

~~SECRET~~

SECTION 2: ROK AND U. S. NAVAL ROLES

2.1 Introduction

The US and ROK naval roles in any confrontation with North Korea depend on political volition as much as military necessity. As a signatory to the 1953 US-ROK Mutual Defense Treaty, the US is committed to the defense of South Korea. The Mutual Defense Treaty states that "...separately and jointly, by self help and mutual aid, the Parties will maintain and develop appropriate means to deter armed attack..." In ratifying the treaty President Eisenhower made it clear that neither party would come to the aid of the other except in the case of an external armed attack.

2.2 The Threshold of Hostility

The crucial issue for deciding ROK and US naval roles and forces is the definition of "external armed attack", the threshold level of violence which will invoke retaliatory action and make the confrontation something more than routine friction between states. Any level of conflict up to that point is the responsibility of the ROK forces. This task is made difficult by the intangible nature of boundaries at sea and the absence of US forces. The ROK Navy should know at what point in any struggle with North Korea it can expect US assistance. The North Koreans also should have a fairly clear idea of how far they can push without involving the US.

Four comparatively recent incidents clearly indicate that this involvement threshold is not static and that it may be rising toward limits which are untenable for the Republic of Korea. For example, the following incidents were not considered external armed attacks. In January, 1967 ROK-PCE-56 crossed the MDL to protect a ROK fishing fleet which was being closed by North Korean patrol boats. PCE-56 was taken under fire and hit by Communist shore batteries and despite attempts of another ROK PCE to save her, sank with heavy loss of life. (Forty dead, 11 seriously wounded). On 21 January 1968 a 31-man North Korean suicide team attempted to assassinate South Korean President Park after infiltrating through the DMZ. This has become known as the "Blue House Raid". On 23 January 1968 North Korea seized the USS PUEBLO and the US was unable to intercede or demonstrate against the North Koreans. In early November 1968 approximately 120 North Korean commandos were landed near Ulchin on the east coast. A massive man hunt was required to track them down.

2.3 Command Structure

The determination of US/ROK roles is complicated by the command structure which has evolved since the beginning of the Korean War. Commander, Naval Forces Korea is a Rear Admiral, US Navy. He is responsive to the direction of three different superiors.

~~SECRET~~

Under CINCPACFLT, he commands Naval Forces Korea, Task Force 98. No US forces are assigned in peacetime.

Under COMUSKOREA, as Commander Naval Component, US Forces Korea, he exercises command over all US naval forces assigned to COMUSK. At present, this command includes only his staff and the Naval Advisory Group. He is also the Chief, US Naval Advisory Group, ROK Navy, in which capacity he reports to the Commander Naval Component, US Forces Korea. The Chief, US Naval Advisory Group, ROK Navy, also reports directly to CINCPACFLT as required.

Under Commander in Chief, United Nations Command (CINCUNC), he commands the Naval Component of UN forces, Korea. There are none presently assigned. However, he also exercises operational control over the ROK Navy and the ROK Marine Force. The UN naval forces are organized into Task Force 98, which is constituted as follows:

- TC 98.0 Flagship Group (American unit and element commanders)
- TC 98.1 UN Naval forces (None presently assigned)
- TC 98.2 US Naval forces (None presently assigned)
- TC 98.3 ROK Naval forces (commanded by COMROKFLT)
- TC 98.8 ROK Marine Division (minus), (commanded by Commander First ROK Marine Division)

2.4 Delineation of Roles

A distinction must be made between the joint US, UN, ROK functions and the defensive roles which the ROK Navy must face alone.

Combined Responsibilities (US/UN/ROK)

Included in this category are: Operations to contain the Communists in North Korea; control and protection of allied shipping (in coordination with COMNAVFORJAPAN); blockade SOX5 North Korea (with the assistance of the Seventh Fleet), and support of the US Eighth Army.

In addition, joint responsibility for naval operations in Korean waters includes: reconnaissance and surveillance; ASW; defensive mining and mine counter-measures. Harbor defense of ports and beaches (in coordination with the US Eighth Army), security of the West Coast and the conduct of amphibious operations are also a combined US/UN/ROK responsibility. There is also combined responsibility for naval gunfire support.

ROK Responsibilities

In the absence of assigned UN and US naval units, the ROK Navy is tasked with the following responsibilities: counter-infiltration patrols, seaborne logistic support, anti-submarine warfare, sea-air rescue, air defense, port and harbor defense to include minesweeping, shipping control, naval gunfire support, defense of the offshore islands, and amphibious operations. In addition, the ROK Navy provides sealift support for its forces in Vietnam.

~~SECRET~~
27A

~~SECRET~~

Scenarios Calling for a ROK Naval Response

ROK fishing boats or other craft operating in the maritime extension of the DMZ are fired on by NK gun or SAMLET batteries or machine guns, or are harassed by NK patrol craft, or by OSA or KOMAR craft; in the same location, some of the boats are sunk by enemy action and others are captured and taken into port.

ROK intra-coastal surface craft are harassed as a result of covertly positioned North Korean mines.

A ROK boat or ship operating in international waters is harassed by a North Korean ship(s) by firing over bows, interfering with the maritime operation being conducted, etc.

In a similar situation, a ROK boat or ship is captured by the North Koreans in international waters.

The ROK boat or ship is sunk in international waters. However, authorities were notified in some way such as radio or by survivors.

A US vessel with a ROK crew is mined, shelled, harassed or seized.

Seaborne infiltration is used to support a guerrilla effort to damage or destroy an installation which is manned largely by South Koreans.

Minor South Korean ports are mined.

Unless actual US/UN forces are committed, any naval response to the above scenarios limited to US direction or support must be considered a ROK response.

Scenarios that Might Call for a Combined Naval Response

A US vessel with a US crew, particularly in vicinity of Inchon, is mined, shelled, attacked by missiles, harassed, or seized.

North Korean submarines are spotted operating in international waters, but contiguous to the South Korean coast.

Harbor or approach channels to Inchon, Pusan or Chinhae are found to be mined.

If the ROKN faced a coalization of NK/CPR or USSR forces, US assistance would be required. The ROKN would assume a supporting role with allied forces.

Any projected reliance on US forces must take into consideration their distance from Korea and the time that it would take to get on station.

~~SECRET~~

SECTION 3: NAVAL FORCES IN THE KOREAN WAR

3.1 Introduction

A look at the history of the North and South Korean navies leads to several useful conclusions: First, in the recent past local naval forces have not played a significant role in the security of Korea. Secondly, on the basis of prior North Korean experience, the major ROK naval defensive requirements are probably mine countermeasures and sea surveillance only.

3.2 Korean Navies

Naval development in both South and North Korea had barely begun when the Korean War started. Not surprisingly during the Korean War, both North and South Korean navies played minor roles, at best, with one important exception -- mining -- which is discussed below. In the ensuing 19 years, the fledgling forces have developed into small but reasonably effective navies. They have been equipped with a wider array of warships. Nevertheless, they remain primarily coastal defense forces roughly comparable in strength and with limited offensive capability. These coastal defense capabilities perhaps take on greater significance today for South Korea than in 1950 because of the current North Korean strategy of infiltration and subversion.

a. North Korea - Prior to 1950 the North Korean Navy was given a low priority in military planning. The major effort in the five years of independence, including Russian material assistance, had gone into developing the army and, secondly, the air force. The exact size and complement of the navy at the time of the war are not known; the best estimates are some 40 small patrol craft including several 60 foot aluminum hulled Russian torpedo boats. The total strength was 4,000-5,000. The Russians were largely responsible for any naval improvement. In addition to material assistance, the Russians had set up and administered a training program for naval personnel; the Russians also had use of several North Korean base facilities. Except for mining, the North Korean Navy engaged only in minor harassment and by the end of the war it had virtually ceased to exist, a good portion of its sailors having been ordered into the army.

b. South Korea - Like its northern counterpart, in 1950 the South Korean Navy was only a coast guard. Established in 1948 with United States assistance, the Navy had about 7,000 men. Its ships included one LST, 15 ex-United States YMS-type minesweepers, 10 ex-Japanese minelayers, and an assortment of patrol craft. When war broke out, the ROK Chief of Naval Operations was in the United States to take delivery of 4 ex-United States steel hulled PCs. (The United States later lent the ROK two destroyers.) As an organization,

~~SECRET~~

272

~~SECRET~~

the ROK Navy in 1950 was in fairly sad shape - money and material were lacking, ships had been kept in operation primarily by cannibilization, and some personnel defections had taken place.

The ROK Navy in the first week of the war participated in the war's major surface engagement. A ROK PC sank a 1,000 ton North Korean armed steamer embarked on an amphibious landing with 600 troops aboard. The ROK Navy was primarily integrated into United States naval forces, serving mostly to patrol southern coast ports and participating in minesweeping off both North and South Korean ports.

3.3 United States

During the Korean War, the United States Navy was unchallenged, except perhaps in the case of mining. Its sole significant engagement with the North Korean Navy was limited to a brief battle of several United States cruisers with four unfortunate North Korean torpedo boats. The Navy met no Chinese or Russian opposition and had undisputed control of the sea. It provided important naval gun support, naval air support, and conducted major amphibious operations. All this occurred under favorable battle conditions in which opposition was limited to mines and shore batteries.

3.4 Mining

Mine warfare was North Korea's major naval effort during the Korean War. North Korean mine activity, however, was almost wholly defensive and consisted largely of mining her ports and waters -- notably the ports of Wonsan, Haeju, and Chinampo -- and to a much lesser extent the open seas adjacent to both North Korean coasts. Some mining of South Korean ports -- Inchon, Mokpo and Kunsan -- also took place, but this was limited and occurred when North Korean forces were in control of most of South Korea. This nevertheless required precautionary defensive measures for all significant South Korean ports. Finally, the North Koreans planted a limited number of drift mines to be carried south by ocean currents.

No defensive mining was initiated before the war began and little or no mining stocks were available in Korea when hostilities commenced. Mining began in July of 1950, and full-scale defensive harbor mining of the major North Korean ports began after the fall of Inchon. The North Koreans correctly assumed that further amphibious assaults would be attempted and that the United Nations forces would require advance port supply facilities. All mines employed by the North Koreans came from the Soviet Union and most arrived during the summer of 1950 -- primarily late July and August. Mines were shipped by rail and truck to North Korean ports and by train to Inchon and Kunsan. A small number were also transported by sea to North Korean ports. The exact number of mines delivered is unknown, but the total was

~~SECRET~~
273

~~SECRET~~

apparently 4,000 - 5,000 of which some 2,000 - 3,000 mines were laid in Wonsan alone. Mines used were both moored and magnetic, but the moored contact mine was most prevalent.

Few North Koreans were trained in assembly and adjustment of mines when the war started. The major role in the initial mine laying effort was played by the Russians. Soviet naval officers operated as far south as Inchon. Russians are believed to have laid most of the magnetic mines. Russian instructors in July and August of 1950 also conducted assembly and technical training for Korean personnel. In the case of Wonsan and Chinampo, mine plants were closely integrated with coastal defenses, implying a sophisticated and almost certainly Russian effort at these ports. In other locations, mine laying was apparently done by North Koreans.

Submarines and aircraft were not used to lay mines. Rather, mine laying procedures were very simple. Barges were towed to the landing area by tugs. The tugboats were guided into pre-determined position and upon a given signal mines were rolled off the stern of the barges at pre-determined intervals. These plants took place under very favorable operating conditions. They were unopposed. The North Koreans also surreptitiously remained waters adjacent to their coast by junks and fishing craft operating at night or under conditions of reduced visibility. In waters where United States naval forces were operating, boat patrols were established but could not entirely stop this traffic.

At the beginning of the war, there were 19 United States minesweepers in the Pacific Fleet. They were all ordered to Korea. These forces were insufficient to keep up with growing sweeping requirements both in North and South Korea as allied forces marched north, and they had to be augmented by Japanese minesweepers and crews. The Japanese minesweepers, as well as available Korean units, for the most part operated in southern ports. The coordination required for effective mine countermeasures was hampered by the language problems. In addition to an initial lack of minesweepers, individual ship protection against mining was relatively poor, and minesweeping material stocks were inadequate. Finally, only a minor amount of mine warfare intelligence had been developed.

Initial North Korean mining efforts paid excellent dividends. Four minesweepers and one ocean-going tug (ATF) were destroyed and four destroyers were damaged. An additional seven ROK ships were lost or destroyed. North Korean shore batteries also damaged a number of minesweepers engaged in sweeping operations. U.S. ships, particularly on the east coast, were forced to remain outside unswept waters diminishing the effectiveness of naval gunfire support. Mine countermeasures also necessitated a major United States expenditure in ships and personnel. Most significant, mining effectively delayed for six days a major United States invasion effort against Wonsan. The experience at Wonsan weighs heavily on the minds of many U.S. and ROKN planners.

~~SECRET~~

274

~~SECRET~~

SECTION 4: ROK MINESWEEPING REQUIREMENTS

4.1 Summary and Conclusion

North Korea has sufficient mines and delivery means to conduct offshore mining operations, including a harassment campaign against Korean ports. Nothing conclusive, however, can be stated as to the likelihood of its using offensive mining. North Korea's past experience with mining has been purely defensive. However, if North Korea does resort to offensive mining, the most probable scenario would be a harassment campaign directed against ROK shipping. North Korea's most profitable offensive mine tactic would be to use influence mines delivered surreptitiously by junks.

The mine countermeasures required to defend against a mining campaign depend on the number of mines laid and the casualty rate that the ROK/US forces are willing to accept. If several hundred influence mines were used, full-scale mine countermeasures would be required including: (1) complete control of inner harbors; (2) convoying of major traffic; (3) use of random channels for each (2-way) convoy transit; (4) extensive precursory sweeping prior to convoy transit; and (4) complete exclusion of mining in the swept channel.

In order to keep all Korean ports except Inchon open in the face of a North Korean harassment or interdiction campaign, a force of 20-25 MSCs would be required. If only the major ports are kept open, 10-13 MSCs should suffice. At present, the ROK Navy can barely meet this lesser requirement. The ROKN currently has 11 minesweepers in varying degrees of readiness (see Table 4-2). Meeting the interdiction threat, particularly since US shipping would be a major target, would undoubtedly become a joint ROK/US effort. Current ROK/US minesweepers in the area could keep all ports open for a 180 day campaign. If the North Koreans launched interdiction campaigns against selected ports and kept up a steady harassment of the other ports, however, additional MSCs could be needed to replace losses.

Alternative mine countermeasures force levels are provided below. They are listed in order of increasing cost and capability.*

* This evaluation of the ROKN mine countermeasures requirements is based on a US Navy Mine Defense Laboratory (MDL) study entitled An Examination of the Effect of Mining Operations Against the Republic of Korea Ports. The techniques and computer models used were developed for the CNO Study A Study of US Mine Countermeasures 1972 (U). The entire report is included as Appendix A. The MDL estimates assume that effective harbor defense measures are in effect. Accordingly, these measures should be given a very high priority, particularly in the key ports.

~~SECRET~~

~~SECRET~~

Alternative 1: Minimum Number of MSCs

In this alternative the assumption is made that North Korea would be unlikely to conduct offensive mining. If it did, only the key ports would be kept open. The risk is understandably great in that heavy reliance could be placed on the US Pacific Fleet minesweepers. In this force level alternative, the 6 MSCs would be retained and the existing 4 MSC(O)s would be decommissioned. There would be no reserve of ships on hand to replace losses.

Alternative 2: Maintain the Existing Force Level

This would give the ROK Navy 10 MSC/MSI(O)s to use in meeting the North Korean mine threat. If the NKA did conduct offensive mining, there is again a high risk that Korea would not be able to meet a harassment or interdiction campaign requirement without US assistance. The aging MSC(O)s would not be replaced and the ROKN ability to counter influence mines would continue to decline. A more detailed evaluation of the status of the present mine force is provided later in this section. While investment costs would be avoided, maintenance costs would continue to rise. US participation in the early phases of mine counter-measures efforts would be necessary.

Alternative 3: The remaining four MSC(O)s would be replaced by MSIs. The advantage of this alternative would be a reduction of investment cost for the MSC(O) replacements and reduced operating and maintenance costs. This force could be adequate against NK interdiction mining provided all ports were not kept open.

Alternative 4: An Interim MSC/MSI Mix

This alternative would require a limited investment expenditure for additional minesweepers. It envisions replacement of the remaining 4 MSC(O)s with MSCs as planned and then the addition of 5 MSIs (inshore minesweepers). Both ship types are compared in Table 4-5. The loss in sweep capability is not great even though the ability to conduct minehunting is lost. In terms of sweep capability, an MSI has 90% of the capability of an MSC. The advantage of this alternative is that it does enhance the size and capability of the ROK Navy with a considerable saving in investment and support costs. It would reduce reliance on US mine countermeasures forces even for the more intensive NK threat scenarios. With this mix of ships the ROK Navy could keep open all major ports in harassment or interdiction campaigns without US assistance.

Alternative 5: An Equal Mix of 10 MSCs and 10 MSIs

The alternative goes one step further than the previous alternative by doubling the number of MSIs: 10 MSIs would be substituted for 10 MSCs. These ships would be capable of meeting a harassment threat and an interdiction campaign without US assistance; the ROKN could keep open all major and some minor ports. This mix of minesweepers would require \$49.2 million in investment.

~~SECRET~~

~~SECRET~~

Alternative 6: Current CINCPAC Force Objective

A sixth alternative is the current CINCPAC/JSOP force objective of 20 MSCs. This would provide the least amount of risk and would establish a ROK mine force that would be capable of unilaterally meeting a North Korean harassment or interdiction campaign. All 20 units would have a mine hunting capability. This planned addition of 14 MSCs would give the ROK Navy a modern force which would only require US assistance against a prolonged interdiction campaign or for pre-assault sweeping in advance of an amphibious operation. It would cost \$59.6 million in investment.

A summary of the force level alternatives is furnished in Table 4-1 on the next page.

4.2 The North Korean Mining Threat

The remainder of this section addresses the arguments underlying ROK needs for minesweepers. The ROK might require minesweepers for four purposes: (1) to clear the way for amphibious operations against North Korea; (2) to protect South Korean ports against minor harassment (i. e., below the level of full-fledged hostilities); (3) to keep ports open for US reinforcements, i. e., against a mine interdiction campaign; and (4) to counter a combined harassment-interdiction effort. Before these situations are studied in detail, the North Korean mine warfare threat needs to be reviewed.

Our ability to predict how and when the North Koreans would use mines is limited. From our Korean War experience we know that North Korea is acutely aware of the potential that mine warfare offers -- at least from a defensive viewpoint -- and of the disruptive preparations and procedures that its use requires of the defenders. North Korea developed invaluable experience in the Korean War, and given concern for her defense is likely to have further developed an expertise in mine warfare over the years. While North Korea could, on its own, conduct offensive mining operations against ROK ports and coastal waterways, it is likely that first priority in use of mines would be reserved for defense against amphibious operations and, secondly, for protection of its own ports.

Number and Types of Mines - Our knowledge of the types and quantities of North Korean mines is again very limited. Apparently, all mines in the present inventory have been obtained from the Soviet Union. The North Korean inventory includes magnetic induction bottom mines (AMD-1000) and moored contact mines (MKB-3, M-08, and M-25). North Korea probably also has some bottom influence and pressure mines.

50X1 estimates that West Coast mining stocks total 450 magnetic induction bottom mines and 140 moored contact mines. East Coast mine stocks are unknown but probably include the moored contact mines since magnetic induction bottom mines are unsuitable in the deep waters of the Sea of Japan.

~~SECRET~~

~~SECRET~~

TABLE 4-1
SUMMARY OF FORCE LEVEL ALTERNATIVES

	<u>Alternative 1</u> Minimum no. of MSCs	<u>Alternative 2</u> Existing force level	<u>Alternative 3</u> MSC(O) Replace- ment w/MSIs	<u>Alternative 4</u> Interim mix of MSCs and MSIs	<u>Alternative 5</u> Equal mix of MSCs and MSIs	<u>Alternative 6</u> CINCPAC Force Objective
<u>Ships</u>	6 MSCs	6 MSCs	6 MSCs	10 MSCs	10 MSCs	20 MSCs
<u>Total</u>	6	4 MSC(O)s 10	4 MSIs 10	5 MSIs 15	10 MSIs 20	20
Coast (million US)						
Investment	0	0	12.92	33.14	49.24	59.64
Support (5 yr. total)	1.48	2.46	2.46	3.70	4.92	4.92
<u>Total</u>	1.48	2.46	15.38	36.84	54.16	64.56

~~SECRET~~

~~SECRET~~

There is no known local production of sea mines. North Korea has conducted research in this field and may be developing a production capability. We have no information concerning Soviet mine deliveries to Korea.

For defense of her beaches, ports and naval bases, North Korea would almost certainly require larger numbers of mines than she now possesses. The Soviet Union would probably supply them if they were to be used for defensive purposes. While it would be dangerous to assume that North Korea would reserve her total existing stocks for defensive purposes, at least some portion of it would be held back. Certainly, the stock of moored contact mines would largely be reserved for defensive purposes. There is no question, however, that North Korea could expend at least several hundred mines for offensive purposes if the military and economic payoffs were great enough and the political hazards were judged tolerable.

Delivery Capability 50X1
50X1 50X1
50X1 Other vehicles of delivery include four
W-class submarines, which can carry 29 mines each. 50X1
50X1

~~SECRET~~

~~SECRET~~

4.3 Existing ROK Minesweeping Force

The ROK minesweeping force currently totals 11 units. These units and their degree of readiness are indicated in Table 4-2 below:

TABLE 4-2

ROK MINESWEEPERS AND CAPABILITIES
(X indicates capability)

<u>Unit</u>	<u>(1)</u> <u>Degaussing Status</u>	<u>(2)</u> <u>Against Moored</u>	<u>(3)</u> <u>Against Influence</u>		
			<u>Magnetic</u>	<u>Acoustic</u>	
				<u>4V</u>	<u>6B</u>
MSC 522	sat.	X	X	X	X
MSC 523	sat.	X	X	X	X
MSC 525	sat.	X	X	X	X
MSC 526	unsat.	X	X	X	X
MSC 527	unsat.	X	X	X	X
MSC 528	sat.	X	X	X	X
MSC(0) 503	unsat.	X			
MSC(0) 519	sat.	X	X	X	
MSC(0) 520	sat.	X	X	X	
MSC(0) 521	sat.	X	X	X	
MSB 1	unsat.	X			

The ROK Navy currently has 11 sweepers it can use against moored mines. Nine could be used to stream Oropesa gear and the A MK 4 (v) sweep, but of these, two cannot meet minimal degaussing standards. Only the six MSCs have the A MK 6 (b) sweep capability. The three MSC(0)s with influence sweep capability are slow, being limited to about 5 knots with gear streamed.

The MSC(0)s are old. They are limited in sweeping capability and are becoming increasingly difficult and expensive to maintain. Their replacement will significantly increase the influence sweep capability. Because of their increased magnetic signature and larger size, sweeper risk is significantly increased when MSC(0)s are used as replacements for the MSCs. At present, the MSC(0)s must be used in a mix with the MSCs in order to avoid allowing the enemy to target specifically for the heavier and more vulnerable MSC(0).

~~SECRET~~

~~SECRET~~

4.4 ROK Amphibious Operations

Pre-assault sweeping for a ROK amphibious operation should be ruled out as a requirement for the ROKN. At present, the South Korean forces could not realistically carry out an amphibious operation larger than a commando-type raid. Although the ROKN has a sealift capability, North Korean air superiority and the doubtful ability of ROK forces to counter the Komar class torpedo boats would make an overt amphibious attack very risky. Major US assistance would be needed for any amphibious operation, including pre-assault mine clearance.

4.5 North Korean Low-Level Harassment

North Korea conceivably could use its mines for a low-level harassment campaign. In a scenario short of full-scale war, a limited number of mines could be surreptitiously laid by junks at minor ROK ports - particularly those near to North Korea. The objective would be to inflict casualties on military and commercial traffic, to force substantial use of mine countermeasures, to disrupt and impede the normal flow of traffic by forcing convoying, rigid control and extensive surveillance and examination of traffic. However, as the PUEBLO incident indicated, international or US traffic might be threatened. In addition, because of the uncertainty as to the extent or intensity of the mining, check sweeping of all ports might be required.

A surreptitious mine plant would be conducted with limited risk. One or two mines could be suspended beneath the junk and released when desired. If detected, the mines could be quickly dumped and the mission aborted. The average junk crews could probably manage the mine-laying operation. There is no requirement for special skills or technical understanding of the mine mechanism itself; all the delivery crew has to do is get the mine to the drop zone. The actual settings could be made by a technical staff weeks in advance. Hydrostatic devices normally arm the mines once they are dropped. The US Navy Mine Defense Laboratory estimates that an officer and from two to four technicians would be capable of the technical expertise required to actually prepare the mines for use in a harassment campaign.

The best defense against mines is still to prevent their planting. If this cannot be done, then the next best course is to control the traffic through the area. In the analysis, it was assumed that harbor traffic would be rigidly controlled and inspected to avoid surreptitious mine plants. Important traffic would be moved from and to deep water in convoys through channels selected at random. Just before a specific channel was used, as much precursing sweeping as possible would be accomplished. Statistical mine-sweeping procedures would be employed and all the ship counts would not be run off. It may be necessary to close the channel to all casual traffic during this period.

There is little likelihood that North Korea would embark on such a campaign. The political risks in terms of international disapproval (including

~~SECRET~~
221

~~SECRET~~

the Soviet Union) and possible ROK retaliatory escalation are too great, while the gains from destroying ROK shipping too limited. However, if North Korea did attempt such a campaign, the minesweepers required could range as high as 15-20 if all ports were threatened and kept open. An assumption is made that a 0.02 CAS/MIN ratio would be the highest acceptable level.

TABLE 4-3

ROK MINESWEEPER REQUIREMENTS TO DEFEND AGAINST
NK HARASSMENT CAMPAIGN (60 AND 120 DAYS)^{1/}
CAS/MIN 0.02

<u>Port</u>	<u>60 Day</u>	<u>120 Day</u>
Pusan	3	4
Chinhae-Masan	2	2
Mukhojin-Ni	0	0
Kunsan	1	2
Ulsan-Man	1	1
Mockpo	0	0
Yosu	1	1
Pohang-Dong	1	1
Samchon Po	1	1
Kuryongpo-Hang	0	0
Suyong	1	2
Inchon	<u>4</u>	<u>6</u>
Total	15	20

1/ The assumptions made and the methodology used in determining MSC requirements were developed by the US Naval Mine Laboratory study and are set forth in Appendix A. The CAS/MIN ratio of 0.02 means that North Korea would achieve two mine explosions against ROK or US shipping for every 100 mines laid. For planning purposes, the cost of reducing this ratio below a CAS/MIN ratio of 0.02 would be prohibitive in that the cost of additional minesweepers would exceed the cost of replacement ships and cargo.

Fewer MSCs would be needed if only the main ports were threatened, or if US minesweepers were used to protect US and international shipping. Some risk may be associated with relying on the US minesweepers based in Sasebo, Japan. These ships are getting old and may be returned to the US without replacement. The Sasebo based MSCs are scheduled for transfer to Naval Reserve Training status in FY 72 and 73. Replacements have not been funded. Moreover, it is possible that the US will be unable to retain present bases in Japan, Okinawa and the Republic of the Philippine Islands during the time-frame of

~~SECRET~~

~~SECRET~~

this study. The long distance from alternate bases in the Pacific and the low-speed capability of mine warfare ships must be taken into consideration.

4.6 Interdiction

A third possible ROK need for minesweepers would be to defend against a NK mine interdiction (or sustained harassment) campaign so as to keep sufficient ports open for the supply of US reinforcements. Of course, North Korea has not used mine warfare offensively in the past and it is not clear that it would resort to it. Whether NK will employ offensive mining will be in large part determined by the size of its future mine stocks, the distribution of mines for defensive and offensive purposes, and the extent of assistance from the USSR and China. Political factors are also important. A sustained interdiction campaign would be targeted primarily against US shipping and perforce directed at Korea's major ports. If the US had not been involved in hostilities until mining began, NK would, therefore, have made the decision to risk direct US involvement.

Ample delivery capacity exists for any reasonable delivery requirement. The most likely delivery vehicle would be junks. Use of submarines would be restricted to a water depth of 90 feet or greater. This, along with the severe tidal variations on the west coast and the submarines' normal bases of operations on the east coast, tends to limit their use. Air laid mines are possible but unlikely, since under these conditions air delivered bombs would yield a substantially better payoff.

Korean Ports and their Capacities - The major and minor Korean ports and their throughput capacity are shown below. In an interdiction campaign, Incheon would be particularly vulnerable and would probably be closed, and its traffic diverted to other ports. In fact, the bulk of US supply operations would probably be limited to four ports: Pusan, Masan, Yosu, and Pohang. Capacity of these ports (74,757 short tons) is more than twice the maximum expected average daily off-loading requirement (30,600 short tons) placed upon the four ports in a study of Korean requirements (MOVECAP). If open ports farther north are needed, Kunsan and Mukhojin-ni might be kept open. Also, since wartime POL requirements may be quite high, 1.5 to 1.8 million bbls. per month, Ulsan and Pohang-Dong might have to be kept open as fuel terminals. Mine countermeasures requirements may be levied in order to retain access to critical POL facilities. However, such high supply levels are not conceivable, short of a major US land force deployment to Korea for conventional defense against a sustained CPR/NKA attack, a highly unlikely eventuality.

~~SECRET~~

~~SECRET~~

TABLE 4-4

ROKN MINESWEEPER REQUIREMENTS
180 Day Interdiction Campaign

<u>Port</u>	<u>Throughput Capacity</u> (short tons/day)	<u>Total MSCs Req^{1/}</u>		<u>Modified MSC Req^{1/2/}</u>	
		<u>With</u>	<u>Without</u>	<u>MSCs</u>	<u>Throughput</u> (Short tons/day)
		<u>Acft</u>	<u>Acft</u>		
		<u>Mining</u>	<u>Mining</u>		
Inchon	12,420	Closed	Closed	Closed	0
Pusan	47,340	10	4	4	47,340
Chinhae-Masan	13,320	10	3	3	13,320
Mukho	1,102	1	0	Closed	0
Kunsan	1,440	2	2	Closed	0
Ulsan	4,140	4	1	1	4,140
Mockpo	2,520	5	0	Closed	0
Yosu	10,497	8	1	1	10,497
Pohong	11,160	2	1	1	11,160
Saechonpo	1,260	1	1	Closed	0
Kuryongpo	801	1	0	Closed	0
Suyong	1,260	4	2	Closed	0
		48	15	10	86,457

1/ CAS/MIN criteria for clearing

2/ No aircraft mining

MSC requirements to keep all of the ports open during an interdiction campaign are also shown in Table 4-4 above. As indicated, there is a significant reduction in sweeper requirements if enemy aircraft cannot be used to effectively lay mines. In both cases the assumption is made that Inchon will be closed. If only essential ports were kept open, a total of 10 minesweepers would be required to provide effective countermeasures during a 180 day interdiction campaign provided that aircraft could be prohibited from planting mines.

The 10 MSCs indicated above for an interdiction campaign could be reduced further. Alternative force levels to meet this threat would take into consideration the number of ports that will have to be closed and the subsequent import or general cargo throughput and POL requirements, the degree of ROK ability to deter or prevent aircraft from laying mines, and possible increases in the number and variety of North Korean mines. The intensity of operations at Chinhae and the need for almost constant access to the sea may preclude use of convoy techniques as the MDL envisions. Finally, the ROKN may not be able to provide adequate harbor defense and channel patrols to realistically hope to stay within the 0.02 CAS/MIN ratio. As in the case of minesweeper assets, the cost of adequate harbor defense channel patrol may become unrealistic.

~~SECRET~~

~~SECRET~~

4.7 Combined Harassment-Interdiction Campaign

During an actual Korean war, North Korea might conduct both harassment and interdiction offensive mining operations. This would place a heavy burden on the ROKN mine force and would seriously restrict its efforts to reallocate minesweepers to essential areas. ROK forces would become aware of an interdiction campaign when the intensity of the mine plant was clear. When the mine threat had been identified as an interdiction campaign, the ROK MSC requirement would increase to what was indicated above for the interdiction threat.

4.8 Sweeper Losses

Sweeper casualties will undoubtedly be incurred. If the NK concentrated on inflicting sweeper losses, they would miss many of the larger steel hulled ships and the benefits of a greater proportional payoff per mine invested. It is, therefore, unlikely that minesweepers would be a primary object of any North Korean interdiction campaign. However, 2-5 sweeper losses will be minimal if degaussing systems and magnetic signature control are properly maintained. MSC(O)s, which are limited in this regard, should be used only in deeper water, if possible. Alternatively, a mix of MSCs and MSC(O)s could be employed to prevent the North Koreans from specifically targeting the MSC(O)s.

If allowance is made for sweeper losses, the total requirement to meet the maximum probable threat could be as high as 25 MSCs.

4.9 Alternative Mine Force Levels

The high cost of minesweepers is a significant factor. At the present pace of funding, optimal objectives are not realistic. This section treats several alternative methods of achieving comparable force strengths. For comparative purposes, the cost of a reduced mine force and the existing ROK mine force are included.

As discussed previously in Section 4.1, there are 6 basic alternatives.

The first alternative is to retain only the effective mine counter-measures units presently in the ROKN inventory (the 6 MSCs). If this were done, only the key ports could be kept open and heavy and early reliance would be placed on US forces. There would be no reserve to replace sweeper losses, and a delay in obtaining logistical support by sea would have to be anticipated. While it provides very limited sweep capability, this alternative would save operating and maintenance costs and would help to preserve the limited investment funds available to the ROK navy.

In the second alternative, the present force level of ROK mine counter-measures units would be retained (6 MSCs and 4 MSC(O)s). While this would be a limited improvement over alternative one, it would add to the moored

~~SECRET~~

~~SECRET~~

sweep capability of the force and keep additional trained crews available for manning of future craft. It would also make available 4 more ships for employment to meet the current infiltration threat. The MSC(O)s have marginal influence sweep capability. They are comparatively costly to maintain and consume a disproportionate amount of funds when their sweeping capability is taken into consideration.

The third alternative would replace the remaining four MSC(O)s with MSIs. This would provide a force of 6 MSCs and 4 MSIs with approximately the same sweep capability and limitation of alternative two above. It has the advantage of minimizing investment costs and reducing the operating and maintenance costs of a 10 ship mine force. The ROKN would be capable of keeping open a number of its major ports in a harassment campaign (90% tonnage plus) and the major resupply ports in an interdiction campaign. A more detailed treatment of the MSI characteristics and capabilities is provided in the discussion of alternative four below.

A fourth alternative would be to continue the planned replacement of the remaining MSC(O)s at the rate of one per year along with the addition of 5 MSIs. This would enhance the sweep capability of the ROKN and would provide an interim level of force improvement in view of the limited amount of funding which is available. It would also allow time to train the crews and to develop whatever logistical support is peculiar to the MSI. The ROKN could meet both the short-term harassment and the interdiction threat with this force of 10 MSCs, or MSC(O)s and 5 MSIs. (Table 4-5 on the next page provides a comparison of MSC/MSI capabilities.)

~~SECRET~~
286

~~SECRET~~

TABLE 4-5

MSC/MSI CHARACTERISTICS

	<u>MSC</u>	<u>MSI</u>
Tonnage		
Loaded	360 tons	249 tons
Light	320 tons	120 tons
Length	144 ft.	111 ft.
Beam	28 ft.	24.6 ft.
Draft	10.5 ft (Nav.)	10 ft. (Nav.)
Speed	13.5 kts.	12 kts.
Complement (Off/Enl)	4/35	3/18
Range (nm)	2,200 at 10 kts.	3,500 at 8 kts.
Sweep Capability		
Moored	Yes	Yes
Magnetic	Yes	Yes
Acoustic	Yes	Yes
Minehunting Capability	Yes	No
Armament	2-20 mm cannon	1-50 Cal. M.G.
Current Estimated Cost	4.26 million dollars	3.22 million dollars
Sweep Current	4,500 Amps.	3,000 Amps.
Equivalent Capability	1.00	0.90

The fifth alternative would be to provide 10 minesweepers with mine-hunting capability and a total of 20 ships for actual mine clearance operations. This would entail replacing the remaining four MSC(0)s with MSCs as planned, and then adding ten MSIs rather than the additional ten MSCs. In terms of sweep capability the MSI is equivalent to 90% of an MSC. In an escalated conflict which invoked a US response, the Pacific Fleet units could provide additional mine-hunting capability. As indicated in the Mine Defense Laboratory Report (Appendix A), the provision of minehunting capability would permit a force reduction of only 5 to 10% for a 60-day harassment campaign and 10 to 20% for a 30-day interdiction campaign. The reason for the low pay-off is the high percentage of mines that would be buried if they were planted in ROK ports.

Since most of the ROKN sweep effort would be made in harbor clearance, the MSIs would be well suited to meet this particular requirement. The comparative cost of 2 MSCs versus 1 MSC and 1 MSI is provided in Table 4-6 on the following page. In terms of sweep capability, the MSC/MSI mix provides 95% of the capability for 84% of the cost.

~~SECRET~~

~~SECRET~~

TABLE 4-6

MSC/MSI COMPARISONS
(million dollars)

	<u>2 MSC</u>	<u>1 MSC and 1 MSI</u>
Investment (with spares)	5.96	4.92
Saving - \$1.04 million		

The sixth alternative is the CINGPAC force objective. This would provide a force of 20 ships with mine hunting capability and the maximum amount of sweep capability. It has the advantage of developing a mine force around one ship type and avoids training and logistical support problems caused by diverse equipment. With this force the ROKN would be more than capable of meeting all threat levels discussed without relying on the US. It has the disadvantage of high investment costs and the danger of limited realization due to any future reduction in funding. It is not based on the MDL analysis.

A resume of the number of ships in each alternative and the comparative support and investment costs are shown below:

TABLE 4-7

	<u>Minimum No. of Ships</u>	<u>Existing Force</u>	<u>Replacement of MSCOs with MSIs</u>	<u>Interim Mix MSC/MSI</u>	<u>Equal Mix MSC/MSI</u>	<u>CINGPAC Force Objective</u>
<u>Ships</u>						
MSC	6	6	6	10	10	20
MSC(0)	0	4	0	0	0	0
MSI	<u>0</u>	<u>0</u>	<u>4</u>	<u>5</u>	<u>10</u>	<u>0</u>
TOTAL	6	10	10	15	20	20
<u>Costs*</u>						
Investment	--	--	12.92	33.14	49.29	59.64
Operating						
FY 70	.28	.46	.46	.70	.93	.93
FY 71	.29	.48	.48	.72	.96	.96
FY 72	.30	.49	.49	.74	.98	.98
FY 73	.30	.51	.51	.76	1.01	1.01
FY 74	.31	.52	.52	.78	1.04	1.04

* Cost figures based on current MSC/MSC(0) MAP operating costs.

~~SECRET~~

4.10 Alternative Procurement Concepts

The following additional alternatives should also be considered in attempting to acquire additional minesweepers:

a. In FY 1973 when the Sasebo MSCs are phased out, transfer MSC 289 and 290 to the ROK Navy. These ships are a much newer class than the other 7 MSCs and would help to alleviate the ROKN minesweeper shortfall.

b. Transfer the US MSIs, Cape and Cove, to the ROK Navy as prototypes for additional MSIs. These units are oddities in the US fleet, and again would provide an interim addition to the ROK mine force.

c. Decommission the ROKN LSM(L) and refit it as an MSC assigned to support the MSLs programmed for FY 71.

d. Investigate purchase of used minecraft from other countries: Belgium, Japan, Indonesia. At present, Indonesia can only support a small portion of her fleet. (She presently has 5 MSIs.)

e. Consider ROK purchase of MSC/MSIs in Japan with long-term credit agreement between Japan and the ROK. The Japanese repair and shipbuilding facilities could easily manage the construction, and this might provide for the development of Japanese and Korean mutual defense arrangements.

~~SECRET~~
289

~~SECRET~~

SECTION 5: ROKN ASW REQUIREMENTS

The North Korean Navy is known to have four WHISKEY Class submarines, two of which were acquired from the USSR in 1960-61 and two which were added in 1966. All four of the submarines are stationed on North Korea's East Coast, one at Chado, the other three at Mayang do. Although additional submarines may be added, the development of a West Coast submarine fleet is not envisioned because of the severely restricted waters. All available intelligence data suggests these craft would be reserved for defensive missions.

5.1 Characteristics and Training

The WHISKEY Class submarines were built between 1950 and 1957. This particular class of submarine can make 17 knots on the surface and 15 knots submerged. It has a range of 3,100 nautical miles with one day on station and 2,800 nautical miles with 10 days on station. Sea endurance is about 40 days. Although we do not know the exact extent of training and proficiency, normal submerging and surfacing, long-range navigation, torpedo firing and ASW exercises have been observed. The North Korean Navy has conducted periodic submarine attack training since 1962. It is known that North Koreans were trained in the Soviet Union prior to receipt of the submarines, and it is possible that Russian advisors are in North Korea to assist in continued training and maintenance operations. All available information indicates that the submarines are in at least fair material condition.

5.2 Threat Potential

The WHISKEY Class submarine can carry 14 torpedos. The Soviets probably supplied this initial stock when the submarines were delivered and it is likely that at least one complete reload is available for each of the four submarines. This type of submarine can carry the Soviet ET-80(53) or the 53-38 torpedo. The ET-80(53), used only by the WHISKEY Class, is an electric drive torpedo with a 5,000 yard range and speed of 21.5 kts. It has a passive homing guidance system for use against surface targets. The 53-38 is air-stream propelled, and gyro-controlled. It has a 4,400 yd. range at 43.5 knots or 8,900 yards at 34.5 knots.

The submarines would probably be used to defend the East Coast of North Korea against amphibious assault and for limited strikes against naval operations off the coast. The submarines currently operate in territorial waters between Mayang do and Kimchaek on the East Coast. They have been careful to remain within or close to the claimed territorial limit of 12 nautical miles. Although the submarines could be used offensively against targets of opportunity in the Sea of Japan and off the Southeast coast, this use would only be subsequent to the decision to escalate the war beyond a North-South Korean confrontation. Once the decision had been made to risk third power involvement,

~~SECRET~~
290

~~SECRET~~

the North Koreans might attempt "ambush type" operations as far south as Chinhae. Because of the risks involved the submarines would probably not be used as mine layers. There has also been no indication that the submarines are being used to land infiltrators. If the ROK efforts to counter the current fast boat techniques are successful, the submarines could be used to land agents. The Defense Intelligence Agency estimates that the North Korean submarine forces may possibly be increased by one unit in 1973-74.

5.3 ROK Navy Anti-Submarine Warfare Capability

The ROKN has a limited ASW capability. ROK ships have participated with U.S. and Japanese forces in joint ASW exercises in the Sea of Japan at frequent intervals. They have done comparatively well, twice demonstrating the ability to hold down a submarine until it surfaces: In October, 1964, DE-73 held down the Soviet SS-017 for 17 hours when it was forced to surface; in February 1966, a second Soviet submarine was held for 23 hours until surfacing.

About half of the ROK ASW forces have scanning sonars while the remainder have searchlight sonars. This equipment is not optimum but can be effective if properly maintained and used. Although the submarine threat cannot be ignored, the cost of developing an extensive ASW capability to meet a submarine threat is prohibitive. Against the current North Korean force, the present ROK Navy capability might well be adequate; if not it could be supplemented by U.S. Navy P-3 random patrols with Japanese assistance in detection. Seventh Fleet assets could provide any additional forces necessary to neutralize the threat. Continuing improvements in the ROKN to provide a better anti-infiltration capability have also improved its ASW capability. Patrol aircraft used for counterinfiltration operations should also significantly enhance submarine detection capabilities. The current and programmed ROKN ASW forces are summarized in Table 5-1 below:

TABLE 5-1
ROKN ASW CAPABILITIES^{1/}

<u>Ship Type</u>	<u>Sonar</u>	<u>ASW Weapons</u>
3 DD	x	x
3 DE	x	x
4 PG	Limited	Limited
2 APD	x	x
4 PCEC	Limited	Limited
7 PCE	x	x
4 PC	x	x
4 PG	Limited	Limited
6 MSC	Limited	None

^{1/} The units have a variety of ASW weapons including aheadthrown weapons, depth charges and torpedos. They would be reasonably effective against the WHISKEY Class submarines. Most of these units can also function in a gunfire support or escort/patrol capacity.

In view of the present threat and commitment of the ROK fleet, additional units should not be added for their specific ASW capability. Continued improvements in communications and the addition of sonar equipped patrol craft will continue to make a significant improvement. The mutual interest that Japan and South Korea have in the Tsushima Strait could be the basis for the beginning of some form of joint defense effort.

~~SECRET~~