled mines.
- Craft Landing Zone:** Beach; buried mines, obstacles.



ALCM-82 SHALLOW WATER MINE

The ALCM-82 is a shallow water blast mine.

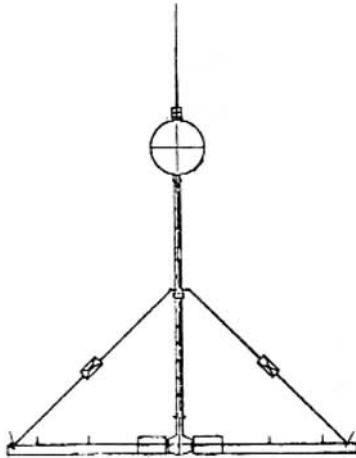
Mine Case:	Steel
Color:	Olive drab
Fuze Type:	Unknown tilt rod
Actuation Force:	15-20kg
Explosive Type:	Unknown
Explosive Weight:	14.5kg



PDM-1M SHALLOW WATER MINE

The PDM-1M is a shallow water blast mine.

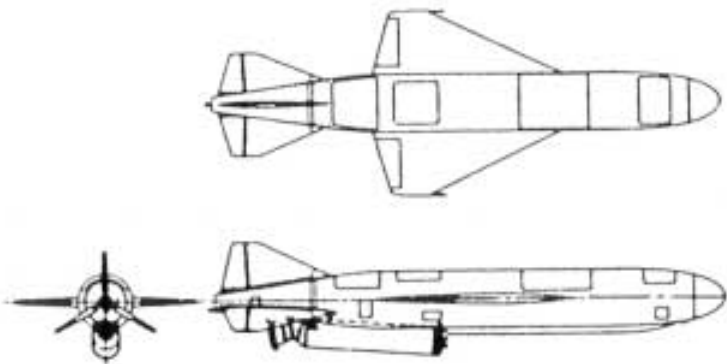
Mine Case:	Steel
Color:	Olive drab
Fuze Type:	VPDM-1M tilt rod
Actuation Force:	18-26kg
Explosive Type:	TNT
Explosive Weight:	10kg



PDM-2 SHALLOW WATER MINE

The PDM-2 is a shallow water blast mine.

Mine Case:	Steel
Color:	Olive drab
Fuze Type:	VPDM-2 tilt rod
Actuation Force:	40-50kg
Explosive Type:	TNT
Explosive Weight:	15kg



CSS-N-1 SCRUBBRUSH

The CSS-N-1 is the Chinese version of the Russian-manufactured SS-N-2a STYX naval antiship cruise missile.

Max Speed: 0.9 Mach

Cruise Altitude: 330, 660, or 1,000 ft

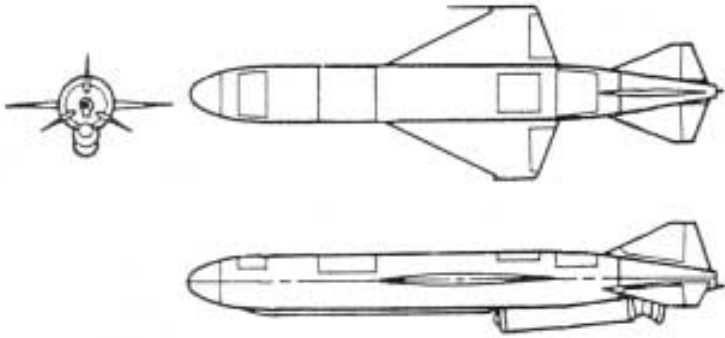
Maximum

Effective Range: 25 nm

Warhead: HE 1,130 lbs

Fuze: Impact

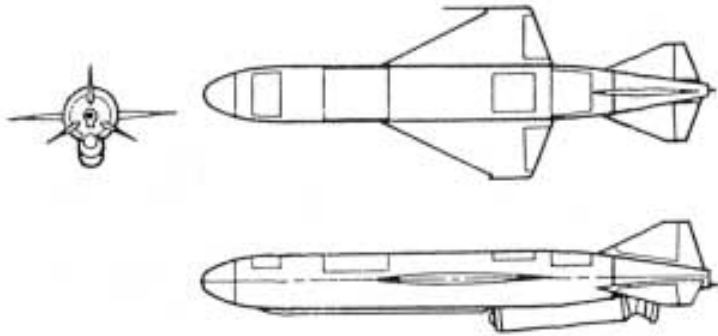
Propulsion: Liquid rocket sustainer with expendable solid rocket booster



CSSC-2 SILKWORM

The CSSC-2 is a Chinese land-based coastal defense antiship cruise missile. It is fired from a truck-towed launcher or tracked TEL.

Max Speed:	0.9 Mach
Cruise Altitude:	330, 660, or 1,000 ft
Maximum Effective Range:	45 nm
Warhead:	HE 1,130 lbs
Fuze:	Impact
Propulsion:	Liquid rocket sustainer with expendable solid rocket booster

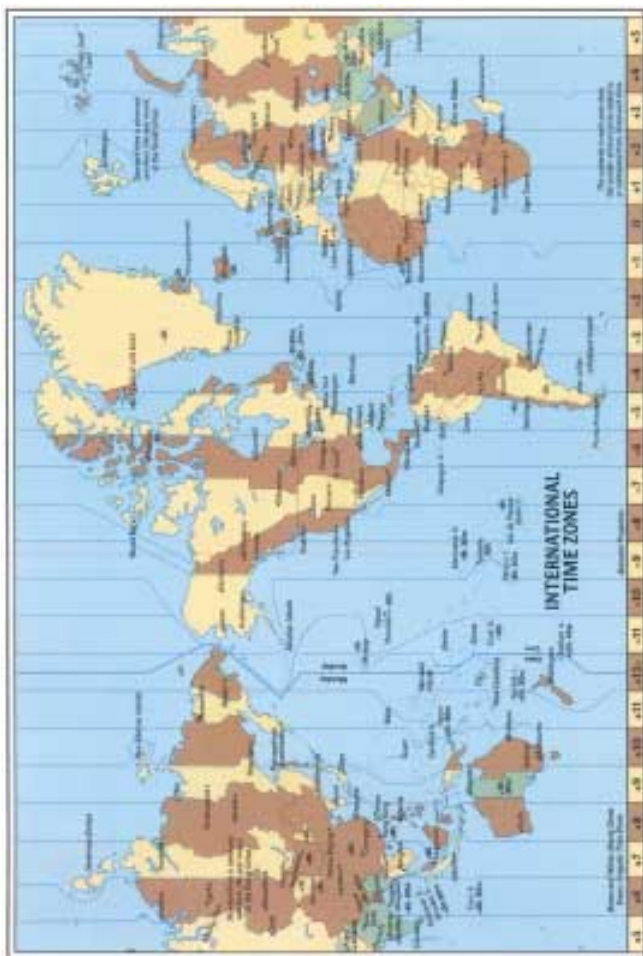


CSSC-3 SEERSUCKER

The Chinese SEERSUCKER is an extended-range version of the SILKWORM coastal defense antiship cruise missile. It is fired from a truck-towed launcher or tracked TEL.

Max Speed:	0.9 Mach
Cruise Altitude:	330, 660, or 1,000 ft
Maximum Effective Range:	45 nm
Warhead:	HE 1,130 lbs
Fuze:	Impact
Propulsion:	Liquid rocket sustainer with expendable solid rocket booster

APPENDIX B: International Time Zones



APPENDIX C: Conversion Charts

When You Know

Units of Length	Multiply by	To find
Millimeters	0.04	Inches
Centimeters	0.39	Inches
Meters	3.28	Feet
Meters	1.09	Yards
Kilometers	0.62	Miles
Inches	25.40	Millimeters
Inches	2.54	Centimeters
Feet	30.48	Centimeters
Yards	0.91	Meters
Miles	1.61	Kilometers

Units of Area

Sq. Centimeters	0.16	Sq. Inches
Sq. Meters	1.20	Sq. Yards
Sq. Kilometers	0.39	Sq. Miles
Hectares	2.47	Acres
Sq. Inches	6.45	Sq. Cm
Sq. Feet	0.09	Sq. Meters
Sq. Yards	0.84	Sq. Meters
Sq. Miles	2.60	Sq. Km
Acres	0.40	Hectares

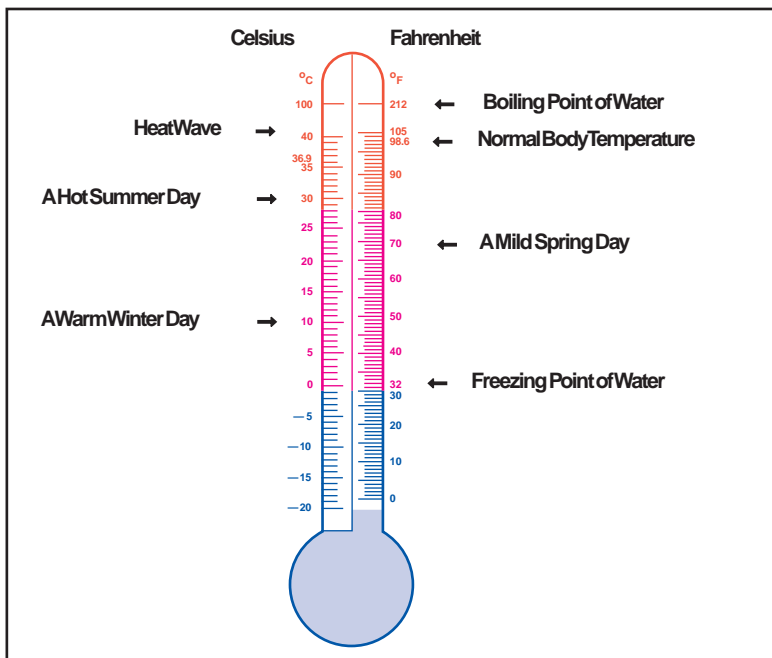
Units of Mass and Weight

Grams	0.035	Ounces
Kilograms	2.21	Pounds
Tons (100kg)	1.10	Short Tons
Ounces	28.35	Grams
Pounds	0.45	Kilograms
Short Tons	2.12	Tons

Units of Volume	Multiply by	To find
Milliliters	0.20	Teaspoons
Milliliters	0.06	Tablespoons
Milliliters	0.03	Fluid Ounces
Liters	4.23	Cups
Liters	2.12	Pints
Liters	1.06	Quarts
Liters	0.26	Gallons
Cubic Meters	35.32	Cubic Feet
Cubic Meters	1.35	Cubic Yards
Teaspoons	4.93	Milliliters
Tablespoons	14.78	Milliliters
Fluid Ounces	29.57	Milliliters
Cups	0.24	Liters
Pints	0.47	Liters
Quarts	0.95	Liters
Gallons	3.79	Liters
Cubic Feet	0.03	Cubic Meters
Cubic Yards	0.76	Cubic Meters

Units of Speed

Miles per Hour	1.61	Km per Hour
Km per Hour	0.62	Miles per Hour



Temperature Conversions

To convert Celsius to degrees Fahrenheit, multiply by 1.8 and add 32.
 To convert Fahrenheit to degrees Celsius, subtract 32 and divide by 1.8.

APPENDIX D: Korean Language

Pronunciation Guide

Consonants

ㄱ	k-keep <or> g-go
ㄴ	n-night
ㄷ	d-due <or> t-tone <or> t-cot
ㄹ	r-red <or> l-spell
ㅁ	m-mother
ㅂ	b-boy <or> m-calm
ㅅ	s-sue <or> sh-she <or> t-cot
ㅇ	silent before a vowel <or> like ng-ring after a vowel
ㅈ	j-jim <or> t-cot
ㅊ	ch-chip <or> t-cot
ㅋ	k-kilometer
ㅌ	t-top <or> t-cot
ㅍ	p-pa
ㅎ	h-hope

Note: ㄷ, ㅅ, ㅈ, ㅊ, ㅌ all may make a t-cot sound. This occurs when they appear as the last consonant in a syllable. For example:

곳	goat = PLACE
곧	goat = IMMEDIATELY
꽃	goat = FLOWER

If the next syllable begins with a vowel you will hear the normal consonant sound there.

Vowels

아	a-father = a
애	a-had = ae
야	ya-yacht = ya
어	u-up = o
에	a-hate = e
어	yu-yup = yo
오	o-go = o
요	yo-yoyo = yo
우	u-blue = oo
유	u-you = yoo
이	o-good = u
이	e-be = ee <or> i-bid =i
워	wo-woe = wo
와	wa-wad = wa

NOTE: You must acquaint yourself with this guide or the book will be useless. The words which sound like *goat* will be spelled “got.” A word sounding like *gut* will also be spelled “got.” A word sounding like *take* will be spelled “tek.” Practice as much as possible!

Hostile Situations

Confrontation

Stop.	멈춰	mom-cho-ee
Stop action.	정지	jong-jee
Don't shoot.	쏘지마	so-jee-ma
Don't move.	움직이지마	oom-jeek-ee-jee-ma
Don't approach.	접근하지마	jop-goon-ha-jee-ma
Don't make a sound.	소리 내지마	so-ree-nae-jee-ma
Drop your weapons.	무기 내려놔	moo-gee nae-ryo-no-wa
Hands up.	손 들어	son-du-ro
Come out.	나오라	na-o-ra
Come forward.	앞으로 나와	a-pu-ro na-wa
Come here.	이리와	ee-dee-wa
Surrender.	항복하라	hang-bok-ha-ra

Turn around.	뒤로돌아	twee-ro-do-ra
Lie face down.	엎들러	op-du-ryo
Hands behind your back.	손을 뒤로	son-ul twee-ro
Obeys orders.	명령대로 하라	myong-ryong-dae-ro ha-ra
Do not resist.	반항하지마	ban-hang-ha-jee-ma
You won't be harmed.	해치지않겠어	hae-chee-jee-an-gey-so
You are a prisoner.	자네는 포로이야	ja-nae-nun po-ro-ee-ya

Commands

Do it now.	지금 해	chee-goom-hae
Follow orders.	명령을 따라	myong-ryong-ul da-ra
Stand in line.	줄로서	joo-lo-so
Submit to search.	탐색에 응해	tam-saek-e-ung-hae
Quickly.	빨리	bal-loo
Don't talk.	말하지마	mal-ha-jee-ma
Be still.	가만히 있어	ga-man-hee ee-so
Give me . . .	—줘	. . . joo-o
Give me ID.	신분증 줘	shin-boon-chung joo-o
Give me papers.	서류 줘	so-ryo joo-o
Give me your things.	소지품 줘	so-jee-poom joo-o
Empty your pockets.	호주머니 털어나	ho-joo-mo-nee to-ro-na
Move.	움직여라	oom-jeek-yo-ra
Get out of my way.	비켜라	pee-kyo-ra
Come here.	이리와	ee-dee-wa
Stay here.	여기 있어	yo-gee ee-so
Stay there.	거기 있어	ko-gee ee-so
Lie down.	누워	noo-wo
Sit down.	앉아	an-ja
Eat this.	이거 먹어	ee-go mo-go
Be quiet.	조용해	cho-yong-hae
Get up.	일어나	ee-ro-na
Follow me.	따라와	da-ra-wa

Questions

What is your name?	이름 뭐야	ee-rum moo-o-ya?
What is your rank?	계급 뭐야	kye-goop moo-o-ya?
What is your specialty?	특기가 뭐야	tuk-gee-ga moo-o-ya?
What is your mission?	임무가 뭐야	im-moo-ga moo-o-ya?
Where is your unit?	부대 어디	boo-dae o-dee ee-so?
Who is in charge?	지휘관 누구지요	chee-we-gwan noo-goo-jee-o?
What size unit?	부대 규모	boo-dae gyoo-mo?
What weapons?	무슨 무기	moo-sun moo-gee?
Where is/are the . . . ?	...어디 있어요	. . . o-dee-ee-so-yo?
Weapons	무기	moo-gee
AAA	고사포	go-sa-po
SAMs	지대공유도탄	chee-dae-kong-yoo-do-tan
Rocket launchers	라켓 발사기	ra-kaet bal-sa-gee
Radar sites	방향탐지기	bang-yang-tam-je-gee
Aircraft	비행기	bee-haeng-gee
Tanks	전차	jon-cha
Mine fields	지뢰지대	chee-rey chee-dae
Show me on the map.	지도상에서	chee-do-sang-e-so
	보여주세요	bo-yo-joo-se-yo
Draw a sketch map.	약도 그려주세요	yak-do gu-ryo-joo-se-yo
Give me the information.	정보 줘	jong-bo joo-o

Friendly Situations

Meet/Approach

Hello.	안녕하세요	an-nyong-ha-se-yo
Nice to meet you.	반갑습니다	ban-gap-sum-nee-da
See you again.	다시 뵙시다	ta-shoe bop-shee-da
Thank you.	감사합니다	kam-sa-ham-nee-da
Good bye.	안녕히가세요	an-nyong-hee ka-se-yo
Don't worry.	걱정하지마세요	kok-jong-ha-jee-ma-se-yo
Speak slowly.	천천히 말하세요	chon-chon-hee mal-ha-se-yo
Say/do again.	다시 한번	da-shee han-bon

Request Help

Can you help me?	도와줄수있어요	do-wa-jool-soo-ee-so-yo?
Does anyone speak English?	영어 하는 사람 있어요	yong-o ha-nun sa-ram ee-so-yo?
Have you seen NK soldiers?	민 민군 봤어요	in-min-goon bwa-so-yo?
Have you seen communists?	공산군 봤어요	kong-san-goon bwa-so-yo?
How many people?	몇사람	myot-sa-ram?
Where did they go?	어디로 갔어요	o-dee-ro ka-so-yo?
Where did you come from?	어디서 왔어요	o-dee-so wa-so-yo?
Did you see any ...?	...봤어요	... bwa-so-yo?
Where is/are the ...?	어디 있어요	... o-dee ee-so-yo?
Can you guide me?	안내할수있어요	a-nae-hal-soo-ee-so-yo?
Please give me a ride.	차 태워주세요	cha tae-wo-joo-se-yo
Please give me a map.	지도 주세요	chee-do joo-se-yo
Show me on the map.	지도상에서 보여주세요	chee-do-sang-e-so bo-yo-joo-se-yo
Draw a sketch map.	악도 그리세요	yak-do gu-ree-se-yo
Can you describe?	묘사할수있어요	myo-sa hal-soo-ee-so-yo?
Is he tall?	키가 커요	kee-ga ko-yo?
Is he short?	키가 작아요	kee-ga jak-a-yo?
Is he fat?	키가 작아요	doong-doong-hae-yo?
How old?	몇살이에요	myot-sal-ee-e-yo?
Is it heavy?	무거워요	moo-go-wo-yo?
Is it light?	가벼워요	ka-byo-wo-yo?
Is it big?	커요	ko-yo?
Is it small?	작아요	jak-a-yo?
Do you have food?	음식 있어요	um-sheek ee-so-yo?
Is there water?	물 있어요	mool-ee-so-yo?
Can you give me shelter?	숙소 줄수있어요	sook-so jool-soo-ee-so-yo?
Can we hide here?	여기서 숨을수있어요	yo-gee-so soom-ul-soo-ee-so-yo?
Can we camp here?	여기서 야영할수있어요	yo-gee-so ya-yong-hal-soo-ee-so-yo?
Do you have blankets?	담요 있어요	dam-yo ee-so-yo?
I need medical care.	치료 필요해요	chee-ryo pee-lee-o-hae-yo?

Do you have weapons?	무기 있어요	moo-gee ee-so-yo?
Please give us ammo.	탄약 주세요	tan-yak jo-se-yo
Is there POL?	연유 있어요	yon-yoo ee-so-yo?
My vehicle broke down.	차가 고장났어요	cha-ga go-jang-na-so-yo

Provide Help

We came to help.	도와 주러왔어요	do-wa joo-ro-wa-so-yo
We won't harm you.	해치지않겠어요	hae-chee-jee-an-ge-so-yo
Please come in.	들어오세요	tu-ro-o-se-yo
Please come out.	나오세요	na-o-se-yo
Come this way.	이리 오세요	ee-ree o-se-yo
Don't worry.	걱정하지마세요	kok-jong-ha-jee-ma-se-yo
You are safe here.	여기는 안전해요	yo-gee an-jon-hae-yo
We have plenty of food.	음식물 넉넉해요	um-sheek nok-hae-yo
We have potable water.	식수 있어요	sheek-soo ee-so-yo
Are you sick?	아파요	a-pa-yo?
Does anyone need treatment?	치료필요하는 사람있어요	chee-ryo pee-lee-o-hae-yo?
We can treat you.	치료할수있어요	chee-ryo-hal-soo-ee-so-yo
We can give you shelter.	숙소를 줄수있어요	sook-so jool-soo-ee-so-yo
Be still.	가만히 있어	ga-man-hee ee-so
Form a line.	줄 서세요	jool-so-se-yo
It's too dangerous here.	여기가 너무 위험해요	yo-gee-ga no-moo wee-hom-hae-yo
You must keep moving.	계속 움직여야돼요	kye-sok oom-jeek-ee-o- ya-hae-yo
We will give you a ride.	차 태워주겠어요	cha tae-wo-joo-ge-so-yo
We can't give you a ride.	차 태워줄 수없어요	cha tae-wo-jool-soo- op-so-yo
Please go 가세요	. . . ka-se-yo
North	북쪽으로	book-jok-u-ro
South	남쪽으로	nam-jok-u-ro
East	동쪽으로	dong-jok-u-ro
West	서쪽으로	so-jok-u-ro

Ordinary Situations

Time

What time is it?	몇시예요	myot-shee-e-yo?
At what time?	몇시에	myot-shee-e?
When?	언제	on-je?
What day?	무슨요일	moo-sun-yo-il?
What date?	날자	nal-ja?
How long ago?	얼마나 오래 전에	ol-ma-na o-re-jon-e?
How many minutes?	몇분	myot-boon?
How many hours?	몇시간	myot-shee-gan?
How many days?	몇일	myot-chill?
How many weeks?	몇주일	myot-joo-il?

Directions

Where is ...?	...어디 있어요	... o-dee-ee-so-yo?
Is it nearby?	가까워요	ka-ka-wo-yo?
Can I walk there?	거기까지 걸어갈수있어요	ko-gee-ka-jee ko-ro-kal- soo-ee-so-yo?
How far is it?	얼마나 멀어요	ol-ma-na mo-ro-yo?
Can you guide me?	안내할수있어요	a-nae-hal-soo-ee-so-yo?
Is the road paved?	도로가 포장되었어요	do-ro-ga po-jang-two- o-so-yo?
How is the road?	도로가 어때요	do-ro-ga o-te-yo?
Where is this . . . ? train going	어디까지 가요	. . . o-dee-ga-jee ka-yo?
bus going	이기차	ee-kee-cha
Where are you going?	이버스	ee-bo-su
Please load.	어디 가세요	o-dee ka-se-yo?
Please unload.	짐 실으세요	jim-shil-ru-se-yo
Please get on.	짐 내리세요	jim-nae-ree-se-yo
Please get off.	타세요	ta-se-yo
It's too big.	내리세요	nae-re-se-yo
It's too heavy.	너무 커요	no-moo ko-yo
	너무 무거워요	no-moo moo-go-wo-yo

Food/Shelter

What food is there?	무슨음식 있어요	moo-sun um-sheek ee-so-yo?
Menu please?	메뉴 주세요	me-nyoo-joo-se-yo?
What do you have to drink?	무슨 음료물 있어요	moo-sun um-ryo-mool ee-so-yo?
How much is this ...?	이거 얼마요	... ee-go ol-ma-yo?
Is it ready?	준비 다 됐어요	choon-bee ta tae-so-yo?
How long is the wait?	얼마나 기다려요	ol-ma-na kee-ta-ryo-yo?
Can we eat here?	여기서 먹을수있어요	yo-gee-so mok-ul-soo-ee-so-yo?
We will take it with us.	가지고가겠어요	ka-jee-go-ka-ge-so-yo
Where can we stay?	어디서 숙박할수있어요	o-dee-so soo-bak-hal-soo-ee-so-yo?
Do you have a room?	방 있어요	bang ee-so-yo?

Signs

Stop	정지	jong-jee
Stop	멈춤	mom-choom
Checkpoint	검문소	gom-moon-so
MPs	헌병	hon-byong
Danger	위험	we-hom
Restricted area	제한구역	je-han-goo-yok
Warning	경보	kyong-bo
Watchout	주시할것	joo-shee-hal-got
No smoking	금연	kum-yon
Slow down	속도나주세요	sok-do na-choo-se-yo
Emergency exit	비상구	bee-sang-goo
Lifeboat	구명정	koo-myong-jong
Detour	우회	oo-hwe
Mine field	지뢰지대	chee-re chee-dae
Poison	유독물	yoo-dok-mool
Military zone	군사지역	goon-sa chee-ok
Keep out	출입 금지	choo-rip koom-jee
Don't go beyond	이선	ee-son ee-sang-ga-gee-
	이상까지마세요	ma-se-yo
Do not enter	들어가지마세요	tu-ro-ka-jee-ma-se-yo

Pictures forbidden	촬영 금지	chwall-yong koom-jee
Unpaved road	비포장도로	bee-po-jang-do-ro

Medical

I am a medic.	위생병 입니다	wee-saeng-byong im-nee-da
I will treat you here.	여기서 치료해주겠어요	yo-gee-so chee-ryo-hae- joo-ge-so-yo
I'll take you to the hospital.	병원에 데리고가겠어요	byong-won-e de-ree-go- ka-ge-so-yo
I am a doctor.	의사 입니다	wee-sa im-nee-da
Are you sick?	아파요	a-pa-yo?
Do you have a disease?	질병 있어요	chill-byong ee-so-yo?
Where is your injury?	어디 다쳤어요	o-dee da-cho-so-yo?
Where does it hurt?	어디가 아파요	o-dee-ga a-pa-yo?
Can you get up?	일어날수있어요	e-ro-nal-soo-ee-so-yo?
Can you walk?	걸을수있어요	ko-rul-soo-ee-so-yo?
I must give you a shot.	주사 놓아줘야돼요	joo-sa no-a-joo-o-ya-dae-yo
I will bandage the wound.	상처에 붓대 감아드리겠어요	sang-cho-e boong-dae gam-a-du-ree-ge-so-yo
The bone is broken.	뼈가 부러졌어요	byo-ga boo-ro-cho-so-yo
I must stop the bleeding.	지혈해야돼요	jee-hyol-hae-ya-de-yo
What caused the injury?	왜 부상당했어요	we boo-sang-dang- hae-so-yo?
Don't tense up.	긴장하지마세요	kin-jang-ha-jee-ma-se-yo
It'll be okay.	괜찮겠어요	kwaen-chan-ge-so-yo

Glossary

AAA	고사포	go-sa-po
AAA sites	대공포 진지	dae-kong-po jin-jee
Above	위에	we-e
Afternoon	오후	o-hoo
Aircraft	비행기	bee-haeng-gee
Aircraft carrier	항공모함	hang-kong-mo-ham
Airfield (civilian)	공항	kong-hang
Airfield (military)	비행장	bee-haeng-jang

Air Force	공군	kong-goon
Alley	골목	gol-mok
Allies	아군	a-goon
American	미국인	mee-gook-in
Ammo dump	탄약고	tan-yak-go
Ammunition	탄약	tan-yak
Anti-communist	반공신주의자	ban-kong-san-joo-we-ja
Anti-government	반정부파	ban-jong-bu-pa
Antibiotics	항생제	hang-saeng-je
Approach	접근	jop-gun
Area	지대	chee-dae
Army	육군	yook-koon
Army group	집단군	jip-dan-goon
Arrive	도착해요	do-chak-hae-yo
Artillery	포병	po-byong
Asian person	동양 사람	dong-yang sa-ram
At / In / On / To	에	e

Bad	나빠요	na-pa-yo
Bad water	오염물	o-yum-mool
Bandages	붕대	boong-dae
Base	기지	kee-jee
Bathroom	화장실	wa-jang-shil
Battalion	대대	dae-dae
Beef	소고기	so-go-gee
Before	전에	jon-e
Behind	뒤에	twee-e
Belly	배	bae
Below	아래	a-rae
Black person	흑인	hook-in
Blister	종기	jong-gee
Blood	피	pee
Boat	배	bae
Bomber	폭격기	pok-kyok-kee
Border	경계선	kyong-gye-son
Boulder	바위	ba-wee
Bowl	그릇	ku-root

Bread	빵	bang
Bridge	다리	ta-ree
Brigade	여단	yo-dan
Bring	갖다주세요	kat-da-joo-se-yo
Building	건물	gun-mool
Bulgogi	불고기	bool-go-gee
Burn	화상	hwa-sang
Butt	엉덩이	ong-dong-ee
Camouflage	위장	wee-jang
Camp	병영	byong-yong
Can	깡통	gang-tong
Car	차	cha
Cave	동굴	dang-gool
Checkpoint	검문소	gom-moon-so
Checkpoint (NK)	차단소	cha-dan-so
Chest	가슴	ka-sum
Chicken	닭고기	dak-go-gee
Child	아이	a-ee
Cigarette	담배	tam-bae
City	도시	do-shee
Civilian	민간인	min-gan-in
Clean	깨끗한	kae-kut-han
Cliff	절벽	jol-byok
Clothes	옷	ot
Coast	바닷가	ba-dat-ga
Coastline	해안선	hae-an-son
Coffee	커피	ko-pee
Collision	충돌해요	choong-dol-hae-yo
Come	오세요	o-se-yo
Come back	돌아오세요	to-ra-o-se-yo
Commander	지휘관	chee-we-gwan
Communists	공산군	kong-san-goon
Company	중대	joong-dae
Corps	군단	goon-dan
Countryside	시골	shee-qol
Courier	특별 전령	tuk-byol jon-ryong

Crash (aircraft)	추락해요	choo-rak-hae-yo
Cup	잔	jan
Danger	위험	wee-hom
Date	날짜	nal-cha
Dawn	새벽	sae-byok
Day	일	ill
Daytime	낮에	na-je
Dead guy	사망자	sa-mang-ja
Depart	출발해요	chool-bal-hae-yo
Depot	창고	chang-go
Diarrhea	설사	sol-sa
Diesel	디젤	dee-jael
Direction	방향	bang-yang
Dirt road	흙길	hook-kil
Dirty	더러워요	do-ro-wo-yo
Division	사단	sa-dan
DMZ	비무장 지대	bee-moo-jang chee-dae
Doctor	의사	wee-sa
Document	서류	so-ryu
Downtown	시내	shee-nae
Drink	마시요	ma-shee-o
Driver	운전사	oon-jon-sa
During	동안	dong-an
East	동쪽	dong-chok
Eat	먹어요	mo-go-yo
End	끝	kut
Enemy	적군	jok-koon
English	영어	yong-o
Enlisted	사병	sa-byong
Enter	들어가요	tu-ro-ka-yo
Equipment	장비	jang-bee
Evening	저녁	cho-nyok
Exit	비상구	bee-sang-goo
Explosive	폭약	pok-yak
Eye	눈	noon

Face	얼굴	o-gool
Facility	시설	shee-sol
Factory	공장	kong-jang
Family	가족	ka-jok
Farmland	농지	nong-jee
Fast	빨리	bal-lee
Fat	똥똥해	doong-doong-hae
FEBA	전투지역전단	jon-too chee-ok jon-dan
Fighter plane	전투기	jon-tu-gee
Finished	끝냈어요	kut-nae-so-yo
Fire	불/화	bool/hwa
Fish	물고기	mool-go-gee
Flower	밀가루	mil-ga-roo
Food	음식	um-sheek
Foot	발	bal
Friend	친구	chin-goo
Fright	공포	kong-po
Front	앞에	a-pe
Front line	전선	jon-son
Fruit	과일	kwa-il
Fuel	연유	yon-yoo
Garrison	주둔지	ju-dun-jee
Gasoline	휘발유	hwe-bal-yoo
Get off	내려	nae-ryo
Give	주세요	jo-se-yo
Go	가요	ka-yo
Go back	돌아가요	to-ra-ka-yo
Good	좋아요	cho-a-yo
Grenade	수류탄	soo-ryoo-tan
Ground	땅/지상	dang/chee-sang
Group	조/단	jo/dan
Guard	보초병	bo-cho-byong
Gully	골짜기	gol-ja-gee
Hand	손	son
Head	머리	mo-ree
Heavy	무거워요	moo-go-wo-yo

Height	높이	no-pee
Help	도움	do-oom
Here	여기	yo-gee
Highway	고속도로	go-sok-do-ro
Hill	고지	go-jee
Hospital	병원	byong-won
Hour	시간	shee-gan
House	집	chip
How	어떻게	o-to-ke
ID	신분증	shin-boon-chung
If	만일	man-il
Industrial area	산업지대	san-op-chee-dae
Infantry	보병	bo-byong
Infection	오염	o-yum
Inside	안내	an-nae
Inside the city	시내	shee-nae
Jeep	썸	jeep
Job	직업	jeek-op
JP4	항공	hang-kong yol-yo
Kerosene	석유	sok-yoo
Kilometers	킬로	kee-lo
Kimchee	김치	kim-chee
Knife	칼	kal
Know	알아요	a-ra-yo
Korean Language	한국어	han-gook-o
Lake	호수	ho-soo
Large	커요	ko-yo
Later	후에	hoo-e
Latrine	변소	byon-so
Leader	지휘자	chee-huee-ja
Left	왼쪽	waen-chok
Leg	다리	ta-ree
Length	기리	kee-ree
Less	덜	dol
Lift	들어요	du-ro-yu

Light	가벼워요	ka-byo-wo-yo
Light	전기불	jon-gee-bool
Location	위치	wee-chee
Look	보세요	bo-se-yo
Look for	찾아보세요	cha-ja-bo-se-yo
Lost the way	길을 잃어버렸어요	kil ee-ro-bo-ryo-so-yo
Machine gun	기관총	kee-gwan-chong
Maintenance facility	정비소	jong-bee-so
Malnutrition	영양실조	yong-yang-shil-jo
Man	남자	nam-ja
Mandu	만두	man-doo
Many	많이	man-ee
Marines	해병대	hae-byong-dae
Market	시장	shee-jang
Meat	고기	go-gee
Mechanic	정비원	jong-bee-won
Medic	위생병	wee-saeng-byong
Medicine	약	yak
Medium	중형	joong-hyong
Meeting	회의	hwe-wee
Military	군대	koon-dae
Milk	우유	oo-yoo
Mine	지뢰	chee-rey
Mine field	지뢰지대	chee-rey-chee-dae
Minute	분	boon
Missile	미사일	mee-sa-il
Mission	임무	im-moo
Month	월/달	wol/dal
More	더 많이	do man-ee
Morning	오전/아침	o-jon/a-chim
Motor pool	수송부	soo-song-boo
Mountain	산	san
Move	움직이요	oom-jeek-ee-o-yo
MP	헌병	hon-byong
My	제/우리	che/oo-ree

Name	이름	ee-rum
Navy	해군	hae-goon
NCO	하사관	ha-sa-gwan
Night	밤	bam
No	아니오	a-nee-o
Noodles	국수	gook-soo
North	북쪽	buk-chok
North Korea	이북	ee-book
North Korean soldiers	북괴군	book-kwe-goon
Not know	몰리요	mo-la-yo
Now	지금	chee-goom
Ocean	바다	ba-da
Officer	장교	chang-gyo
Oil	기름	kee-rum
Old person	늙은 사람	nulk-un sa-ram
Old thing	낡은 것	nalk-un got
Orders	명령	myong-ryong
Outside the city	시외	shee-we
Over there	저기	cho-gee
Pants	바지	ba-jee
Pass	허가증	ho-ga-chung
Paved road	포장원도로	po-jang-toen do-ro
Person	사람	sa-ram
Pill box	약화점	tuk-hwa-jom
Pilot	조종사	jo-jong-sa
Pistol	권총	goo-won-chong
Place	장소	jang-so
Plain	평야	pyong-ya
Plate	접시	jop-she
Platoon	소대	so-dae
Poison	독약	dok-yak
Pork	돼지	twe-gee
Position	위치	wee-chee
Potable water	식수	shik-soo
Powdered milk	분유	boon-yoo
Power plant	발전소	bal-jon-so

Preparation	준비	choon-bee
Pro-communist	친공산주의자	chin-kong-san-choo-we-ja
Pro-government	친정부파	chin-jong-boo-pa
Protection	방어	bang-o
Put in	넣으세요	not-u-se-yo
Put on	넣으세요	no-u-se-yo
Question	질문	chil-moon
Railroad yard/station	철도역	chol-do-yok
Rear area	후방지역	hoo-bang-chee-ok
Refugee	피난민	pee-nan-min
Regiment	연대	yon-dae
Relative	친척	chin-chok
Repeat	반복하세요	ban-bok-ha-se-yo
Rice	밥	bab
Rice cake	떡	dok
Rice paddy	논	non
Ride	타요	ta-yo
Ridge	능선	nung-son
Rifle	소총	so-chong
Right	우른쪽	o-run-chok
River	강	kang
Road	길/도로	kil/do-ro
Rocket	라켓트	ra-ke-tu
RTB	귀대해요	kwee-dae-hae-yo
SAMs	지대공유도탄	chee-dae-kong yoo-do-tan
SAM sites	지대공유도탄진지	chee-dae-kong yoo-do-tan jin-jee
Seaport	항만	hang-man
Send	보내요	bo-nae-yo
Shelter	숙소	sook-so
Shoes	신발	shin-bal
Shoot	쐬/사격해	sowat/sa-kyok-hae
Short	키가작은	kee-ga chak-un
Shortage	부족	boo-jok
Show	보여주세요	bo-yo-joo-se-yo

Sign	표지 / 간판	pyo-jee/gan-pan
Sink	침몰해요	chim-mol-hae-yo
Slow	천천히	chon-chon-hee
Small	작은	chak-un
Soldiers	군인	koon-in
Sorry	미안합니다	mee-an-ham-nee-da
Soup	국	gook
South	남쪽	nam-chok
South Korea	이남	ee-nam
Spy	간첩	gan-chop
Squad	분대	boon-dae
Start	시작	shee-jak
Stone	돌	dol
Stop	정지	jong-jee
Story	이야기	ee-ya-gee
Stronghold	거점	go-jom
Submarine	잠수함	cham-soo-ham
Supplies	보급품	bo-gup-poom
Supply base	보급소	bo-gup-so
Supply route	보급로	bo-gup-no
Tall	키가큰	kee-ga-kun
Tank	전차	jon-cha
Tea	차	cha
Tent	천막	chon-mak
Thank you	감사합니다	kam-sa-ham-nee-da
There	거기	ko-gee
They	그사람들	ku-sa-ram-dul
Thin	마른	ma-run
Thing	것/거/게	got/go/ge
Throw out	버려요	bo-ryo-yo
Time	시간	shee-gan
Today	오늘	o-nool
Tomorrow	내일	ne-il
Trail	오솔길	o-sol-kil
Train track	철도	chol-do
Transformer station	변전소	byon-jon-so

Transport	수송해요	soo-song-hae-yo
Transport plane	수송기	soo-song-gee
Travel permit	출입증	choo-rip-jung
Treatment	치료	chee-ryo
Tree	나무	na-moo
Troop concentration	병력집결지	byong-ryok-jip-kyol-jee
Troop strength	병력	byong-ryok
Truck	트럭	tu-rok
Tuberculosis	결핵	kyol-haek
Tunnel	갱도	gaeng-do
Underground	지하	chee-ha
Underground faction	지하조직파	chee-ha-jo-jeek-pa
Understand	이해해요	ee-hae-hae-yo
Uniform	군복	koon-bok
Unit	부대	boo-dae
Unleaded	비납 연료	bee-nap yol-ryo
Valley	계곡	kye-gok
Vegetable	야채	ya-chae
Vehicle	차량	cha-ryang
Vessel (civilian)	선박	son-bak
Vessel (military)	군함	goon-ham
Village	마을	ma-ul
Vitamins	비타민	bee-ta-min
Walk	걸어가요	ko-ro-ka-yo
Water	물	mool
We	우리	oo-ree
Weapon	무기	moo-gee
Week	주일	joo-il
West	서쪽	so-chok
Westerner	서양 사람	so-yang sa-ram
What	뭐	moo-o
When	언제	on-je
Where	어디	o-dee
White person	백인	paek-in
Who	누구	noo-goo

Why	왜	we
Width	넓이	nol-bee
Woman	여자	yo-ja
Yankee (racial slur)	양키	yang-kee
Yes	네	ne
Yesterday	어제	o-je
You	너 / 당신	no/tang-shin
Young	오린	o-rin

Colors

Black	까만	ga-man
Blue	파란	pa-ran
Gray	회색	hwe-saek
Green	파란색	pa-ran-saek
Red	빨간	bal-gan
White	하얀	ha-yan
Yellow	노란	no-ran

Days of the Week

Monday	월요일	wol-yo-il
Tuesday	화요일	hwa-yo-il
Wednesday	수요일	soo-yo-il
Thursday	목요일	mok-yo-il
Friday	금요일	kum-yo-il
Saturday	토요일	to-yo-il
Sunday	일요일	ee-ryo-il

Numbers

1	일/하나	il/ha na
2	이/둘	ee/dul
3	삼/셋	sam/saet
4	사/넷	sa/naet
5	오/다섯	o/da-sot
6	육/여섯	yook/yo-sot
7	팔/여덟	chil/il-gop
8	팔/여덟	pal/yo-dull
9	구/아홉	koo/a-hop
10	십/열	ship/yull
11	십일/열하나	ship-il/yull-ha-na
12	십이/열둘	ship-ee/yull-dool
20	이십/스물	ee-ship/soo-mool
30	삼십/서른	sam-ship/so-roon
40	사십/마흔	sa-ship/ma-hun
50	오십/쉰	o-ship/shwee-un
60	육십/예순	yook-ship/ye-sun
70	칠십/이른	chil-ship/ee-run
80	팔십/여든	pal-ship/yo-dun
90	구십/아흔	koo-ship/a-hun
100	백	paek
1,000	천	chon
10,000	만	man

APPENDIX E: Individual Protective Measures

Individual protective measures are the conscious actions which people take to guard themselves against physical harm. These measures can involve simple acts, such as locking your car and avoiding areas where crime is rampant. When physical protection measures are combined, they form a personal security program, the object of which is to make yourself a harder target. The following checklists contain basic individual protective measures that, if understood and followed, may significantly reduce your vulnerability towards the security threats overseas (foreign intelligence, security services, and terrorist organizations). If you are detained or taken hostage, following the measures listed in these checklists may influence and improve your treatment.

Protective Measures Against Foreign Intelligence and Security Services

- Avoid any actions or activities that are illegal, improper, or indiscreet.
- Guard your conversation, and keep sensitive papers in your custody at all times.
- Take it for granted that you are under surveillance by both technical and physical means, including:
 - ❑ Communications monitoring (telephone, telex, mail, and radio)
 - ❑ Photography
 - ❑ Search
 - ❑ Eavesdropping in hotels, offices, and apartments
- Do not discuss sensitive matters:
 - ❑ On the telephone
 - ❑ In your room
 - ❑ In a car, particularly in front of an assigned driver

- Do not leave sensitive personal or business papers:
 - ❑ In your room
 - ❑ In the hotel safe
 - ❑ In a locked suitcase or briefcase
 - ❑ In unattended cars, offices, trains, or planes
 - ❑ Open to photography from the ceiling
 - ❑ In wastebaskets as drafts or doodles
- Do not try to defeat surveillance by trying to slip away from followers or by trying to locate “bugs” in your room. These actions will only generate more interest in you. If you feel you are under surveillance, act as natural as possible, get to the safest location possible (your office, hotel, U.S. Embassy), and contact your superior.
- Avoid offers of sexual companionship. They may lead to a room raid, photography, and blackmail. Prostitutes in many countries report to the police, work for a criminal organization, or are sympathetic to insurgent or terrorist organizations; in other words, anti-U.S. Others may be employed by an intelligence service.
- Be suspicious of casual acquaintances and quick friendships with local citizens in intelligence/terrorist threat countries. In many countries, people tend to stay away from foreigners and do not readily or easily make contact. Many who actively seek out friendships with Americans may do so as a result of government orders, or at the least, for personal gain.

In your personal contacts, follow these guidelines:

- Do not attempt to keep up with your hosts in social drinking.
- Do not engage in black market activity for money or goods.
- Do not sell your possessions.
- Do not bring in or purchase illegal drugs.

- Do not bring in pornography.
- Do not bring in religious literature for distribution. (You may bring one Bible, Koran or other religious material for your own personal use.)
- Do not seek out religious or political dissidents.
- Do not take ashtrays, towels, menus, glasses, or other mementos from hotels or restaurants.
- Do not accept packages, letters, etc., from local citizens for delivery to the U.S.
- Do not make political comments or engage in political activity.
- Do not be lured into clandestine meetings with would-be informants or defectors.
- Be careful about taking pictures. In some countries it is unwise to take photographs of scenes that could be used to make unfavorable comparisons between U.S. and Latin standards of living or other cultural differences. Avoid taking any photographs from moving buses, trains, or aircraft.

The following picture subjects are clearly prohibited in most countries where an intelligence or terrorist/insurgent threat is evident:

- Police or military installations and personnel
- Bridges
- Fortifications
- Railroad facilities
- Tunnels
- Elevated trains
- Border areas
- Industrial complexes
- Port complexes
- Airports

What To Do If You Are Detained

Most intelligence and security services in threat countries detain persons for a wide range of real or imagined wrongs. The best advice, of course, is to do nothing that would give a foreign service the least reason to pick you up. If you are arrested or detained by host nation intelligence or security, however, remember the following:

- Always ask to contact the U.S. Embassy. You are entitled to do so under international diplomatic and consular agreements, to which most countries are signatories.
- Phrase your request appropriately. In Third World countries, however, making demands could lead to physical abuse.
- Do not admit to wrongdoing or sign anything. Part of the detention ritual in some threat countries is a written report you will be asked or told to sign. Decline to do so, and continue demanding to contact the embassy or consulate.
- Do not agree to “help” your detainer. The foreign intelligence or security service may offer you the opportunity to “help” them in return for releasing you, foregoing prosecution, or not informing your employer or spouse of your indiscretion. If they will not take a simple “no,” delay a firm commitment by saying that you have to think it over.
- Report to your supervisor immediately. Once your supervisor is informed, the embassy or consulate security officer needs to be informed. Depending on the circumstances and your status, the embassy or consulate may have to provide you assistance in departing the country expeditiously.
- Report to your unit’s security officer and your service’s criminal investigative branch upon returning to the U.S. This is especially important if you were unable to report to the embassy or consulate in country. Remember, you will not be able to outwit a foreign intelligence organization. Do not compound your error by betraying your country.

Protective Measures Against the Foreign Terrorist Threat

Terrorism may seem like mindless violence committed without logic or purpose, but it isn't. Terrorists attack soft and undefended targets, both people and facilities, to gain political objectives they see as out of reach by less violent means. Many of today's terrorists view no one as innocent. Thus, injury and loss of life are justified as acceptable means to gain the notoriety generated by a violent act in order to support their cause.

Because of their distinctive dress, speech patterns, and outgoing personalities, Americans are often highly visible and easily recognized when they are abroad. The obvious association of U.S. military personnel with their government enhances their potential media and political worth as casualties or hostages. Other U.S. citizens are also at risk, including political figures, police, intelligence personnel, and VIPs (such as businessmen and celebrities).

Therefore, you must develop a comprehensive personal security program to safeguard yourself while traveling abroad. An awareness of the threat and the practice of security procedures like those advocated in "Crime Prevention" programs are adequate precautions for the majority of people. While total protection is impossible, basic common sense precautions such as an awareness of any local threat, elimination of predictable travel and lifestyle routines, and security consciousness at your quarters or work locations significantly reduce the probability of success of terrorist attacks.

To realistically evaluate your individual security program, you must understand how terrorists select and identify their victims. Terrorists generally classify targets in terms of accessibility, vulnerability, and political worth (symbolic nature). These perceptions may not be based on the person's actual position, but rather the image of wealth or importance they represent to the public. For each potential target, a risk versus gain assessment is conducted to determine if a terrorist can victimize

a target without ramifications to the terrorist organization. It is during this phase that the terrorist determines if a target is “hard or soft.” A hard target is someone who is aware of the threat of terrorism and adjusts his personal habits accordingly. Soft targets are oblivious to the threat and their surroundings, making an easy target.

Identification by name is another targeting method gathered from aircraft manifests, unit/duty rosters, public documents (Who’s Who or the Social Register), personnel files, discarded mail, or personal papers in trash. Many targets are selected based upon their easily identifiable symbols or trademarks, such as uniforms, luggage (seabags or duffle bags), blatant national symbols (currency, tatoos, and clothing), and decals and bumper stickers.

Security While Traveling

Travel on temporary duty (TAD/TDY) abroad may require you to stay in commercial hotels. Being away from your home duty station requires increasing your security planning and awareness; this is especially important when choosing and checking into a hotel and during your residence there.

The recent experiences with airport bombings and airplane hijacking suggest some simple precautions:

- You should not travel on commercial aircraft outside the continental U.S. in uniform.
- Prior to traveling by commercial aircraft, you should screen your wallet and other personal items, removing any documents (that is, credit cards, club membership cards, etc.) which would reveal your military affiliation.

NOTE: Current USMC policy requires service members to wear two I.D. tags with metal necklaces when on official business. Also, the

current I.D. card must be in possession at all times. These requirements include travel to or through terrorist areas. In view of these requirements, the service member must be prepared to remove and conceal these, and any other items which would identify them as military personnel, in the event of a skyjacking.

- You should stay alert to any suspicious activity when traveling and keep in mind that the less time you spend in waiting areas and lobbies, the better. This means adjusting your schedule to reduce your wait at these locations.
- You should not discuss your military affiliation with anyone during your travels because it increases your chances of being singled out as a symbolic victim.
- In case of an incident, you should not confront a terrorist or present a threatening image. The lower profile you present, the less likely you will become a victim or bargaining chip for the terrorists, and your survivability increases.

Surviving a Hostage Situation

The probability of anyone becoming a hostage is very remote. However, as a member of the Armed Forces, you should always consider yourself a potential hostage or terrorist victim and reflect this in planning your affairs, both personal and professional. You should have an up-to-date will, provide next of kin with an appropriate powers-of-attorney, and take measures to ensure your dependents financial security if necessary. Experience has shown that concern for the welfare of family members is a source of great stress to kidnap victims.

Do not be depressed if negotiation efforts appear to be taking a long time. Remember, chance of survival actually increases with time. The physical and psychological stress while a hostage could seem overpowering, but the key to your well-being is to approach captivity as a mis-

sion. Maintaining emotional control, alertness, and introducing order into each day of captivity will ensure your success and survival with honor.

During interaction with captors, maintaining self-respect and dignity can be keys to retaining status as a human being in the captor's eyes. Complying with instructions, avoiding provocative conversations (political, religious, etc.), and establishing a positive relationship will increase survivability. Being polite and freely discussing insignificant and nonessential matters can reinforce this relationship. Under no circumstance should classified information be divulged. If forced to present terrorist demands to the media, make it clear that the demands are those of the captors and that the plea is not made on your own behalf. You must remember that you are an American service member; conduct yourself with dignity and honor while maintaining your bearing.

Hostages sometimes are killed during rescue attempts; consequently, you should take measures to protect yourself during such an action. Drop to the floor immediately, remaining still and avoiding any sudden movement; select a safe corner if it offers more security than the floor. Do not attempt to assist the rescuing forces, but wait for instructions. After the rescue, do not make any comment to the media until you have been debriefed by appropriate U.S. authorities.

APPENDIX F: FIRST AID/HOT AND COLD WEATHER SURVIVAL

FIRST AID

First aid is the immediate treatment administered to a casualty before they can reach medical assistance. Prompt and correct first aid for wounds will not only speed healing, but will often save a life—and that life may be yours! The most important points are to remain calm and use common sense. This short guide is intended as an emergency reference. The tactical situation and the expertise of the personnel present may influence treatment decisions.

The four priority life-saving steps in first aid are:

- Restore breathing and pulse.
- Stop bleeding.
- Protect the wound.
- Prevent or treat shock.

VITAL SIGNS

To Feel for a Pulse

1. Place the tips of index and middle fingers on the thumb side of the casualty's wrist to feel for a pulse. Do not use your thumb as this will confuse the casualty's pulse with your own.
2. If a pulse cannot be felt at the wrist, check the carotid pulse gently with your fingertips (it is located in a groove next to the windpipe, deep in the neck) or the femoral pulse (deep in the groin).
3. Once a pulse has been located, count the number of beats in 15 seconds and multiply by 4 or if the pulse is very slow or irregular, count for 60 seconds. A pulse rate may vary depending on the casualty's condition.

The normal adult male heart rate is between 70 to 80 beats/ minute, for a female the rate is 75 to 80, and for a young child 82 to 180. However, excitement, exercise, or fever may increase the rate. Be sure to note whether the pulse is weak, full, bounding, or irregular.

Look and Listen for Breathing

Look for the rise and fall of the chest. If it is cold, there may be frost on the casualty's breath.

Place your ear near their mouth and listen for breathing. Note whether the breathing is regular, rapid, shallow, or shows signs of difficulty. Check airway for obstructions.

Check for Wounds and Injuries

Look at the casualty from head to foot checking for bleeding, open wounds, external signs of internal injuries and other problems. Remember that many wounds, particularly bullet wounds, have both an entrance and exit hole; check for both.

CPR

Artificial Respiration

If the casualty is not breathing check airway and remove any obstructions using hooked fingers.

Mouth-to-Mouth Method. With patient lying on back, hold jaw well open while bending head back to prevent tongue from falling and blocking airway. Hold nostrils closed with other hand. Place mouth over patient's mouth and exhale. Watch for chest to rise as you blow gently into patient's lungs. If chest does not rise, perform an abdominal thrust to remove any obstruction (the Heimlich maneuver). Take a breath while watching for fall of casualty's exhale.

For a child: Do not blow. Exhale normally, or in the case of a baby, in gentle puffs. Blowing forcefully into a child's mouth can damage delicate lungs.

Arm-Lift Method. If mouth to mouth technique is not possible due to facial injury or NBC contamination, use the arm-lift method. With casualty on back, check airway for obstructions and kneel behind the casualty's head. Grasp the casualty's hands and place them on the lower ribs, rock forward, pressing downward and forcing air out of the casualty's lungs. When you meet firm resistance lift the arms upward and backward as far as possible. This process of lifting and stretching the arms increases the size of the chest cavity and draws air into the lungs. Repeat cycle of Press-Lift-Stretch.

REPEAT either method, as quickly as possible for first six inflations, then at 12 repetitions per minute until normal breathing is reestablished. **DON'T GIVE UP!**

If no pulse, start alternating cardiac resuscitation and artificial respiration. Give 2 full breaths for each cycle of 15 compressions in single rescuer CPR.

Cardiac Resuscitation

Regardless of the method of artificial respiration, if there is no pulse and, after 10 to 15 seconds, there is no apparent improvement in the casualty's condition, cardiac resuscitation (external heart massage) should be started. There is no time to lose! If the rescuer can't feel a pulse he is going to have to circulate the blood as well as breathe for the casualty.

External Chest Compression. The casualty must be always in the horizontal and supine (lying on their back) position when external chest compression is performed. During cardiac arrest, even during properly performed chest compression, inadequate blood flow to the brain may exist when the body is in an upright position.

1. With the middle and index fingers of the lower hand, locate the lower margin of the casualty's rib cage on the side next to the rescuer.
2. Run the fingers along the rib cage to the notch where the ribs meet the sternum in the center of the lower chest.

3. With the middle finger on the notch, place the index finger next to the middle finger on the lower end of the sternum.

4. Place the heel of the other hand (which had been used on the forehead to maintain head position) on the lower half of the sternum, and just next to the index finger which is next to the middle finger that located the notch. The long axis of the heel of your hand should be placed on the long axis of the breastbone. This will keep the main line of force of compression on the breastbone and decrease the chance of rib fracture.

5. Remove the first hand from the notch, and place it on top of the hand on the sternum so that hands are parallel and directed straight away from the rescuer.

6. The fingers may be either extended or interlaced but must be kept off the chest.

7. Straighten the elbows by locking them, and position your shoulders directly over your hands so that the thrust for external chest compression is straight down. If the thrust is other than straight down, the torso has a tendency to roll, part of the effort is lost, and the chest compression is less effective and requires an inefficient amount of effort.

8. To compress the sternum of a normal-size adult you must push with enough force to depress the breastbone 1 1/2 to 2 inches. With each compression you want to squeeze the heart or increase the pressure within the chest so that blood moves through the body. You must compress at a rate of 80 to 100 times per minute.

9. If you use the weight of your body, you do not depend on the strength of your arms and shoulders as much. Instead of having to push from your shoulders, you let the natural weight of your body falling forward provide the force to depress the casualty's sternum. Keep arms straight.

10. Do not lift your hands off the chest, or change their position in any way, because correct hand position may be lost. Bouncing compressions must be avoided since they are less effective and are more likely to cause injury and additional problems.

BLEEDING

External bleeding falls into the following classifications:

Arterial. Blood vessels called arteries carry blood away from the heart and through the body. A cut artery issues bright red blood from the wound in distinct spurts or pulses. This is the most serious type of bleeding and needs to be controlled promptly.

Venous. Venous blood is blood that is returning to the heart through blood vessels called veins. A steady flow of dark red, maroon, or bluish blood characterizes bleeding from a vein.

Capillary. The capillaries are extremely small vessels that connect the arteries with the veins. Capillary bleeding most commonly occurs in minor cuts and scrapes.

Some methods for bleeding control are direct pressure, elevation, or tourniquet.

Direct Pressure. The most effective way to control external bleeding is by applying pressure directly over the wound. It has to be both firm enough to stop the bleeding and maintained long enough to “seal off” the damaged surface. If bleeding continues after having applied direct pressure for 30 minutes, apply a pressure dressing (a thick dressing of gauze or other suitable material applied directly over the wound and held in place with a tightly wrapped bandage).

Elevation. Raising an injured extremity as high as possible above the heart’s level slows blood loss by aiding the return of the blood to the heart and lowering the blood pressure at the wound. However, elevation alone will not control bleeding entirely; you must also apply direct pressure over the wound.

Tourniquet. Use a tourniquet only when direct pressure over the bleeding point and all other methods failed to control the bleeding. If you leave a tourniquet in place too long, the damage to the tissues can lead to gangrene and loss of the limb later. An improperly applied tourniquet can also cause permanent damage to the nerves and other tissues at the site on the constriction.

If you must use a tourniquet, place it around the extremity between the wound and the heart, 5 to 10 cms about the wound site. Never place it directly over the wound or fracture. Use a stick as a handle to tighten it only enough to stop the blood flow. When you have tightened the tourniquet, bind the free end of the stick to the limb to prevent unwinding. After you secure the tourniquet, clean and bandage the wound.

SUCKING CHEST WOUND

1. Examine casualty and expose a large area around the wound. Remember to check for exit wound on opposite side. Cut away clothing, if necessary.
2. All penetrating chest wounds will be treated as sucking chest wounds.

NOTE: The characteristic hissing, sucking, and fluttering noise that is produced as the patient breathes may not be present.

3. **A sucking chest wound must be closed immediately by any means available.** Use the palm of your hand initially to seal the wound and prevent additional air from entering the chest (thoracic) cavity. The wound should be sealed after the patient forcibly exhales. **Treatment should not be delayed to prepare dressings.**

4. Prepare an air tight (occlusive) dressing of plastic. Sterility should be maintained to prevent further wound contamination. The rescuer might consider using the inside of the plastic wrappers from trauma pads, IV bags, or other medical supplies as these are relatively sterile. The occlusive dressing should be at least 2 inches wider than the diameter of the wound.

5. Cut plastic to required size. Place in palm of hand (clean side up) and apply directly to the wound. Secure three sides of the plastic to the patient with 3-inch adhesive tape. Have the patient forcibly exhale. At the end of the exhalation, seal the remaining side with adhesive tape. When sweating prevents maintaining a seal (i.e., tape does not stick to the patient) or if the wound is massive, trauma pads should be placed with cravats.

6. Have the casualty lie on the injured side to allow the lung on the uninjured side to expand more freely. Treat for shock and evacuate.
7. Reassess patient's vital signs frequently (respiration rate and quality, breath sounds, blood pressure, and pulse).
8. Should the patient develop increasing respiratory difficulty and extreme restlessness and anxiety, air trapped in the chest cavity (tension pneumothorax) must be suspected. The signs of tension pneumothorax are:
 - a. Blueness of skin (cyanosis)
 - b. Tracheal deviation
 - c. Weak, rapid pulse
 - d. Decreased or lowered blood pressure (hypotension)

If tension pneumothorax is suspected, immediately lift on corner of the occlusive dressing to break the seal and allow the release of excessive air pressure from the thoracic cavity. The patient's condition should improve as the pressure is released. The occlusive dressing should then be resealed after the patient forcibly exhales.

OTHER WOUNDS

Head. Elevate head. Clean the airway and protect wounded. Position head to allow drainage from mouth. Do not give morphine.

Jaw. Clean and maintain airway, stop bleeding with direct pressure, do not bandage mouth shut, support jaw, position head to allow drainage from mouth.

Belly. Do not touch or replace organs. Use loose, dry sterile dressing. Give no food or liquids.

SHOCK

Signs/Symptoms. Pale, clammy weak skin, nervousness and thirst. They may pass out.

First Aid

1. Lay patient on back, elevate feet, loosen clothing, keep warm.
2. Feed hot liquids if conscious.
3. Turn head to side if unconscious. Remember, shock can kill.

SPRAINS, FRACTURES, AND DISLOCATIONS

Signs/Symptoms. Localized pain and swelling possibly accompanied by discoloration. If a fractured bone protrudes through the surface of the skin, it is considered a compound fracture and the wound should be treated accordingly. Dislocations and fractures may exhibit obvious deformity.

First Aid

1. Remove clothing around the site of the affected area or dislocation. If necessary, cut clothing rather than causing further injury or discomfort.
2. Prior to and following splinting, check blood circulation and for feeling.
3. Splint all fractures in a manner which immobilizes both the joint above and the joint below the fracture site.
4. Fracture joints should gently be returned to splinting position if this can be accomplished without using excessive force or causing the patient to experience extreme pain.
5. Joints that cannot be gently returned to splinting position should be splinted in their current position.
6. Straighten fracture of a long bone with gentle traction prior to splinting.
7. Cover all open wounds with sterile dressings prior to application of a splint.
8. Pad all splints to prevent excessive pressure.
9. Immobilize fractures prior to evacuating.

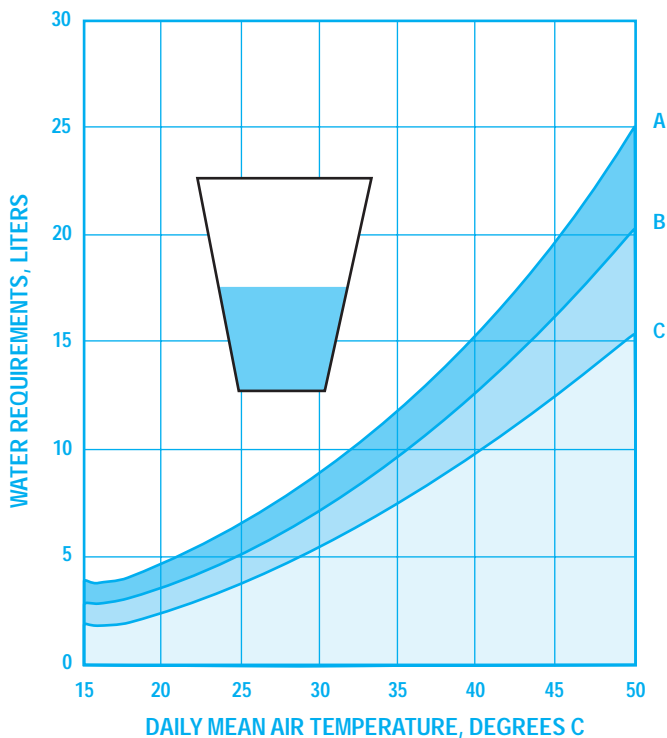
10. Splint fractures of the lower arm with the hand in position of function.
11. Apply gentle traction while splinting.
12. Leave fingers and toes exposed if possible.
13. Splint should not impair circulation.
14. Elevate the extremity following immobilization, where possible.
15. Elevate the injury, and for sprains apply ice to the affected area periodically for approximately 24 to 48 hours following the injury.
16. For dislocations immobilize and apply ice to the affected area periodically for approximately 24 to 48 hours following the injury.

HOT WEATHER SURVIVAL

A key factor in hot weather survival is understanding the relationship between physical activity, air temperature, and water consumption. Your body's normal temperature is 36.9 °C (98.6 °F). Your body gets rid of excess heat (cools off) by sweating, the principle cause of water loss. If a person stops sweating during periods of high air temperature and heavy work or exercise, he will quickly develop heat stroke. This is a medical emergency that requires immediate medical attention. The figure on page F-10 shows daily water requirements for various work levels.

Understanding how the air temperature and your physical activity affect your water requirements allows you to take measures to get the most from your water supply. These measures are —

- Find shade. Get out of the sun.
- Place something between you and the hot ground.
- Limit your movements.
- Conserve your sweat. Wear your complete uniform, to include your T-shirt. Your clothing will absorb your sweat, keeping it against your skin so that you gain its cooling effect.



- A: Hard work in sun (creeping and crawling with equipment on).
 B: Moderate work in the sun (cleaning weapons and equipment).
 C: Rest in shade.

This graph shows water needs, in liters per day, for men at three activity levels in relation to the daily mean air temperature. For example, if one is doing eight hours of hard work in the sun (curve A) when the average temperature for the day is 50 degrees C (horizontal scale) one's water requirement for the day will be approximately 25 liters (vertical scale).

- Do not allow your thirst to be a guide for your need for water. You are already 2 percent dehydrated by the time you crave fluids. Drinking water at regular intervals helps your body remain cool and decreases sweating. Conserve your fluids by reducing activity during the heat of the day.

HEAT INJURIES

Dehydration

Dehydration results from inadequate replacement of lost body fluids. A 1-5 percent fluid loss results in thirst, vague discomfort, lack of appetite, flushed skin, irritability, and nausea. A 6-10 percent loss results in dizziness, headache, labored breathing, no salivation, indistinct speech, and inability to walk. An 11-20 percent loss results in delirium, swollen tongue, inability to swallow, dim vision, painful urination, and numbness. A greater than 20 percent fluid loss is usually fatal. Always drink adequate amounts of fluid. At the first signs of dehydration, get in the shade, keep cool, loosen clothes, and rest. Consume water with a little dissolved salt (a pinch per pint).

Heat Cramps

The loss of salt due to excessive sweating causes heat cramps. Symptoms are moderate to severe muscle cramps in legs, arms, and/or abdomen. These symptoms may start as a mild muscular discomfort. You should now stop all activity, get in the shade, and drink water. If you fail to recognize the early symptoms and continue your physical activity, you will have severe muscle cramps and pain. Treat as for heat exhaustion, below.

Heat Exhaustion

A large loss of body water and salt causes heat exhaustion. Symptoms are headache, mental confusion, irritability, excessive sweating, weakness, dizziness, cramps, and pale, moist, cold (clammy) skin. Immediately get the casualty under shade. Make them lie on a stretcher or similar item about 45 cm off the ground. Loosen their clothing, sprinkle

with water, and fan the casualty. Have them drink small amounts of water every 3 minutes. Ensure they stay quiet and rest.

Heat Stroke

This is a severe heat injury caused by extreme loss of water and salt and the body's inability to cool itself. The casualty may die if not cooled immediately. Symptoms are a lack of sweat, hot and dry skin, headache, dizziness, fast pulse, nausea and vomiting, and mental confusion leading to unconsciousness. Immediately get the casualty to shade. Loosen clothing and lay them on a stretcher or similar item 45 cm off the ground. Pour water on and fan them. Massage their arms, legs, and body. If the casualty regains consciousness, let them drink small amounts of water every 3 minutes.

COLD WEATHER SURVIVAL

EFFECTS OF COLD

In extreme cold, a soldier can become numb and indifferent to non-essential tasks. Essential tasks require more time and effort. It has been repeatedly demonstrated that at temperatures lower than -10° F, all other problems lose significance in the personal battle for survival. The human body must be protected. To remain functional, it must be kept clean, dry, and reasonably warm, and normal body processes must be maintained. Rest and nourishment are vital. Remember four basic rules:

- Keep in shape.
- Drink plenty of water.
- Eat to keep fit.
- Maintain a positive attitude.

WINDCHILL

When a high wind is blowing, we feel much colder than when it is calm. Windchill is a measure of the combined effects of wind and temperature. To effectively gauge it, some scale must be used; the most commonly used is the windchill chart. The windchill chart (shown on page

WIND SPEED		COOLING POWER OF WIND EXPRESSED AS "EQUIVALENT CHILL TEMPERATURE"																				
KNOTS	MPH	TEMPERATURE (°F)																				
CALM	CALM	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60
		EQUIVALENT CHILL TEMPERATURE																				
3 - 6	5	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-70
7 - 10	10	30	20	15	10	5	0	-10	-15	-20	-25	-35	-40	-45	-50	-60	-65	-70	-75	-80	-90	-95
11 - 15	15	25	15	10	0	-5	-10	-20	-25	-30	-40	-45	-50	-60	-65	-70	-80	-85	-90	-100	-105	-110
16 - 19	20	20	10	5	0	-10	-15	-25	-30	-35	-45	-50	-60	-65	-75	-80	-85	-95	-100	-110	-115	-120
20 - 23	25	15	10	0	-5	-15	-20	-30	-35	-45	-50	-60	-65	-75	-80	-90	-95	-105	-110	-120	-125	-135
24 - 28	30	10	5	0	-10	-20	-25	-30	-40	-50	-55	-65	-70	-80	-85	-95	-100	-110	-115	-125	-130	-140
29 - 32	35	10	5	-5	-10	-20	-30	-35	-40	-50	-60	-65	-75	-80	-90	-100	-105	-115	-120	-130	-135	-145
33 - 36	40	10	0	-5	-10	-20	-30	-35	-45	-55	-60	-70	-75	-85	-95	-100	-110	-115	-125	-130	-140	-150
Winds Above 40 MPH Have Little Additional Effect		LITTLE DANGER					INCREASING DANGER Flesh may freeze within 1 minute					GREAT DANGER Flesh may freeze within 30 seconds										

Windchill Chart

F-13) is a simple and practical guide showing when cold weather is dangerous and when exposed flesh is likely to freeze.

COLD WEATHER CLOTHING

Cold weather clothing systems use the design principles of insulate, layer, and ventilate.

Insulation reduces the amount of body heat lost to the environment. By regulating the amount of insulation, you can regulate the amount of body heat lost.

Layering Several layers of clothing provide more insulation and flexibility than one heavy garment, even if the heavy garment is as thick as the combined layers. The secret is dead air space between layers. The more dead air space, the greater the insulating value. Layers can be

added as it gets colder and taken away as it warms up or as work increases.

Ventilation helps maintain a comfortable body temperature by allowing the wearer to get rid of excess heat and body moisture. Ventilate either by opening the clothing or by removing insulating layers before you start to sweat.

Remember the acronym **COLD** to quickly check your adherence to the cold weather clothing principles; keep it **C**lean, avoid **O**verheating, wear it **L**oose and in layers, and keep it **D**ry (removing snow and frost before entering a shelter is particularly important in keeping clothing dry).

EFFECTS OF COLD WEATHER ON NOURISHMENT

Caloric Intake. A basic fact of cold weather operations is that soldiers must eat more than usual to function. In cold weather, the greater part of what you eat and drink maintains body heat, while a small proportion produces energy for physical work. Approximately 4,500 calories per day are necessary to do hard, continuous work.

Fluids. The body loses liquid at an exceptional rate in arctic conditions due to evaporation, exertion, and low humidity. However carefully you adjust clothing and ventilation, the heavy exertion of movement on foot and preparation of bivouacs and defenses exacts its toll in sweat and loss of moisture in the breath. These liquids must be regularly replaced, preferably by hot drinks which, if they contain sugar, have the additional advantage of providing extra calories.

COLD INJURIES

The destructive influence of cold on the human body falls into two categories; non-freezing and freezing injuries.

Non-freezing Injuries

Chilbains. This is a superficial tissue injury of the hands, ears or nose, which occurs after prolonged exposure of the bare skin to temperatures above freezing. It appears most often when high winds and high humidity accompany low but non-freezing temperatures. Symptoms include an initial pallor of the exposed areas. There will be redness, swelling,

increased warmth, and a sensation of itching after rewarming. Superficial blisters or ulcers may appear with repeated episodes.

Treatment

- In the initial stages, gradually rewarm exposed area(s) at room temperature.
- If the face is involved, you may simply hold a warm hand to the area.
- If the hands are affected, place them in the armpits or crotch.
- If blisters form, gently cleanse the area and protect it to avoid infection.

Prevention

- Avoid prolonged exposure to the elements.
- Protect the obvious exposed areas with adequate clothing and covering.

Trench Foot/Immersion Foot. Trench foot and immersion foot are injuries caused by the prolonged exposure of skin to cold water or dampness at temperatures usually ranging from just above freezing to 50°F. In the early stages, the feet and toes are cold, numb, and stiff, and walking becomes difficult. The feet smell, swell, and become painful.

Treatment

- Gentle drying, elevation, and exposure to temperatures of 64° to 72°F.
- Bed rest, cleanliness, and pain relief.

Prevention

- Change to dry socks three times daily or as often as necessary.
- Use foot powder.
- Wear VB boots.
- If leather boots are worn, dry them whenever possible.

Hypothermia. Simply stated, hypothermia is a lowering of the temperature of the body's inner core. This happens when the body loses heat faster than it can produce it. The potential for this condition will be

increased in the presence of fatigue, inadequate hydration, poor nutrition, inadequate protective clothing, and cold water immersion. It must be remembered that freezing temperatures are not necessary to produce hypothermia. Wind, rain, and cold temperatures also cause loss of body heat which can result in hypothermia. Symptoms include uncontrollable shivering, trouble walking and poor coordination, difficulty speaking, sluggish thinking, disorientation, and an almost total disinterest in the surroundings. In later stages, shivering stops and is replaced by strong muscular rigidity. Exposed skin may become blue and puffy. When the casualty's temperature drops below 86°F, cardiac irregularities occur.

Treatment

- Prevent any further heat loss.
- Get the casualty out of the wind and into the best available shelter.
- Replace wet clothing with dry. Wrap casualty in warm blankets or in a sleeping bag if one is available.
- Place as much insulation as possible between the casualty and the ground.
- Add heat by the best available means to the casualty's neck, groin, and sides of the chest. **CAUTION:** Do not apply heat to extremities.
- If the casualty is conscious, give him warm fluids. If able to eat, give candy or sweetened foods.
- If casualty is unconscious, he should be remain on his back, with head tilted back to ensure open airway.
- Do *not* massage the casualty.
- Do *not* give alcohol to the casualty.
- *Get the casualty to medical help as quickly as possible.*

Prevention

- Stay physically fit.
- Keep active.
- Use the uniform properly and keep it dry.
- Eat properly and often.

- Drink plenty of fluids, at least 3.5 quarts per day when performing hard work.
- Be prepared for and know how to deal with rapid changes in weather.
- Bivouac early before fatigue impairs judgement.

Dehydration. Dehydration is often an overlooked cold weather injury. See page F-11.

Prevention

- The minimum daily fluid requirement for persons doing hard physical work in the cold is 3.5 quarts per day.
- By the time you feel thirsty, you are already dehydrated. Drink whenever you have a chance, particularly at halts during movement on foot.
- All canteens should be full before any type of movement during which resupply will be difficult.
- Do not drink coffee when water is scarce. It will pass through you almost as fast as you drink it. Water should be your first choice.
- Check urine spots in the snow. Dark yellow or brown indicates dehydration.

Carbon Monoxide Poisoning. Carbon monoxide (CO) is a deadly, odorless, colorless poison given off by stoves, lanterns, and engine exhaust. There are various symptoms including headache, dizziness, impaired vision, confusion, nausea, palpitations, weakness, and/or muscle pain. Bright red color appears on lips and skin. A casualty may become drowsy and collapse without warning.

Treatment

- Move casualty to open air.
- Keep casualty still and warm.
- Administer mouth-to-mouth resuscitation if casualty is not breathing or is breathing irregularly.
- Administer cardiopulmonary resuscitation, if necessary.

- MEDEVAC as soon as possible.

Prevention

- Ensure that stoves and lanterns are functioning properly.
- Use stoves and lanterns in well-ventilated areas.
- Ensure that tents are well-ventilated.
- Make sure vent holes are used in snow shelters.
- Do not warm yourself by engine exhaust.

Snow Blindness. Snow blindness is a temporary visual disturbance caused by ultraviolet radiation reflected from the snow into the eyes. The danger of snow blindness is greater on a cloudy day than it is on a clear day because one does not have brightness as a warning. Symptoms appear 2 to 12 hours after exposure and includes a gritty and painful feeling in the eyes, tears flow excessively, headache, blurred vision and objects develop pinkish tinge.

Treatment

- Rest in darkness.
- Cover eyes with cool bandage.
- Analgesics or sedatives.
- The injury will usually heal itself from 1 to 5 days.

Wounds. In cold weather, casualties should be given first aid treatment, protected from the cold and shock effects, and evacuated to an aid station without delay. They should be placed in a casualty bag, sleeping bag, or the best available substitute. Remember also that wounds bleed easily because the low temperature keeps blood from clotting. Increased bleeding increases the likelihood of shock.

Wounds open to weather freeze quickly. The body loses heat in the area around the injury, as blood soaks the skin around the wound, and clothing is usually torn. Therefore, early first aid treatment becomes even more important at low temperatures.

Shock. Shock is caused by reduction of the effective circulating blood volume. Shock can be caused by severe injuries, loss of blood, pain, and

many other factors. The normal reaction of the body to severe cold is very similar to its reaction to shock. Therefore, shock usually develops more rapidly and progresses more deeply in extreme cold than in warmer temperatures. Symptoms include apprehension, sweating, pallor, rapid/faint pulse, cold/clammy skin, and thirst.

Treatment

- Reassure the casualty. Pain can be reduced with proper positioning, good bandaging, and splinting.
- Position the stretcher so that the casualty's head and chest is lower than his lower body and legs. About a 1-foot difference is right. Do not do this if it will cause discomfort to the casualty.
- Keep the casualty warm. Normal temperature is best.
- Do not move the casualty any more than necessary. This does not mean movement over distance, but moving a casualty from one stretcher to another, unnecessary lifting or turning over when bandaging or splinting, or moving a casualty from a sleeping bag into a casualty bag, etc.
- Loosen the clothing at the neck, chest, and waist, weather permitting.
- If the casualty is conscious, give sips of warm soup, tea, cocoa, coffee, or another available liquid, but not alcohol.
- The casualty should receive medical attention as soon as possible.

Freezing Injury (Frostbite)

Frostbite is the injury of tissue caused by exposure to freezing temperatures. Frostbite can cause the loss of limbs or other serious, permanent injury. It is the most common injury and is almost always preventable. It seldom occurs in individuals who maintain adequate heat production. Frostbite is most commonly associated with an overall body heat deficit resulting from inadequate equipment, lack of food, lack of water, exhaustion, injury, or a combination of such factors. The feet are most vulnerable to serious frostbite and must receive constant attention.

Superficial Frostbite. This injury involves only the skin or the tissue immediately beneath it. There is a certain amount of whiteness or a waxy appearance around the affected area. Frost nip, a superficial frost-

bite which usually affects the nose, face or ears, appears as a small patch of white on the skin.

After rewarming, the frostbitten area will first be numb, mottled blue or purple, and then will swell, sting, and burn for some time. In more severe cases, blisters will occur within 24 to 36 hours beneath the outer layer of the skin. These will slowly dry up and become hard and black in about 2 weeks. Generally, swelling of the injured area will subside if the casualty stays in bed or at complete rest. It will last much longer if the casualty refuses to cooperate. Throbbing, aching, and burning of the injured part may persist for several weeks, depending on the severity of the exposure. After the swelling finally disappears, the skin will peel and remain red, tender, and extremely sensitive to even mild cold, and it may perspire abnormally for a long time.

Deep Frostbite. This is a much more serious injury. Its damage not only involves the skin and the tissue immediately beneath it, but also affects the deep tissue (including the bone). It is usually accompanied by large blisters. In marked contrast to superficial frostbite, these blisters take from 3 days to a week to develop. Swelling of the entire hand or foot will take place and may last for a month or more. During this period of swelling, there may be marked limitation of mobility of the injured area(s), and blue, violet, or gray (the worst) discoloration takes place after the first 2 days. Aching, throbbing, and shooting pains may be experienced for as long as 2 to 8 weeks.

Treatment

- For frost nip on the face, place a hand or warm piece of clothing over the affected area. *DO NOT RUB.*
- Cold hands can be rewarmed by placing them in the casualty's armpits or crotch. Cold feet can be placed against another person's stomach.
- Remove wet or constricting clothing, and protect the extremity from further injury with blankets or any other dry material.
- Smoking, drinking alcohol, and/or applying salves or ointments are strictly forbidden.
- For anything other than superficial frostbite, place the casualty in a shelter to prevent further injury. *No attempt should be made to thaw*

the frozen part - MEDEVAC immediately. If thawing has occurred, the casualty should be considered a litter patient.

- Follow the 15-minute rule: If the extremities can not be rewarmed within 15 minutes (i.e., capillaries refill, feeling returns, toes and fingers begin to move), the casualty must be treated as a deep frostbite casualty. Evacuate the casualty, taking care to keep the affected part(s) warm as warming was started during the 15-minute effort.

APPENDIX G: International Telephone Codes

International Telephone Codes

Algeria	213	Mexico	52
Australia	61	Morocco	212
Austria	43	Netherlands	31
Bahrain	973	Nigeria	234
Belgium	32	New Zealand	64
Brazil	55	Norway	47
Canada	1	Oman	968
China	86	Portugal	351
Cyprus	357	Qatar	974
Denmark	45	Saudi Arabia	966
Djibouti	253	Senegal	221
Egypt	20	Seychelles	248
Ethiopia	251	Somalia	252
Finland	358	South Africa	27
France	33	Spain	34
Gabon	241	Sweden	46
Germany	49	Switzerland	41
Greece	30	Syria	963
Hawaii	1	Taiwan	886
Hong Kong	852	Tanzania	255
Iran	98	Tunisia	216
Iraq	964	Turkey	90
Ireland	353	UAE	971
Israel	972	United Kingdom	44
Ivory Coast	225	United States	1
Japan	81	Yemen	967
Jordan	962	Zambia	260
Kenya	254	Zimbabwe	263
Kuwait	965		
Libya	218	AT&T	1721011
Madagascar	261	MCI	1721022
Malta	356	Sprint	172

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