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TABLE 5-12

JP-4 HARDENING FOR ALTERNATIVE ROKAF FORCES<sup>1/</sup>

(Millions of Barrels)

Estimated Fuel Consumption <sup>2/</sup> by Tactical Jets	Alt A (JSOP)	ALT B	ALT C	ALT D	ALT (MAP)
ROKAF	148	216	222	340	1:
USAF TACGP Augmentation	<u>1,138</u>	<u>1,138</u>	<u>1,138</u>	<u>1,138</u>	<u>1,138</u>
Total	1,286	1,354	1,360	1,478	1,276
Present Storage Capacity <sup>3/</sup>	450	450	450	450	4.
Additional Hardened Storage Proposed for ROKAF	140	220	200	310	1
(Cost in Million \$ US)	(\$1.75)	(\$2.77)	(\$2.50)	(\$3.87)	(\$1.
Further Hardened Storage Required to Satisfy Anticipated Consumption	696	694	710	718	
(Cost in Million \$ US)	(\$9.05)	(\$8.37)	(\$8.68)	(\$8.17)	(\$8
Total Cost	\$10.80	\$11.14	\$11.18	\$11.44	\$9

<sup>1/</sup> Given basing posture assumptions following JCS study guidelines.<sup>2/</sup> During initial 45 Days of intense conflict.<sup>3/</sup> Includes terminal storage and tanks under construction; mostly unhardened.<sup>4/</sup> No hardening now planned, costs are if hardening option selected.~~SECRET~~

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5.9 Other Construction Costs

The estimated personnel increases and associated MAP costs for construction materials under each alternative are shown below:

TABLE 5-13

MAP COST - ROKAF PERSONNEL FACILITIES  
(Million \$ US)

	<u>Alt A</u> <u>(JSOP)</u>	<u>Alt</u> <u>B</u>	<u>Alt</u> <u>C</u>	<u>Alt.</u> <u>D</u>	<u>Alt E</u> <u>(MAP 74)</u>
Number of Additional ROKAF Military Personnel	1,121	6,619	5,202	16,532	--
Cost of Materials for Personnel Facilities	\$1.27	\$3.23	\$2.54	\$8.07	--
Cost Not Already Reflected in Basic Facilities Themselves	(\$1.27)	(\$1.31)	(\$ .79)	(\$2.16)	--

5.10 ROKAF Budget Costs

The total ROKAF construction program over FY 1970-74 for each alternative is summarized below:

TABLE 5-14

ROKAF CONSTRUCTION COSTS  
(Million \$ US)

Alt A (JSOP)	31.9
Alternative B	41.3
Alternative C	37.2
Alternative D	33.3
Alternative E	45.7
Alt F (MAP 74)	29.4

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SECTION 6: COSTING ALTERNATIVE ROKAF FORCE STRUCTURES

6.1 General

The cost differences between the alternatives discussed above are large for both US military assistance and ROK local currency costs. We estimate that the current program would cost \$146 million in MAP FY70-74 funds on the basis of the CINCPAC MAP plan.\* To make the ROKAF self-sufficient against the North Koreans another \$674 million is needed (total FY70-74 MAP program of \$869 million using F-5s rather than F-5-21s). ROK local currency budgets, ranging from \$120 million to \$310 million, do not vary as greatly. The ROK and MAP costs for the various alternatives are displayed in Table 6-1 on the next page with and without the F-5-21 substitute for the F-5.

6.2 Estimating ROK Costs

ROKAF costs include the projected recipient country budget expenditures for each alternative force structure without any change in the present policy for commercial consumables and other MAP funded assistance to Korea. Since the ROKAF budget functions on a calendar year basis, the following relationship was used to place the ROKAF costs on a comparable planning cycle with U.S. fiscal year activity:

$$\text{ROKAF Budget FY 19-1} = \frac{\text{ROKAF Budget CY 19-0} + \text{ROKAF Budget CY 19-1}}{2}$$

This relationship distorts ROKAF fiscal activity in any individual year. Nevertheless, the overall trend in ROKAF budgetary requirements in relation to U.S. assistance is not significantly affected.

The problem of costing the alternative ROKAF force structures is compounded by the significant appreciation forecasted even within the current ROKAF Won Budget. The 6146th AFAG has reported the following experienced and expected rates of appreciation, for instance, by type of ROKAF account:

	<u>67-68</u>	<u>68-69</u>	<u>69-70</u>
Personnel Maintenance and Management	35%	25%	30%
Unit Operations and Maintenance	25	22	23.5
Procurement of Equipment and Materiel	21	3	9
Construction and Real Estate	<u>170</u>	<u>156</u>	<u>-80</u>
TOTAL ROKAF Budget	42%	42%	17%

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\* Not including initial F-4D squadron investment costs.

ANNUAL COSTS FOR ALTERNATIVE ROKAF FORCE STRUCTURES  
(Million \$ US at 1968 PRICES)

	WITHOUT F-5-21 FOLLOW-ON OPTION <sup>1/</sup>						WITH F-5-21 FOLLOW-ON OPTION <sup>3/</sup>					
	FY 70	FY 71	FY 72	FY 73	FY 74	FY 70-74 <sup>2/</sup> Period	FY 70	FY 71	FY 72	FY 73	FY 74	FY 70-74 <sup>2/</sup> Period
<b>ALTERNATIVE A (JSOP)</b>												
US MAP	30.7	40.9	63.6	53.2	53.9	242.3	32.5	54.6	45.6	78.7	72.1	333.5
ROK	24.2	37.2	54.8	52.2	49.0	217.4	24.1	36.2	52.3	50.3	47.7	210.6
TOTAL	54.9	78.1	118.4	105.4	102.9	459.7	56.6	90.8	147.9	129.0	119.8	544.1
<b>ALTERNATIVE B</b>												
US MAP	35.6	77.0	148.1	120.8	102.1	483.6	36.4	83.7	163.8	132.8	110.8	527.5
ROK	25.4	45.6	74.5	67.9	60.2	273.6	25.5	45.9	75.3	68.5	60.6	275.8
TOTAL	61.0	122.6	222.6	188.7	162.3	757.2	61.9	129.6	239.1	201.3	171.4	803.3
<b>ALTERNATIVE C</b>												
US MAP	33.5	61.4	111.6	91.6	81.3	379.4	35.6	77.0	148.1	120.8	102.1	483.6
ROK	25.1	43.4	69.4	63.7	57.3	258.9	25.1	43.3	69.3	63.6	57.2	258.3
TOTAL	58.6	104.8	181.0	155.3	138.6	638.3	60.7	120.3	217.4	184.4	159.3	742.1
<b>ALTERNATIVE D</b>												
US MAP	42.3	127.5	265.9	215.0	169.5	820.2	43.3	134.8	283.0	228.6	179.4	871.5
ROK	26.1	51.1	87.5	78.3	67.6	310.6	26.0	50.7	86.7	77.7	67.2	308.3
TOTAL	68.4	178.6	353.4	293.3	237.1	1130.8	69.3	185.5	369.7	306.3	246.6	1179.8
<b>ALTERNATIVE E (MAP 74)</b>												
US MAP	28.8	26.4	29.8	26.2	34.6	145.9	30.6	39.7	60.6	51.7	52.4	235.0
ROK	22.7	25.7	28.1	30.8	33.7	141.0	22.6	25.0	26.5	29.5	32.8	136.4
TOTAL	51.5	52.1	58.0	57.0	68.3	286.9	53.2	64.7	87.1	81.2	85.2	371.4

<sup>1/</sup> Cost distribution assumptions for Alternatives A-D: 2% of FY 70-74 increase in costs over present MAP plan (Alt E) accrue in FY 70; 15% in FY 71, 35% in FY 72; 28% in FY 73; and final 20% in FY 74.

<sup>2/</sup> Does not include \$31.1 million FY 69 investment costs for initial F-4D squadron.

<sup>3/</sup> Cost distribution assumption for all alternatives same as in footnote 2; see pages 21, 22 for description of F-5-21 option. The suitability of the F-5-21 as a MAP replacement aircraft is still under discussion.

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Even during the preparation of the AFAG analysis, the base pay and allowance rate for the median ROKAF enlisted grade (SSgt.) was increased from \$130 per year to \$264 per year. This increase is symbolic of the cost-push phenomenon being experienced within the ROKAF Budget largely to make the salary scales more competitive with the private sector.

To meet this problem, 1968 constant prices were used. We assumed that allocations for MPA would increase at 10% per annum in 1968 prices, and that other cost categories would increase at 3-5% per annum in 1968 prices.

### 6.3 Investment Costs

In estimating US military assistance for the alternative ROK force structures, all related costs of a weapon system or a construction program were included.

Investments related to weapons systems to be introduced after FY 1974 were not included. Existing ROKAF aircraft or weapons systems programmed through the current FY 1969 MAP Program were considered as new investment requirements, with the exception of the F-4 squadron approved late in FY 1968. Since the first F-4 aircraft deliveries are not scheduled until October 1969, this squadron is considered politically committed but still subject to possible reprogramming. In light of the considerable cost for the F-4, this squadron has been separately identified in all of the alternative cost comparisons.

Aircraft and other equipment costs have been computed at MASL prices or at Air Force Dictionary projected average prices where current MASL listings were not available. Weapon systems forecast as "excess" or in long supply to USAF requirements have been priced at MAP rehabilitation rates only. All equipment investment costs include related supply operation expenses as well as initial ROKAF cadre CONUS MAP training related to the introduction of the alternative weapon systems.\* Construction has been priced in accordance with the costing formulas specified in Section 3 above.

### 6.4 Operating Costs

MAP operating costs include materiel, POL, and peacetime aircraft attrition for each alternative force. Supply operation costs related to the delivery of operating materiel and POL supplies have also been included. Materiel costs reflect the free issue of long supply spaces

\* Supply Operations costs include primarily Transportation (Project L10); Packing, Crating & Handling (Project L20); and Logistics Management Expenses (Project L60). The program amounts are statistically distributed to each MAP country program by OASD/ISA and are included in the country ceiling. Supply Operations costs are attributable to the Fiscal Year in which the delivery occurs rather than the year in which the equipment was initially programmed.

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to MAP and the utilization of reparable return credits by the ROKAF. All relevant US costs have been reflected with the exception of military personnel expenses, excluded in accordance with Section 632 (d) of the Foreign Assistance Act.

#### 6.5 Total FY 1970-74 Budget Costs

Total costs to the US for air defense of the ROK must include expenditures to maintain a USAF Korean presence - if we elect to continue doing so - as well as funds spent to improve the ROKAF. Alternative USAF deployment schedules are discussed at length in Section 7 of this Chapter. Shown below are total US costs for logical combinations of ROKAF improvements and USAF deployments.

TABLE 6-2

US COSTS FOR KOREAN AIR DEFENSE<sup>1/</sup>  
(Million \$ US)

<u>ROKAF Improvements</u>		<u>USAF Deployment</u>		<u>FY 70-74 Total</u>
ALT A (JSOP)	511.7	ALT II (Minimal Presence)	97.2	608.9
ALT B	753.8	ALT IV (Rapid Phaseout)	31.2	785.0
ALT C	598.1	ALT IIIB (Gradual Phaseout)	71.3	669.4
ALT D	1,230.8	ALT IIIA (Gradual Phaseout)	92.9	1,323.7
ALT E (MAP 74)	256.5	ALT I (Present)	122.6	379.1

1/ Costs of US Army missile air defenses not included; see Chapter 2.

FY 70-74 costs associated with each of the alternative ROKAF force structures are summarized in detail in Table 6-3 on the following page. US costs for ROKAF improvements could be as high as \$1.23 billion if effort is made to bring the ROKAF up to the maximum projected strength of the 1974 ROKAF; ROK budget costs for this force would be at least \$310 million.

Costs for alternative USAF postures in Korea, including aircraft deployments and general support forces but not MAAG personnel, are shown in Table 6-4 on the page after next. MAAG forces are treated in Chapter 2.

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TABLE 6-3

SUMMARY OF ALTERNATIVE ROKAF FORCE COSTS FY 70-74 (MILLION \$ US)

<u>MAP COSTS:</u>	<u>ALT A</u> <u>(JSOF)</u>	<u>ALT B</u>	<u>ALT C</u>	<u>ALT D</u>	<u>ALT E</u> <u>(MAP 74)</u>
<u>Investment Costs (Air Force)</u>					
A/cft & Basic Force (Excl F-4 Sqdn)	\$ 110.7	\$ 289.8	\$ 199.3	\$ 544.0	\$ 71.8
Initial F-4 Squadron	51.1 <sup>a/</sup>	51.1 <sup>a/</sup>	51.1 <sup>a/</sup>	51.1 <sup>a/</sup>	51.1 <sup>a/</sup>
Construction of ROKAF Personnel Facilities	1.3	3.2	2.5	8.1	-
Automation of ROKAF Air Control System	-	-	-	48.0 <sup>b/</sup>	-
Communications	- <sup>b/</sup>	- <sup>b/</sup>	- <sup>b/</sup>	-	- <sup>b/</sup>
(Subtotal: Air Force MAP Investment)	(163.1)	(344.1)	(252.9)	(651.2)	(122.9)
<u>Investment Costs (Army)</u>					
Point Defense of ROKAF Airfields and AC&W Sites	-	12.4	11.6	14.1	-
(Subtotal: MAP Investment Costs)	(163.1)	(356.5)	(264.5)	(666.3)	(122.9)
<u>Operating Costs</u>					
Aircraft Operations Support	130.3	153.4	142.8	176.4	74.1
Tech Assistance Automated AC&W System	-	-	-	1.5	-
Point Defense of ROKAF Airfields & AC&W Sites(Army)	-	24.8	23.2	28.1	-
(Subtotal: Operating Costs)	(130.3)	(178.2)	(166.0)	(206.0)	(74.1)
<b>TOTAL MAP COSTS</b>	<b>\$ 293.4</b>	<b>\$ 534.7</b>	<b>\$ 430.5</b>	<b>\$ 871.3</b>	<b>\$ 197.0</b>
<u>US MILITARY DEPARTMENT COSTS:</u>					
<u>Investment (Air Force)</u>					
Basic Airfield Improvements	41.6	41.6	41.6	41.6	41.6
New Operating Bases	159.0	106.0	53.0	212.0	-
Upgrade Existing Facilities	-	14.8	14.8	14.8	-
DOB	-	25.6	25.6	25.6	-
Extension to Kanguung	-	.5	.5	.5	-
Aircraft Hardening	-	12.5	13.5	20.6	8.4
POL Hardening-ROKAF/USAF Contingency	10.8	11.2	11.2	12.7	9.5
Less: Construction Chargeable to MAP	-1.3	-1.3	-0.8	-2.2	-
OTH Radar on Okinawa	-	-	-	20.0	-
(Subtotal: Air Force Investment)	(210.1)	(210.9)	(159.4)	(345.6)	(59.5)
Investment (Army) ALOC Airfields	8.2	8.2	8.2	8.2	-
(Subtotal: US Mil Dep Investment Costs)	(218.3)	(219.1)	(167.6)	(353.8)	(59.5)
Operating Costs (Air Force) OTH Radar	-	-	-	5.7	-
<b>TOTAL US MILITARY DEPARTMENT COSTS</b>	<b>\$ 218.3</b>	<b>\$ 219.1</b>	<b>\$ 167.6</b>	<b>\$ 359.5</b>	<b>\$ 59.5</b>
<b>TOTAL US COST</b>	<b>\$ 511.7</b>	<b>\$ 753.8</b>	<b>\$ 598.1</b>	<b>\$ 1,230.8</b>	<b>\$ 256.5</b>
(Net US Cost FY 1970-74 Period)	(456.6)	(702.7)	(547.0)	(1,179.7)	(205.4)
<u>ROK BUDGET COSTS (US Equivalent)</u>					
<u>ROKAF Investment Costs</u>					
Construction and Real Estate	31.9	41.3	37.2	45.7	29.4
ROKAF Operating Costs c/	185.5	213.7	204.3	243.8	111.6
(Subtotal: ROKAF Budget Costs)	(217.4)	(255.0)	(241.5)	(289.5)	(141.0)
ROKA Operating Costs for Airfield Defense	-	18.6	17.4	21.1	-
(Subtotal: ROK Operating Costs)	(185.5)	(232.3)	(221.7)	(264.9)	(111.6)
<b>TOTAL ROK COSTS</b>	<b>\$ 217.4</b>	<b>\$ 273.6</b>	<b>\$ 258.9</b>	<b>\$ 310.6</b>	<b>\$ 141.0</b>
<b>GRAND TOTAL US &amp; ROK COSTS</b>	<b>\$ 729.1</b>	<b>\$ 1,027.4</b>	<b>\$ 857.0</b>	<b>\$ 1,541.4</b>	<b>\$ 397.5</b>
(New Investment)	(362.2)	(565.8)	(418.2)	(1,013.7)	(160.7)
(Previous Investment)	(51.1) <sup>a/</sup>	(51.1) <sup>a/</sup>	(51.1) <sup>a/</sup>	(51.1) <sup>a/</sup>	(51.1) <sup>a/</sup>
(Subtotal: Investment Costs)	(413.3)	(616.9)	(469.3)	(1,064.8)	(211.8)
(Operating Costs)	(315.8)	(410.5)	(387.7)	(470.9)	(185.7)
Avg Annual FY 70-74 US Budget Cost (Mil Dept & MAP)	(91.3)	(140.6)	(109.4)	(236.0)	(41.1)
Avg Annual FY 70-74 ROK Budget Cost	(43.5)	(54.7)	(51.8)	(62.1)	(28.2)

<sup>a/</sup> FY 68 Program Cost aircraft delivery scheduled to commence in August 1969.

<sup>b/</sup> Communications treated in overall Korean program analysis study.

<sup>c/</sup> Pay and Allowances; Subsistence; Clothing and Individual Supplies; Procurement of Material; Equipment and Maintenance.

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TABLE 6-4

ALTERNATIVE USAF KOREAN DEPLOYMENTS<sup>1/</sup>  
(Personnel in Thousands; Costs in Million \$ US Net Over CONUS)<sup>2/</sup>

	FY70		FY71		FY72		FY73		FY74		Total Cost FY70-74
	Pers	Cost	Pers	Cost	Pers	Cost	Pers	Cost	Pers	Cost	
<u>Alternative I (Current Presence)</u>											
Aircraft Deployment	6.0	19.6	6.0	19.6	1.6	5.3	1.6	5.3	1.6	5.3	55.1
General Support	4.1	13.5	4.1	13.5	4.1	13.5	4.1	13.5	4.1	13.5	67.5
Subtotal	10.1	33.1	10.1	33.1	5.7	18.8	5.7	18.8	5.7	18.8	122.6
<u>Alternative II (Minimal Presence)</u>											
Aircraft Deployment	2.1	6.9	2.1	6.9	1.6	5.3	1.6	5.3	1.6	5.3	29.7
General Support	4.1	13.5	4.1	13.5	4.1	13.5	4.1	13.5	4.1	13.5	67.5
Subtotal	6.2	20.4	6.2	20.4	5.7	18.8	5.7	18.8	5.7	18.8	97.2
<u>Alternative III (Gradual Phase-out)</u>											
Variation A:											
Aircraft Deployment	4.0	13.2	2.1	6.9	1.6	5.3	--	--	--	--	25.4
General Support	4.1	13.5	4.1	13.5	4.1	13.5	4.1	13.5	4.1	13.5	67.5
Subtotal	8.1	26.7	6.2	20.4	5.7	18.8	4.1	13.5	4.1	13.5	92.9
Variation B:											
Aircraft Deployment	4.0	13.2	2.1	6.9	1.6	5.3	--	--	--	--	25.4
General Support	4.1	13.5	4.1	13.5	3.3	10.8	1.6	5.4	0.8	2.7	45.9
Subtotal	8.1	26.7	6.2	20.4	4.9	16.1	1.6	5.4	0.8	2.7	71.3
<u>Alternative IV (Rapid Phase-out)</u>											
Aircraft Deployment	2.1	6.9	--	--	--	--	--	--	--	--	6.9
General Support	3.3	10.8	1.6	5.4	0.8	2.7	0.8	2.7	0.8	2.7	24.3
Subtotal	5.4	17.7	1.6	5.4	0.8	2.7	0.8	2.7	0.8	2.7	31.2

<sup>1/</sup> Not including 174 USAF MAAG personnel costing \$3.0 million per year. See Chapter II for discussion of MAAG forces.

<sup>2/</sup> USAF world-wide average of \$3,300 per man-year.

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SECTION 7: US AIR AUGMENTATION

7.1 Summary

At present, the North Korean Air Force is numerically superior to the ROKAF by a considerable margin. DIA estimates the NKAF has 435 MIG-15/17/19s, 75 MIG-21s, and 80 IL-28 light bombers. Opposing this force are 132 F-86 D/F and 73 F-5 A/B ROKAF aircraft augmented by a USAF deployment of 151 tactical jets (F-100s, F-4s, F-105s, F-102s, F-106s).

Although we might consider building-up the ROKAF to the point where it would be able to successfully counter an air attack by North Korea alone (see ROKAF force Alt D - assuming ROK airbases were also sufficiently hardened to allow its force to survive a surprise attack), if the Chinese intervened in the air, a large USAF augmentation would still be necessary to defend South Korea. We may also wish to maintain a number of aircraft deployed to Korea as a force-in-being. Four alternative deployment schedules are outlined in the last part of this section. Costs range from \$55.1 million (additional costs over CONUS basing) if our present 151 aircraft contingent is maintained through FY 71 and reduced to 36 in FY 72, to \$6.9 million if the present force is reduced to 48 aircraft in FY 70 and withdrawn entirely in FY 71.

7.2 US Air Augmentation Threshold

In order to gauge how ROKAF strength influences the point in an escalating conflict at which US entry with air augmentation becomes necessary, we have sketched a number of possible air-confrontation scenarios and indicated roughly how the requirement for US air augmentation varies with the different ROKAF improvement alternatives. The scenarios are indicated below. Working from these situations, likely US air augmentation points indicated in Table 7-1 were developed. We assumed that the ROK/US reaction would be strictly defensive, or designed to deter. In the last three scenarios, we further assume that the ROKAF would emerge intact from a surprise air attack.

ECM Harassment The North Koreans, possibly receiving technical assistance from the USSR or CPR, initiate intensive electronic warfare by jamming ROK communications, radar, and electronic intelligence collectors. Spurious navigational signals emanating from the North lure ROK aircraft into DRK territory where they are impounded or shot-down.

Physical Harassment in International Waters/Airspace North Korean MIGs harass ROK military and civilian flights in international airspace; some are forcibly diverted to landings in the North and several are shot-down over international waters. ROK vessels are assaulted on the high seas.

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TABLE 7-1  
USAF AUGMENTATION THRESHOLD<sup>1/</sup>

<u>SCENARIO<sup>2/</sup></u>	<u>ALT A</u> <u>(JSOP)</u>	<u>ALT B</u>	<u>ALT C</u>	<u>ALT D</u>	<u>ALT F</u> <u>(MAP 74)</u>
1. ECM Harassment	-	-	-	-	-
2. Physical Harassment over international waters	-	-	-	-	X
3. Intrusion into South Korean airspace	X	-	-	-	X
4. Air and ground attacks along DMZ.	X	-	-	-	X
5. All-out air attack (without accompanying ground attack)	XX	- <sup>3/</sup>	X	- <sup>3/</sup>	XX
6. All-out conflict involving North Korea alone	XX	X	X	- <sup>3/</sup>	XX
7. All-out conflict involving North Korea and China	XX	XX	XX	XX	XX

KEY:

- US air augmentation would probably not be required,
- X US air augmentation would probably be required.
- XX US air augmentation would almost certainly be required.

<sup>1/</sup> A range of possible ROK/US responses can be envisioned under each of the scenarios cited. The requirement for USAF augmentation is, in turn, sensitive to the specific response chosen. The table assumes our response is strictly defensive

Intrusion into South Korean Airspace. North Korea conducts clandestine overflights of the ROK to infiltrate saboteurs and gather intelligence. No direct air attacks on ROK aircraft or ground facilities occur, but ROK/US casualties increase as the North intensifies ground probes against allied positions along the DMZ.

Air and Ground Attacks Along the DMZ ROK aircraft are attacked by MIGs over South Korean airspace; the NKAF strafes allied positions south of the DMZ in support of company-size commando raids. Allied positions are not breached and the insurgents in each instance withdraw.

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All-Out Air Attack Without Ground Attack North Korea launches heavy air attacks without warning against ROK airbases and other key military targets throughout South Korea. The ROK Air Force is damaged but not crippled by initial NKAF air strikes. Follow-up air attacks continue without an accompanying ground offensive.

All-Out Conflict Involving North Korea Alone North Korea launches a full-scale ground attack along the historic approaches to the city of Seoul. The ground offensive is supported by air strikes against ROK airbases, troop positions, and key military installations; DRK intent to at least capture and hold Seoul appears evident.

All-Out Conflict With CHICOM Participation North Korea launches an all-out attack with ground and air forces toward Seoul. The attack falters and DRK forces begin a slow withdrawal; ROK/US pressure intensifies and the CPR intervenes with air and ground combat forces to prevent a North Korean rout. Seoul is again threatened and its fall appears imminent.

### 7.3 USAF Deployment

We may wish to continue maintaining a number of US aircraft in South Korea as a force-in-being. In the absence of US ground forces, forward air presence would still signal the North Koreans of possible early US involvement in ROK defense. USAF OPLAN 12-68 postulates a US air presence in Korea composed of 48 tactical jets (36 F-4 D/D, 12 F-111D, 7 ELINT collectors, and 6 support aircraft. Under this plan, 36 additional USAF aircraft deployed initially (mostly C-7As and AC-119s) would be assimilated by the ROKAF as soon as possible. Three other USAF deployment postures, and their estimated costs, are indicated on page 261. USAF general support and MAAG personnel are not included in the table (see Table 1-4, pg. 186), since they are not directly tied to an aircraft deployment.

In the first alternative, the 151 aircraft now based in Korea would be maintained through FY71 and reduced to 36 aircraft in FY72. About 5960 USAF personnel, costing \$19.6 million per year more to base in Korea than CONUS, are directly tied to the operation, maintenance and support of the present deployment.

In Alternative II, a minimal US air presence is continued throughout the FY70-74 period. The current force would be reduced to 48 aircraft immediately (FY70) with a further reduction to 36 aircraft occurring in FY72. By basing only 48 rather than 151 aircraft in Korea for FY70 and FY71, this alternative saves about \$25 million over Alternative I.

The two remaining alternatives withdraw all US air from Korea. Phase-out is gradual in Alternative III (101 aircraft in FY70, 48 in FY71, 36 in FY72 with the last aircraft departing in early FY73), and rapid in Alternative IV with departure completed by FY71. Respectively, these alternatives would cost an estimated \$30 and \$48 million less than Alternative I.

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7.4 US Air Augmentation Capability

Chinese intervention could add up to 1,000 fighters and 150 bombers to the Communist air threat. Reinforcements of this magnitude would, however, severely tax North Korea's airbase facilities and not all of the CCAF aircraft could be forward-based. Depending on the extent of Chinese air intervention, a USAF tactical capability study indicates that a force ranging upwards from a "mobile" tactical package (576 tactical jet aircraft) to a maximum of 45 squadrons (768 tactical jets and 222 support aircraft) could be sent to support the ROKAF\*. Additional Navy, Marine Corps, and Army aircraft, as well as B-52 heavy bombers based on Okinawa, could also be marshalled against the maximum communist air threat. The US air augmentation capability and the smaller tactical package that might be used against a less than all-out NKAF/CCAF attack are shown in Table 7-2. The "mobile" package could add about 450 sorties per day to ROKAF efforts 65 hours after deployment, and could reach a sustained rate of 750-800 sorties daily after 30 days of operation.

TABLE 7-2  
POTENTIAL US AIR AUGMENTATIONS TO KOREA

	Against Lesser Communist Threat		Against Maximum Communist Threat			Total	
	USAF	Tactical Package	USAF 1/	USN 2/3/	USMC 3/ USA		
Tactical Strike Aircraft	576	<sup>1/</sup>	768	192	132	96 <sup>4/</sup>	1198
Support Aircraft	36	<sup>7/</sup>	222 <sup>5/</sup>	-	259 <sup>6/</sup>	20 <sup>6/</sup>	501
Total	612		990	192	391	116	1689

- 1/ Composed of F-4, F-111, A-7 aircraft.
- 2/ Operating from 3 CVAs on station.
- 3/ F-4, A-4 and A-6 aircraft.
- 4/ OV-10 aircraft.
- 5/ RF-4, C-130 and miscellaneous support aircraft.
- 6/ Primarily helicopters.
- 7/ RF-4 aircraft based in Japan.

\* Joint Working Group Study, Tactical Air Warfare Requirements in Korea; 552 to Korea, 24 to Okinawa; an additional 36 reconnaissance acft would be deployed to Japan.

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Even if most support aircraft operate from Okinawa or Japan, the existing ROK airbase system would have difficulty accommodating the 576 aircraft in the smaller package, let alone the 872 USAF/USMC tactical jets which might be sent to oppose an all-out communist drive. Allowing for the use of aluminum matting, mobile fuel bladders and other austere basing techniques, congestion on ROK airbases would still likely be severe to the point of impeding operating effectiveness. Unless aircraft shelters were provided for a large augmentation force, the crowded airbases would also present extremely lucrative targets to communist aircraft (see p. 203, Section 3, for projected basing densities). The USAF Tactical Mobility Study arrived at the augmentation basing posture shown in Table 7-3; USMC augmentation aircraft (about 132 tactical jets) are omitted from the table as are helicopters and Army OV-10s -- both capable of operating from utility fields or other primitive facilities. Any USN air augmentation would be based on CVAs.

TABLE 7-3  
USAF Air Augmentation Basing Posture

<u>Jet Operational Airfields</u>	<u>Mobility Package</u> <u>(Lesser Communist</u> <u>Threat)</u>		<u>Full Augmentation</u> <u>(Maximum Communist</u> <u>Threat)</u>	
	<u>Type</u>	<u>Number</u>	<u>Type</u>	<u>Number</u>
Kimpo	-	-	F-4	96
Suwon	F-4	24	F-4	24
Osan	A-7, F-4	96	A-7, F-4, RF-4	180
Kunsan	A-4, A-7	120	C-130, A-7, F-4 RF-4	188
Kwang-JU	F-111	48	F-111, Misc	94
Taegu	F-111	24	F-111, C-130	120
<u>Marginally Jet</u> <u>Capable Airfields</u>				
Pyongtaek	A-7	72	A-7	72
Pusan	F-4	72	F-4, C-130	120
Kimhae	F-4	72	F-4	72
Kangnung	F-4	24	F-4	24
Kadena (Okinawa)	F-111	24	-	-
Japan	RF-4	36	-	-
Total		<u>612</u>		<u>990</u>

TABLE 7.4

SUMMARY OF ANNUAL COSTS:  
 ALTERNATIVE USAF KOREA AIR DEPLOYMENTS  
 (Millions of \$ US at 1968 Prices)

	FY 70		FY 71		FY 72		FY 73		FY 74		Cost For FY 70-74 Period
	Strength 1/	Cost 2/	Strength 1/	Cost 2/	Strength 1/	Cost 2/	Strength 1/	Cost 2/	Strength 1/	Cost 2/	
<u>Alternative I (Present)</u>											
Present 151 Acft US Deployment thru FY 71, 36 Acft from FY 72 thru FY 74.	151/ 5959	134.1 19.6	151/ 5959	134.1 19.6	36/ 1600	42.0 5.3	36/ 1600	42.0 5.3	36/ 1600	42.0 5.3	394.2 55.1
<u>Alternative II (Minimal Presence)</u>											
48 Acft thru FY 71, 0 Acft from FY 72 thru FY 74.	48/ 2100	54.9 6.9	48/ 2100	54.9 6.9	36/ 1600	42.0 5.3	36/ 1600	42.0 5.3	36/ 1600	42.0 5.3	235.8 29.7
<u>Alternative III (Gradual Phase-Out)</u>											
101 acft in FY 70, 48 in FY 71, 36 in FY 72, 0 acft in FY 73, and FY 74.	101/ 4000	89.9 13.2	48/ 2100	54.9 6.9	36/ 1600	42.0 5.3	-	-	-	-	186.8 25.4
<u>Alternative IV (Rapid Phase-Out)</u>											
48 Acft in FY 70, 0 Acft from FY 71 thru FY 74.	48/ 2100	54.9 6.9	-	-	-	-	-	-	-	-	54.9 6.9

1/ Aircraft/Personnel; includes support personnel essential to aircraft deployments.  
 2/ Total cost/Net cost over CONUS; USAF average net costs over CONUS of \$3,300 per manyear.  
 3/ 30 F-4s, 6 F-111s.  
 4/ 42 F-4s, 6 F-111s.

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CHAPTER FOUR

NAVAL REQUIREMENTS FOR KOREAN DEFENSE

Contents: Introduction and Summary, p.262; ROK and US Roles, p.269; Naval Forces in the Korean War, p.272; ROK Minesweeping Requirements, p.275; ROK ASW Requirements, p.290; Defense Against OSA-KOMAR Guided Missile Boats, p.292; Counter-Infiltration Requirements, p.295; Alternative Force Structures, p.305.

SECTION 1: INTRODUCTION AND SUMMARY

1.1 General

The ROK Navy (ROKN) faces a number of North Korean threats. Currently, defense responsibilities are met jointly by US and ROK forces, but a significant number of threats remain which must be met by the ROKN alone. The programs considered here include minor improvements of the present forces, ROK self-defense against infiltration threats, ROK self-defense against the spectrum to likely threats, and a ROK regional force (see Section 2).

The North and South Korean navies have been heavily influenced by their experience during the Korean War. Both are the product of military assistance programs conducted by allied governments, the Soviet Union and the US respectively. Both have been essentially coastal defense forces (see Section 3).

1.2 Specific Problems Addressed

a. Defense Against Mine Warfare: The ROK could face a harassment or interdiction mining campaign from the north. The North Koreans have a stock of mines, both influence and moored, plus sufficient delivery capability to launch an effective harassment campaign against the ROKN. In this study, statistical minesweeping procedures developed by the US Navy Mine Defense Laboratory were used to estimate the number of ROKN minesweepers required for varied combinations and durations of mine plants, in order to keep the number of ship losses at an acceptable casualty ratio per number of mines laid. By varying assumptions concerning the threat, and assuming selective closing of less important ROK ports, the number of minesweepers required to meet each threat scenario was estimated. ROKN minesweeper requirements for a 180 day interdiction campaign are indicated in Table 1-1 on the next page.

In this study emphasis is placed on an attempt to determine a self sufficient ROKN minesweep capability. The variants upon which alternative force levels are developed are: (1) the likelihood of NK offensive mining; (2) the extent of NK mining operations; (3) the number of ports kept open; and (4) the US willingness to see the ROKN under or over estimate requirements.

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TABLE 1-1

ROKN MINESWEEPER REQUIREMENTS  
180 Day Interdiction Campaign

<u>Port</u>	<u>Throughput Capacity</u> <u>(Short tons/day)</u>	<u>Total MSCs Req<sup>1/</sup></u>		<u>Modified MSC Req<sup>1/2/</sup></u>	
		<u>With</u> <u>Acft</u> <u>Mining</u>	<u>Without</u> <u>Acft</u> <u>Mining</u>	<u>MSCs</u>	<u>Throughput</u> <u>(Short tons/day)</u>
Inchon	12,420	Closed	Closed	Closed	0
Pusan	47,340	10	4	4	47,340
Chinhaw-Masan	13,320	10	3	3	13,320
Mukho	1,102	1	0	Closed	1,102
Kunsan	1,440	2	2	Closed	1,440
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
Samchonpo	1,260	1	0	Closed	0
Kuryongpo	801	1	0	Closed	0
Suyong	1,260	4	2	Closed	0
	110,860	48	15	10	86,457

1/ CAS/MIN criteria for clearing.

2/ No aircraft mining.

Six alternative mine force levels have been developed to meet the mine threat with varying degrees of risk. They range from a token force heavily dependent on pre-deployed US minesweeper assets, to an alternative which would lead to a fully independent ROKN mine force capable of countering the maximum threat:

The first alternative would reduce the ROKN mine force to the existing six MSCs. This alternative would reduce operating costs but would weaken the already inadequate ROK mine countermeasure capability. Heavy reliance would have to be placed on the United States in the event of extensive NKA offensive mine warfare unless, most of the ports are closed.

The second alternative would retain the existing force of 10 minesweepers, 6 MSCs and four MSC(0)s. The MSC(0)s are obsolete, have limited influence sweep capability, and are proportionally more expensive to maintain. Without replacement, the minesweeping capability of the ROK Navy would continue to decline. As in the first alternative, NKA offensive mining would not be considered likely. If it occurred some ports would have to be closed or the ROK force would require early assistance from the US.

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The third alternative would be to replace the four MSC(0) with new construction MSIs. The advantage of this alternative is the saving in investment costs realized by replacing the MSC(0)s with MSIs rather than MSCs. The MSI has about 90% of the sweep capability of an MSC. However, it does not have a mine hunting capability and lead time on constructing MSIs would have to be taken into consideration. The investment cost would be 12.9 million dollars. Such a force could be adequate against NK offensive mining, provided not all ports were kept open.

The fourth alternative provides an interim mix of 10 MSCs and 5 MSIs. The major consideration here is the phased creation of additional mine countermeasures capability with minimum investment costs. This alternative would cost \$33.1 million in investment funds. It would enable the ROK to keep open all major and some minor ports.

The fifth alternative carries the objective of alternative four one step further and creates an equal mix of 10 MSCs and 10 MSIs. This would create an autonomous ROKN mine force that could assist other NEA allies. It would be limited only by its reduced mine hunting capability. This mix of minesweepers would require \$49.2 million in investment funds.

The sixth alternative is a force objective which represents the current CINCPAC and JSOP force objective. This would give the ROK 20 MSCs with a fully autonomous minesweeping and mine hunting capability. This is the most expensive alternative in terms of investment. It would cost \$59.64 million. It was not developed on the basis of the US Navy Mine Defense Laboratory study.

The following considerations argue against heavy reliance on US Naval Forces: (1) Existing MSCs home-ported in Japan may be phased-out without replacement; (2) US Navy mine units are not normally assigned to the Seventh Fleet in sufficient quantity to meet ROK mine countermeasures requirements. (3) We cannot be assured of forward bases in Japan or Okinawa within the time frame of this study; (4) US units, other than the Sasebo MSCs, are MSOs which are much more expensive in terms of investment and operating costs; (5) Reaction time for US based minesweepers could be approximately six to eight weeks; (6) assigning US naval units to help meet the threat in Korea drastically reduces the flexibility of the US Navy and US military planners; (7) The cost differential between ROK and USN ships is large. The annual operating cost of a ROKN MSC is \$46,261. By comparison, the annual operating cost of a US MSC in the Pacific is \$376,000. If US mine force units were required to meet these ROK responsibilities, they would probably be MSOs (Ocean Minesweepers). The annual operating cost of an MSO based in the Pacific is \$878,000.

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b. Anti-Submarine Warfare: North Korea has four Whiskey Class submarines. Though they are considered capable of offensive operations against allied shipping, agent infiltration and mine laying, their primary use is probably for defense.

We have only limited knowledge about the actual operating conditions of these units and the training readiness of their crews. Although these are post-World War II vintage boats, the ROK Navy has comparable ASW capability and can meet the current level of this threat unaided. However, basic communications and electronic improvements are needed. Current and programmed improvements of multi-purpose ships have steadily enhanced the ASW capability of the ROKN.

The concentration of the North Korean submarines on the East Coast, and the restriction of operations to NK waters, has helped to reduce the threat potential of these units. In view of the limited size of the threat, the principal program implication involves improving communication capabilities.

c. Defense Against Guided Missile Boats: Another North Korean naval capability bearing consideration is the growing fleet of OSA/KOMAR guided missile boats. At present, the North Korean Navy is known to have four OSA boats and from 10 to 12 KOMARS. These units are designed to carry the SS-N-2 "STYX" missile and, although the existence of a missile inventory has not been confirmed, the assumption must be made that a missile capability does exist. The "STYX" missile has an approximate range of 20nm. Although it is thought that these boats would probably be assigned defense roles, their offensive potential cannot be ignored.

At present, the only possible ROK defense against these boats is through air strikes. The ROKN has no effective means of detection or defense against the OSA-KOMARS. In view of the limited detection capability of both the ROKAF and ROKN and proven communication and coordination shortcomings, this defense is marginal at best (if attacks on NKN naval bases are not possible). This problem is discussed fully in Section 6.

d. Seaborne Infiltration: Since 1965 there has been a marked increase in the number and magnitude of infiltration efforts. The objectives of the infiltrators include intelligence collection, propaganda dissemination, terrorism, sabotage, agent recruitment and efforts to establish a guerrilla base in South Korea. South Korean naval forces have been increasingly effective in stopping this traffic. The reduced number of landings is attributable to increased patrolling (see Section 7.2). For illustrative purposes, alternative C below deals specifically with the CIGFIR anti-infiltration requirements and a sub-case deals with the total CIGFIR package.

### 1.3 Alternative Program

Four alternative ROK Navy force levels have been developed to meet the range of problems presented by these threats:

- a. The present force without improvements;

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b. The present force with minimal communications, electronics and armaments improvements;

c. An improved force which concentrates on Counter-Infiltration Capability Improvements. A sub-case is developed which includes the anti-infiltration and additional force improvements.

d. An independent ROK naval capability developed along present force objective lines.

A number of limiting factors which inhibits deviant force levels are enumerated in the study. Force structure requirements are significantly influenced by US and UN, as well as ROKN defense roles. These alternatives, qualifying factors, and resultant costs are summarized in Table 1-2 on the next page and examined in Section 8 and in the appendices. Table 1-3 illustrates the number of naval units provided by each force level alternative.

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TABLE 1-2

SUMMARY OF ALTERNATIVE COSTS (in million U.S. dollars)\*

	<u>FY 70</u>	<u>FY 71</u>	<u>FY 72</u>	<u>FY 73</u>	<u>FY 74</u>	<u>Total FY 70-74</u>
<u>Present Program (Alternative A)</u>						
ROK Budget	22.9	23.6	24.3	25.0	25.8	121.6
MAP						
Operating Cost	12.4	12.8	13.2	13.6	14.0	66.0
Investment Cost	0.0	--	--	--	--	187.6
<u>Improved Force (Minimal)(Alt. B)</u>						
ROK Budget	22.9	23.6	24.3	25.0	25.8	121.6
MAP						
Operating Cost **	12.4	12.8	13.2	13.6	14.0	60.6
Investment Cost	10.3	--	--	--	--	10.3
						192.5
<u>Improved Anti-Infiltration Capability</u>						
<u>Alternative C</u>						
ROK Budget	25.0	25.8	26.6	27.4	28.2	133.0
MAP						
Operating Cost	13.4	13.8	14.2	14.6	15.0	71.0
Investment Cost	19.1	--	--	--	--	19.1
						223.1
<u>Alternative C (CIGFYR subcase)</u>						
ROK Budget	25.8	26.6	27.4	28.2	29.0	137.0
MAP						
Operating Cost	14.8	15.3	15.8	16.7	17.2	79.8
Investment Cost	62.9	--	--	--	--	62.9
						279.7
<u>Independent Capability (Alternative D)</u>						
ROK Budget	22.9	23.6	24.3	25.0	25.8	121.6
MAP						
Operating Cost	12.1	12.6	12.7	13.4	14.3	65.1
Investment Cost	4.3	7.2	8.9	7.0	7.9	32.3
						219.0

\* Includes inflation at an annual rate of 3%.

\*\* This estimate includes \$5,534,000 investment costs contained in the FY70 CINCPAC MAP plan.

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TABLE 1-3

ALTERNATIVE ROK NAVAL FORCE STRUCTURES

<u>Ship Type</u>	<u>Present Force Alt A FY 74</u>	<u>Present Force + Min. Improve. Alt B FY 74</u>	<u>Present Force + Anti.Infil. Alt C FY 74</u>	<u>Present Force + CIGFIR Alt C1 FY 74</u>	<u>Optimum Force Multilateral Force, Alt D FY 74</u>
General Combat DD/APD	5	5	5	5	5
Patrol Surveillance Ships: PG/DE/FF/ PC/PCE/PCEC	26	26	26	26	26
Boats: LCPL/SB/FB/ LFB/PCF	32	31	45	76	56
Amphibious Ships LSMR/LSM/LST/LCU	20	20	26	26	21
Minesweepers MSC/MSC(O)/MSB	11	11	11	40	20
Auxiliaries ARL/AKL/AO/ATA/AOG	<u>12</u>	<u>12</u>	<u>12</u>	<u>14</u>	<u>16</u>
Total	105	105	125	187	144

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