

~~SECRET~~

spaces) at an annual cost of about \$32 million. The precise composition of the MAAG increases would have to be studied in detail based on the improvement programs to be supported. Strength and organization of the current PROVMAAG-K is at Appendix B, Annex II.

In para. 11.6, a Reforger concept is considered which would insert a brigade or division force using prepositioned equipment. If this concept were used, a small cadre would be required in-country to maintain the prepositioned equipment for these forces. The strength of this cadre force would be around 500 spaces and would cost around \$8 million annually.

Detail costs for this alternative are shown in Table 11-2.

11.5 Relocation of Divisional Forces Within Korea

Relocation of divisional forces south of Seoul provides increased flexibility to the US over the present deployment (Alternative 1) by removing the divisions from their highly vulnerable forward positions along the DMZ and north of Seoul. Under the one division option (Alternative 2) relocation would provide the added flexibility of permitting the force to be used in a dual role as a regional reserve. The representative costs of repositioning one or two divisions to locations selected at random within Korea was computed and is summarized below:

TABLE 11-4
SUMMARY OF ONE-TIME CONSTRUCTION COSTS
FOR
REPRESENTATIVE DIVISIONAL RELOCATION IN KOREA^{1/}
(millions of \$)

<u>Alternative</u>	<u>One Division</u>	<u>Two Divisions</u>
A - Improve Present Locations ^{2/}		130.1
B - Regional Reserve vic Suwon-Pyongtaek	148.5	297.0
C - Regional Reserve vic Taegu-Pusan	141.6	283.2
D - Reserve vic Seoul	81.2	162.4

^{1/} Semi-permanent construction. See App. C, Annex II, for details; some consolidation and joint useage by two divisions may be possible with some cost reduction. Costs for this option cannot be determined until precise locations are selected.

^{2/} To improve existing facilities to meet DA semi-permanent construction standards (see Appendix C, Annex II).

~~SECRET~~

One-time relocation costs would be in addition to the annual costs for the Korea deployment column shown in Table 11-2.

11.6 Reforger Concept

In considering withdrawal of both US divisions from the ROK (Alternative 3), it may be desirable to provide more convincing evidence to the Koreans of continuing US support than the small residual land force and the USAF units. This could be accomplished under the Reforger concept whereby the equipment for forces ranging from one brigade to a division, plus an initial support increment (ISI) could be prepositioned in Korea in dehumidified storage. The division redeployed to CONUS Active could be earmarked for Korea. To provide credibility to this alternative, the designated division (brigade) would be exercised periodically to Korea to demonstrate our resolve to the ROK and to act as a deterrent to North Korea. Due to the 15 day sustaining capability of the division, the ISI need not necessarily be exercised. To insure a high state of readiness (C-1) for deployment of the division (brigade) and to enable it to sustain itself initially in combat, 100% of the equipment of the division and ISI should be prepositioned.

A small cadre force (500 US, 160 LN civ) would be retained in Korea to maintain the equipment in dehumidified storage. This number would increase if the US support base for depot maintenance were not available. As an alternative to a personnel increase, depot maintenance requirements could be obtained from the ROKA support base on a reimburseable basis provided the prepositioned equipment was common with that of ROKA forces. The strength of the cadre force is based on the personnel requirements for open storage experience in NATO. While there is no experience data for personnel requirements to maintain equipment in controlled humidity storage, requirements are expected to be reduced by one-third. We used the lower figure since our costs are developed for controlled humidity storage. For the brigade force, the strength would be approximately 166 US and 50 LN civilians. Annual costs for the Reforger cadre range from \$2.8 million for the brigade force to \$8.2 million for the division force (see Table 11-2).

Upon initial redeployment of the two divisions from Korea, the equipment of one division would be prepositioned in Korea. The division redeployed to CONUS Active would retain its equipment while the division placed in CONUS Reserve would be re-equipped at reserve force levels. If the baseline force level would not permit deployment to the CONUS Reserve, or if equipment is available within the baseline force, the one-time cost of equipping the division at reserve levels would not be incurred.

Initial costs for this alternative range from \$79.1 million for a 10,000 man brigade force to \$191 million for a 32,000 divisional force. Detail costs involved in the Reforger concept are as shown in Table 11-5 on the following page.

~~SECRET~~

~~SECRET~~

TABLE 11-5

INITIAL COSTS FOR A TYPE KOREAN REFORGER CONCEPT^{1/}

(millions of \$)

Cost Category	Brigade Force ^{2/}			Division Force ^{3/}		
	Bde Level	Spt Level	Total	Div Level	Spt Level	Total
	Forces	Forces		Forces	Forces	
Construction of Controlled Humidity Storage Facilities ^{4/}	2.9	3.0	5.9	8.4	9.5	17.9
Annual Recurring Costs ^{5/}	1.4	1.4	2.8	3.9	4.5	8.4
Procurement Cost for CONUS Reserve Div ^{6/}	<u>28.0</u>	<u>43.0</u>	<u>71.0</u>	<u>18.3</u>	<u>137.0</u>	<u>155.3</u>
Total Initial Cost ^{7/}	4.3 (32.3)	4.4 (47.4)	8.7 (79.7)	12.3 (30.6)	14.0 (151.0)	26.3 (191.6)

^{1/} Costs based on NATO Reforger experience; exercise costs have not been included but would vary between \$5-10 million, depending on the size of the force deployed and its readiness condition.

^{2/} 5,000 combat troops - WT 12,400 ST; 5,000 ISI - WT 12,800 ST.

^{3/} 16,000 combat troops - WT 36,200 ST; 16,000 ISI - WT 41,000 ST.

^{4/} Construction costs are one time.

^{5/} Annual recurring costs include modernizing and transportation costs, plus parts and equipment to maintain controlled humidity storage sites and personnel costs (cadre) to maintain the storage sites.

^{6/} One-time cost for reserve Inf Div with 8 Inf, 1 Mech, 1 Armor Bn. Cost includes initial costs for the equipment set plus maint float. If the baseline force structure will not support redeployment of a division to CONUS Reserve, or if equipment is available within the baseline force, these costs would be deleted.

^{7/} Figures in parenthesis represent the total initial cost if equipment has to be procured for the CONUS Reserve division.

~~SECRET~~

~~SECRET~~

11.7 US Support to ROKA

Not included in the annual costs of alternative US deployments discussed above are the costs of US units supporting ROKA. These costs, discussed in Section 8.4, ROKA Support, would be added to the annual costs of the various options outlined in Table 11-2. They are summarized in Table 11-6 on the following page:

~~SECRET~~

~~SECRET~~

TABLE 11-6

COST OF US SUPPORT STRUCTURE AUGMENTATION TO ROKA¹
(Support Forces are CONUS Active Deployment)
(Millions of \$)

Alternative ^{2/}	14 Div					16 Div					18 Div				
	Strength (000's)	FY Cost ^{3/}			Total Cost	Strength (000's)	FY Cost			Total Cost	Strength (000's)	FY Cost			Total Cost
		72	73	74			72	73	74			72	73	74	
Total US Augmentation	84.3	314.7	419.6	314.7	1,049.0	92.0	343.0	457.4	343.0	1,143.4	113.0	422.1	562.8	422.1	1,407.0
Comparative Advantage	4.0	14.9	19.9	14.9	49.7	4.0	14.9	19.9	14.9	49.7	4.5	17.1	22.8	17.1	51.9
US Rear Area Only	.4	1.5	2.0	1.5	5.0	.4	1.5	2.0	1.5	5.0	.5	2.2	2.9	2.2	7.3
US Rapid Deployment	.4	1.5	2.0	1.5	5.0	.4	1.5	2.0	1.5	5.0	.5	2.2	2.9	2.2	7.3

^{1/} Support Level Cost Factor of \$12,452 per man for CONUS Active Deployment used (\$16,403 Korea Deployment Cost minus CONUS Active Deployment Reduction \$3,951 per man). See Tables 11-2 and 11-3, CONUS Active Deployment Column.

^{2/} See Section 8.4.2 for discussion of alternatives.

^{3/} Costs are distributed over Fiscal Years beginning in FY 72 as follows: 30% FY 72; 40% FY 73; 30% FY 74.

~~SECRET~~

	20 Div				Total Cost	21 Div				Total Cost
	Strength (000's)	FY Cost				Strength (000's)	FY Cost			
		72	73	74		72	73	74		
0	123.2	460.2	613.6	460.2	1,534.0	156.1	613.1	817.5	613.1	2,043.
0	4.6	85.9	114.5	85.9	286.3	5.4	23.1	30.9	23.1	77.
3	.5	2.2	2.9	2.2	7.3	.7	2.6	3.5	2.6	8.
3	.5	2.2	2.9	2.2	7.3	.7	2.6	3.5	2.6	8.

~~SECRET~~

CHAPTER THREE

ROK AND US AIR FORCES FOR KOREAN DEFENSE

Contents: Summary, p.178; Alternate ROKAF Force Structures, p.188; Airfield and Basing Posture, p.203; Air Defense, p.210; Construction, p.229; Costs, p.250; US Air Augmentation, p.255;

SECTION I: SUMMARY

1.1 Threat

Since the Korean War, a considerable disparity has developed between the capabilities of the Republic of Korea Air Force (ROKAF) and the North Korean Air Force (NKAF). At present, the NKAF possesses an estimated 435 MIG-15/17/19s, 75 MIG-21s, and 80 IL-28 light bombers, while the ROKAF has 132 F-86 D/F and 73 F-5 A/B aircraft. * Although it is difficult to compare precisely the overall effectiveness of different aircraft types, the ROK F-86s are about equivalent in performance to NKAF MIG-15/17s, and F-5s are comparable to MIG-21s. ** In evaluating relative capabilities there is a tendency to emphasize hardware; however, aircrew skill and maintenance proficiency are at least as important. The ROKAF has traditionally experienced difficulties in the technical maintenance area; North Korea has gained valuable aircrew combat experience flying against US aircraft over North Vietnam.

There is uncertainty surrounding estimates of the NKAF 1974 inventory. North Korea has been receiving MIG-21s since 1963 with indications that delivery of the missile-equipped all-weather version has recently accelerated. The North Koreans could have a maximum force of 375 MIG-21s, 50 MIG-17s and 60 IL-28s by 1974 if they are able to assimilate an average of 60 new MIG-21s per year for five consecutive years. Although the MIG-21 is a relatively uncomplicated aircraft, a more likely rate of assimilation would be from 30 to 40 aircraft per year, leading to a 1974 force of about 225 MIG-21s, 200 MIG-17s, and 60 IL-28s.

Since all-weather MIG-21s are equipped with two air-to-air missiles and no fixed cannon, replacement of MIG-15s and 17s with this aircraft reduces the strafing threat to ROK airbases and other ground targets. MIGs have a relatively small bomb-carrying capacity, (under 1000# for MIG-15/17s, and under

* Currently augmented by a temporary deployment of 151 USAF aircraft.
** During the Korean War, early model F-86s and MIG-15s were, respectively, the most advanced fighters employed by the UN and Communist sides.

~~SECRET~~

~~SECRET~~

2000# for the MIG-21), and the NKAF's primary offensive weapon is likely to remain the obsolescent IL-28 BEAGLE bomber, which has limited survivability in a hostile air environment. Peacetime attrition is expected to reduce the current 80-aircraft IL-28 force to between 60 and 65 by 1974.

One difficulty encountered in projecting the 1974 NKAF is the likelihood that the USSR's willingness to provide additional aircraft is sensitive to what the US does to build-up the ROKAF. In this light, provision of a squadron of eighteen F-4Ds to the ROKAF (commencing in August 1969) may prompt the Soviets to bolster the NKAF's strike capability. They might do this by providing the North with 25-50 SU-7 FITTERS (an aircraft designed primarily for ground attack).

Intervention by the CPR could add as many as 1000 MIGs and 150 IL-28s to the Communist air threat. However, a force this large would tax and congest North Korea's airbase facilities and not all could be forward-based. Moreover, current intelligence estimates indicate CPR involvement is very unlikely.

1.2 Alternative ROKAF Forces

The five alternative FY 74 ROKAF forces presented in this chapter offer a spectrum of capabilities and costs ranging upward from the present MAP plan to a force reaching numerical parity with that now projected for the 1974 NKAF. The latter, Alternative D, costing an estimated \$1.54 billion and straining the ROKAF's ability to expand, would be likely to relax the necessity for US air intervention to counter an all-out attack by the North Koreans acting alone. Under all of the ROKAF alternatives, active air intervention by the CHICOMs would continue to demand massive US air assistance to assure the conventional defense of the South. *

In general, we have considered the following approaches toward improving the ROKAF: (1) Implementation of the "Tactical Squadron Enhancement Program"; an organizational change which would increase the number of assigned aircraft in a modernized squadron from 18 to 24; (2) Replacement of aging F-86F tactical strike (no all-weather capability) and F-86D air defense aircraft with greater numbers of more modern types: F-5s, F-4Ds, F-102s or, alternatively, F-5-21s if they are produced; (3) Provision of A-37 and AC-119 aircraft to enhance the ROKAF's capability to conduct counter-insurgency operations; and (4) Expansion of the ROKAF's airlift, anti-submarine warfare, and tactical air control capabilities.

A summary of ROKAF structures and costs under each alternative is presented in Table 1-1 on the next page. Specific aircraft compositions are shown in Table 2-2 on page 192; costs are summarized in detail in Table 6-3, page 254; and a more thorough discussion of the rationale underlying each alternative appears in Section 2. Briefly, the alternative ROKAF forces are:

Alternative A: The present Joint Staff Operating Plan (JSOP) for FY 70-74.

* The effect each ROKAF alternative force is likely to have on the entry point of US air is discussed in Section 7 of this Chapter.

~~SECRET~~

~~SECRET~~

TABLE 1-1

SUMMARY OF ALTERNATIVE FY 74 ROKAF FORCE STRUCTURE

<u>STRUCTURE</u>	<u>ALT A (JSOP)</u>	<u>ALT B</u>	<u>ALT C</u>	<u>ALT D</u>	<u>ALT E (MAP 74)</u>
<u>Aircraft</u>					
Tactical Strike	126	192	168	288	158 (50) ^{1/}
Air Defense	54	48	42	96	50 (32) ^{1/}
Special Operations	25	61	91	61	20 (20) ^{1/}
Airlift	32	68	52	68	43 (16) ^{1/}
Other ^{2/}	<u>82</u>	<u>163</u>	<u>163</u>	<u>163</u>	<u>17</u>
TOTAL AIRCRAFT	319	532	516	676	288(100) ^{1/}
<u>Airbases</u>					
New main operating bases(MOBs)	3	2	1	4	0
New dispersal bases (DOBs)	0	2	2	2	0
Existing fields upgraded to MOB	0	2	2	2	0
TOTAL JET-OPERATIONAL AIRBASES ^{3/}	9	12	11	14	6
<u>Point Defense Guns</u>					
(Twin 40mm/Quad .50 Cal) ^{4/}	0/0	240/120	224/112	272/136	0/0
<u>New Aircraft Hardening ^{5/}</u>					
(Shelters/Revetments)	222/0	312/112	342/96	528/122	226/0
<u>Over the Horizon Radar</u>					
	-	-	-	X	-
<u>Semiautomatic AC&W System</u>					
	-	-	-	X	-
<u>COSTS (Million \$ US) ^{6/}</u>					
MAP	293.4	534.7	430.5	871.3	197.0
US Military Department	<u>218.3</u>	<u>219.1</u>	<u>167.6</u>	<u>359.5</u>	<u>59.5</u>
Subtotal: US Costs	511.7	753.8	598.1	1230.8	256.5
ROK Budget	<u>217.4</u>	<u>273.6</u>	<u>258.9</u>	<u>310.6</u>	<u>141.0</u>
TOTAL US & ROK COSTS	<u>729.1</u>	<u>1027.4</u>	<u>857.0</u>	<u>1541.4</u>	<u>397.5</u>

^{1/} Aircraft retained from present force (other than F-5s).

^{2/} Reconnaissance, ASW, training, rescue, utility, etc.

^{3/} Includes six existing MOBs.

^{4/} Sixteen M-42s and eight M-55s at each airbase; four M-42s and two M-55s at each AC&W site.

^{5/} Additional hardening for POL and munitions storage also proposed.

^{6/} Without F-5-21 option; includes \$51.1 FY 69 investment for initial F-4D sqdn.

~~SECRET~~

~~SECRET~~

Alternative B: The maximum ROKAF strength attainable by FY 74 consistent with previous rates of personnel expansion. This force would still be inferior to the maximum 1974 NKAF inventory (against lesser NKAF 1974 strengths it could approach equality). A force of this size could be achieved with minimal dislocation and without significant sacrifice of operating effectiveness during the build-up phase.

Alternative C: A lower cost variation of Alternative B placing greater emphasis on Special Operations capability (ground attack against insurgents, or in an otherwise permissive air environment) and less on air-superiority. This force contains fewer high-performance fighters than does Alternative B. The judgment on ROKAF-NKAF relative capabilities in B above also applies here.

Alternative D: A force approximately equal in strength to that now projected for the maximum 1974 NKAF. Achievement of a force this size within the next five years implies a greatly accelerated ROKAF expansion rate, and considerable interim degradation in effectiveness.

Alternative E: The present Military Assistance Program (MAP) for FY 70-74.

1.3 US Air Augmentation

An important factor in evaluating the feasibility of alternative ROKAF forces is the effect each has on the requirement for US air assistance. Given the present ROKAF air strength, 612 to 1,689 US augmentation aircraft could be needed depending on the scale of conflict. By building up the ROKAF we can raise the entry point where US air is needed, and reduce the magnitude of any assistance that is required, particularly if North Korea is the sole aggressor. The manner in which alternative ROKAF force might affect the need for US intervention, assuming our response is defensive or designed to deter and does not escalate hostilities, is shown in the next table. If the Chinese intervene on behalf of the North Koreans, a large US air participation would remain essential to assure successful defense of the South regardless of which ROKAF alternative is implemented.

~~SECRET~~

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

	<u>WITHOUT F-5-21 FOLLOW-ON OPTION</u> ^{2/}						<u>WITH F-5-21 FOLLOW-ON OPTION</u> ^{3/}					
	<u>FY 70</u>	<u>FY 71</u>	<u>FY 72</u>	<u>FY 73</u>	<u>FY 74</u>	<u>FY 70-74</u> ^{1/} <u>Period</u>	<u>FY 70</u>	<u>FY 71</u>	<u>FY 72</u>	<u>FY 73</u>	<u>FY 74</u>	<u>FY 70-74</u> ^{1/} <u>Period</u>
<u>ALTERNATIVE A (JSOP)</u>												
US MAP	30.7	40.9	63.5	53.2	53.9	242.3	32.5	54.6	95.6	78.7	72.1	313.5
ROK	<u>24.2</u>	<u>37.2</u>	<u>54.8</u>	<u>52.2</u>	<u>49.0</u>	<u>217.4</u>	<u>24.1</u>	<u>36.2</u>	<u>52.3</u>	<u>50.3</u>	<u>47.7</u>	<u>210.6</u>
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
<u>ALTERNATIVE B</u>												
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	<u>25.4</u>	<u>45.6</u>	<u>74.5</u>	<u>67.9</u>	<u>60.2</u>	<u>273.6</u>	<u>25.5</u>	<u>45.9</u>	<u>75.3</u>	<u>68.5</u>	<u>60.6</u>	<u>275.8</u>
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
<u>ALTERNATIVE C</u>												
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	<u>25.1</u>	<u>43.4</u>	<u>69.4</u>	<u>63.7</u>	<u>57.3</u>	<u>258.9</u>	<u>25.1</u>	<u>43.3</u>	<u>69.3</u>	<u>63.6</u>	<u>57.2</u>	<u>258.5</u>
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
<u>ALTERNATIVE D</u>												
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	<u>26.1</u>	<u>51.1</u>	<u>87.5</u>	<u>78.3</u>	<u>67.6</u>	<u>310.6</u>	<u>26.0</u>	<u>50.7</u>	<u>86.7</u>	<u>77.7</u>	<u>67.2</u>	<u>308.3</u>
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
<u>ALTERNATIVE E (MAP 74)</u>												
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	<u>22.7</u>	<u>25.7</u>	<u>28.1</u>	<u>30.8</u>	<u>33.7</u>	<u>141.0</u>	<u>22.6</u>	<u>25.0</u>	<u>26.5</u>	<u>29.5</u>	<u>32.8</u>	<u>136.4</u>
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

1/ Does not include \$51.1 million FY 69 investment costs for initial F-4D squadron.

2/ Cost distribution assumptions for Alternatives A-E: 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.

3/ Cost distribution assumptions 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.

~~SECRET~~

TABLE 1-3

USAF AUGMENTATION THRESHOLD^{1/}

<u>SCENARIO</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	-- ^{2/}	X	-- ^{2/}	XX
6. All-out conflict involving North Korea alone.	XX	X	X	-- ^{2/}	XX
7. All-out conflict involving North Korea and China.	XX	XX	XX	XX	XX

KEY: X: US air augmentation would probably be required; XX: US air augmentation would almost certainly be required.

- ^{1/} 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.
- ^{2/} This judgment assumes that ROK airbases are adequately hardened and defended by AA weapons.

We may wish to continue maintaining a number of US aircraft forward deployed in Korea to reassure the ROKs of our commitment to their defense. Four such alternative USAF postures are presented below, with general support personnel differentiated from those directly tied to the operation and support of deployed aircraft. MAAG strength is discussed in Chapter II.

Alternative I (Current Presence): The 151 aircraft now based in Korea (5960 personnel costing \$19.6 million per year more in Korea than in CONUS) would be maintained through FY71 and reduced to 36 aircraft in FY72 (about 1600 personnel at \$5.3 million per year over CONUS). General support forces remain constant at the pre-1968 level of about 4100 (\$13.5 million per year). Total FY70-74 cost over CONUS for Alternative I is \$122.6 million.

Alternative II (Minimal Presence): Some US aircraft are maintained throughout the FY70-74 period. This Alternative postulates the same 36 aircraft force as Alternative I during FY72-74; however, the current deployment would be reduced to 48 aircraft immediately (rather than continued at 151) at a savings of \$25.4 million. General support personnel are again maintained at the pre-1968 level. Total period cost would be \$97.2 million.

~~SECRET~~

~~SECRET~~

Alternative III (Gradual Phase-out): US presence would be reduced to 101 aircraft in FY70, 48 in FY71, 36 in FY72, and withdrawn entirely in FY73. If support forces remain constant, this alternative would cost \$92.9 million: Reduction by 20% in FY72, 40% in FY73, and 20% in FY74 would save \$21.6 million in general support costs.

Alternative IV (Rapid Phase-out): The present USAF deployment would be reduced to 48 aircraft immediately and phase-out altogether in FY71. Twenty percent of general support personnel would be withdrawn in FY70, 40% in FY71, and 20% in FY72. Overall costs of Alternative IV would be \$31.2 million.

Annual costs and strengths for each deployment schedule are shown in table 1-4 on page 185, and discussed more fully in Section 7.

1.4 Air Defense

In the Korean environment, where proximity yields short flying times and mountainous terrain impedes low altitude radar coverage, warning times at the northern ROK airbases are likely to be less than five minutes if the North Koreans launch a surprise attack. Improvements to the existing ROK ACSW system, stressing better communications and low altitude radar coverage, could expand the expected warning time by a few minutes, but the constraints of geography and topography remain largely fixed. "Active" air defenses employing aircraft or missiles to intercept penetrators prior to target arrival are generally unsatisfactory under these conditions since they require ample warning to react. This suggests that "passive" measures (hardening, dispersal, camouflage) and terminal point defenses, both of which can react quickly, are vital to protect ground targets especially against an initial pre-emptive strike.

The 40mm and .50 caliber guns, because they are effective, easy to maintain and operate, inexpensive, and readily available from current assets, appear best-suited to the point air defense role in Korea. Present WW II ROKA air defense guns are inadequate in number, and the three new force structures (Alts B, C, and D) incorporate additional later-vintage weapons of this type. Although neither JSOP nor the MAP plan now includes additional air defense artillery, such weapons should also be considered for these alternatives.

The PUEBLO crisis gave considerable impetus to aircraft sheltering efforts at ROKAF airbases (170 are under construction and scheduled for completion by October); however, further hardening is needed to assure adequate protection for both the ROKAF and any US air augmentation that might be needed to cope with a major conflict.

Annual costs for these systems are included in the land forces modernization packages of Chapter II and discussed in Section 4 below.

ALTERNATIVE USAF KOREA AIR DEPLOYMENTS
(Millions of \$US at 1968 Prices)

	<u>FY 70</u>		<u>FY 71</u>		<u>FY 72</u>		<u>FY 73</u>		<u>FY 74</u>		<u>Cost For</u> <u>FY 70-74 Period</u>
	<u>Strength</u>	<u>Cost</u>	<u>Strength</u>	<u>Cost</u>	<u>Strength</u>	<u>Cost</u>	<u>Strength</u>	<u>Cost</u>	<u>Strength</u>	<u>Cost</u>	
Alternative I: Present											
(Present 151 acft US deployment thru FY 71, 36 acft thereafter; support forces constant at pre-1968 level)											
Temporary Deployment ^{2/}	5959	19.6	5959	19.6	1600	5.3	1600	5.3	1600	5.3	55.4
Support Forces	4095	13.5	4095	13.5	4095	13.5	4095	13.5	4095	13.5	67.5
MAAG (USAF)	174	0.6	174	0.6	174	0.6	174	0.6	174	0.6	3.0
Total	10228	33.7	10228	33.7	5869	19.4	5869	19.4	5869	19.4	125.6
Alternative II: Minimal Presence											
(48 acft thru FY 71, 36 acft thereafter; support forces constant at pre-1968 level)											
Temporary Deployment ^{2/}	2100	6.9	2100	6.9	1600	5.3	1600	5.3	1600	5.3	29.7
Support Forces	4095	13.5	4095	13.5	4095	13.5	4095	13.5	4095	13.5	67.5
MAAG (USAF)	174	0.6	174	0.6	174	0.6	174	0.6	174	0.6	3.0
Total	6369	21.0	6369	21.0	5869	19.4	5869	19.4	5869	19.4	100.2
Alternative III: Gradual Phase-out											
(101 acft in FY 70, 48 acft in FY 71, 36 acft in FY 72, 0 acft thereafter)											
A. (Support forces constant at pre-1968 level)											
Temporary Deployment ^{2/}	4000	13.2	2100	6.9	1600	5.3	--	--	--	--	25.4
Support Forces	4095	13.5	4095	13.5	4095	13.5	4095	13.5	4095	13.5	67.5
MAAG (USAF)	174	0.6	174	0.6	174	0.6	174	0.6	174	0.6	3.0
Total	8369	27.3	6369	21.0	5869	19.4	4269	14.1	4269	14.1	95.9
B. (Support forces at pre-1968 level thru FY 71, reduced 20% in FY 72, 40% in FY 73, 20% in FY 74)											
Temporary Deployment ^{2/}	4000	13.2	2100	6.9	1600	5.3	--	--	--	--	25.4
Support Forces	4095	13.5	4095	13.5	3276	10.8	1638	5.4	819	2.7	45.9
MAAG (USAF)	174	0.6	174	0.6	174	0.6	174	0.6	174	0.6	3.0
Total	8369	27.3	6369	21.0	6650	16.7	1812	6.0	993	3.3	74.3
Alternative IV: Rapid Phase-out											
(48 acft in FY 70, 0 acft thereafter; support forces reduced 20% in FY 70, 40% in FY 71, 20% in FY 72)											
Temporary Deployment ^{2/}	2100	6.9	--	--	--	--	--	--	--	--	6.9
Support Forces	3276	10.8	1638	5.4	819	2.7	819	2.7	819	2.7	24.3
MAAG (USAF)	174	0.6	174	0.6	174	0.6	174	0.6	174	0.6	3.0
Total	5550	18.3	1812	6.0	993	3.3	993	3.3	993	3.3	34.2

^{1/} Net costs over CONUS; USAF average of \$3,300 per man-year.

^{2/} Includes all personnel necessary to support deployment.

~~SECRET~~

1.5 Airbases and Construction

A pressing deficiency in the present ROKAF structure is the lack of airbase facilities. There are only six jet-operational airfields in South Korea, and five fields that are marginally capable of accommodating jets. As yet, none of these facilities can be considered "hardened" or well defended against air attack, and three of the main bases are particularly vulnerable because of their proximity to NKAF bases. A US air augmentation deployed in response to major hostilities would further congest the present ROK airbase system as evidenced by the "wing-tip" to "wing-tip" conditions which prevailed when 180 aircraft were deployed during the PUEBLO crisis. The present program includes \$41.6 million for construction, basic improvements to present bases, and facilities proposed by COMUSKOREA. Additional airbase construction and hardening bear consideration for several reasons: (1) to accommodate an increase in the ROKAF; (2) to reduce reliance on Japanese bases in event of a large USAF deployment to reinforce Korea; and (3) to facilitate a possible continued air presence in Korea.

With respect to the construction programs indicated in table 1-5, the first -- JSOP -- includes three new MOBs (at \$53 million each) and improvements to existing ALOC airfields (\$8.2 million). The second program includes improvement of two existing bases to MOB standards, and construction of two dispersal bases (for use by USAF augmentation aircraft). ALOC improvements, 150% sheltering for all in-country tactical jets, full reveting for other aircraft, and adequate hardened POL storage to support a large US air augmentation would cost another \$23.7 million. Thus, Alternative B costs about \$5.6 million less than JSOP even though it provides three more fully jet-capable airfields, by emphasizing improvements to existing bases and construction of dispersal bases rather than focusing on new MOBs. Alternative C and its subcase are essentially the same except that only one or no MOB would be constructed in each, respectively.

1.6 Costs

Cost estimates accompany the alternative forces at each phase of their development throughout the Chapter. Overall FY 70-74 costs to the US range from \$205 million for the present MAP (Alt E) to about \$1.13 billion to achieve full parity with the maximum 1974 NKAF (Alt D); ROK budget costs, allowing for 54% appreciation in personnel costs but not for inflation, are estimated at \$141 million and \$311 million for the two extremes respectively. Annual MAP and ROK budget costs, with and without the F-5-21 follow-on option, are shown in table 1-2 on page 182. A full cost summary, including US military department costs incurred largely for airbase construction, appears in Section 6.

~~SECRET~~

~~SECRET~~

TABLE 1-5

FY70-74 AIRBASE CONSTRUCTION WITH ALTERNATIVE ROKAF FORCES
(In 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>
<u>New Facilities</u>					
Main Operating Bases (Number of MOBs)	159.0 (3)	106.0 (2)	53.0 (1)	212.0 (4)	-- (0)
Dispersal Bases (Number of DOBs)	-- (0)	25.6 (2)	25.6 (2)	25.6 (2)	--- (0)
Subtotal: New Bases	159.0	131.6	78.6	247.6	---
<u>Improvements to Existing Facilities</u>					
COMUSKOREA Package ^{1/}	41.6	41.6	41.6	41.6	41.6
Upgrade to MOB Standards	--	15.3	15.3	15.3	--
ALOC Facilities	<u>8.2</u>	<u>8.2</u>	<u>8.2</u>	<u>8.2</u>	---
Subtotal: Improvements	49.8	65.1	65.1	65.1	41.6
<u>Additional Hardening</u>					
Aircraft ^{2/}	8.3	12.5	13.5	20.6	8.4
POL Storage ^{2/}	<u>10.8</u>	<u>11.2</u>	<u>11.2</u>	<u>12.7</u>	<u>9.9</u>
Subtotal: Hardening	19.1	23.7	24.7	33.3	18.3
Total US Mil Dept Costs	227.9	220.4	168.4	346.0	59.9
MAP Costs	--	<u>1.9</u>	<u>1.7</u>	<u>5.9</u>	<u>0.6</u>
Total US Costs	<u>227.9</u>	<u>222.3</u>	<u>170.1</u>	<u>351.9</u>	<u>60.5</u>

- ^{1/} Various Basic Improvements including (in millions): community facilities, \$10.7; paving, \$9.3; maintenance facilities, \$7.0; operations facilities, \$4.5.
- ^{2/} Not included in present JSOP or MAP.

~~SECRET~~

~~SECRET~~

SECTION 2: ALTERNATIVE ROKAF FORCE STRUCTURE FOR FY 1974

2.1 General and Objectives

The Alternative ROKAF structures developed here (Alternatives B, C and D) represent increases in mission capability and cost over both the present Military Assistance Program (Alt E), and the Joint Staff Operations Plan (Alt A). The new alternatives were postulated with the following objectives in mind: (1) Reduce the present and projected disparity between NKAF and ROKAF aircraft strengths by building on the existing ROKAF with a minimum of dislocation and interim loss of effectiveness during the build-up phase. (2) Reduce the variety of tactical aircraft types, and standardize equipment with USAF and other regional air forces to contain logistical, maintenance and training difficulties; seek reliable, low cost, low maintenance equipment with a minimum of technical complexity. (3) Emphasize development of a broad base for long-range growth while increasing the diversity of mission capability.

All of the alternatives represent some improvement of the ROKAF. The degree of improvement ranges from the relatively modest modernization contemplated in the current MAP (Alt E), upward to a force of approximate numerical and qualitative parity with the maximum 1974 NKAF (Alt D). Alternatives B and C are intermediate options, sufficient to achieve parity with a lesser NKAF 1974 threat. Alternative B contains a greater number of high performance aircraft (F-4s and F-5s) and is considerably more expensive. Alternative C places greater emphasis on Special Operations using A-37 aircraft; both alternatives place equal emphasis on mission diversification.

Aircraft types previously recommended for Korea in JCS documents are incorporated in each alternative, although some question remains with regard to the suitability of the F-102 for the Korean Environment.* All of these aircraft would be available for delivery to the Republic of Korea during the program period FY 70-74.

* The F-102 was designed as an all-weather interceptor (to be used against bombers) rather than for the air superiority or ground attack roles.

~~SECRET~~

~~SECRET~~

Consideration has also directed toward the possible incorporation of a new aircraft type, the F-5-21, as a follow-on replacement for ROKAF F-5s, F-102s, or F-86s. A decision to produce the F-5-21 in the US has not been reached at this time (although Canadian production is scheduled) and is contingent upon the F-5-21's application in areas other than Korea alone. Although the F-5-21 seems a promising follow-on candidate for Korea because of its performance, similarity and compatibility with current ROKAF F-5s, and is the only replacement aircraft specifically addressed in this study, this should not be construed as an exclusive endorsement of the F-5-21 for either ROKAF or world-wide MAP application. The question of a follow-on aircraft for MAP countries goes beyond just Korea and remains open.

2.2 Summary Alternative Force Postures

Alternative A: JSOP provides for the gradual phase-out of F-86 aircraft. Two of the current F-86D air defense squadrons would be replaced with F-102s; previously programmed F-4D aircraft would comprise an additional air defense-tactical squadron. These plans also include seven F-5A/B tactical squadrons, one Special Air Warfare Squadron, one anti-submarine squadron of eight aircraft, and an improved ROKAF airlift capability. The MAP Budget Cost of Alternative A for the FY 70-74 period would be approximately \$241.0 million for new aircraft investment and operation*. Accompanying ROKAF aircraft operation and force maintenance would be approximately \$185.5 million (US equivalent).

While this alternative includes only nominal increase in personnel force requirements, it also implies a measurable increase in the weighted ROKAF tactical maintenance index (to 258.4 in comparison with a current index of 247.0 for the FY 1969 ROKAF)** reflecting the greater demand for technical support.

Alternative B: This is the maximum ROKAF force consistent with past growth rates and represents an enlarged and further modernized inventory of 240 tactical fighters (qualitatively equal to the MIG-21 but fewer in number than the maximum 1974 NKAF force) given additional basing facilities and aircraft sheltering.*** Alternative B reflects a ROKAF personnel increase of 4.5 percent annually, which is consistent with previous ROKAF experience (4.2 percent annually). The technical demand of Alternative B is reflected in the high maintenance index of 355.7, which is nearly half again the present index level.

* Cost does not include \$51.1 million for the previously programmed (FY 1969 MAP) squadron of F-4Ds. Costs include related MAP supply operations costs during the period in which the weapon is programmed rather than delivered.

** The weighted ROKAF maintenance index is discussed on page 2.

*** DIA projects 375 MIG-21 aircraft for the NKAF by end of FY 1974.

~~SECRET~~

~~SECRET~~

The high technical demands for the Alternative B force structure are occasioned largely by the addition of a second squadron of F-4Ds and only secondarily through the additional F-5 aircraft in each squadron (In Alternatives B, C and D, the size of the ROKAF tactical squadron is increased from 18 UE to 24 UE.) For the C-123s suggested in the current JSOP for airlift support, Alternative B substitutes four squadrons of C-119 aircraft. Half of these would be the C-119K version to permit their use on short ALOC airfields and in the gunship role. The Special Operations Squadron would also provide the ROKAF with a considerably stronger capability in the lower spectrum of limited war and against NK infiltration or guerrilla activities. Alternative B would involve a US MAP Budget cost during the FY 1970-74 period of \$443.2 million for aircraft investment and operations.* Related ROKAF force maintenance costs would be about \$213.7 million (US equivalent).

In terms of personnel growth and technical demands, Alternative B represents the largest of the alternative force structures for FY 1974 that can be readily achieved without appreciable mission degradation to the ROKAF during the FY 1970-74 force-building period.

Alternative C: This alternative places more emphasis on close air support and is less expensive than Alternative B. Two additional squadrons (twenty-five aircraft each) of A-37 aircraft have been substituted for one squadron of F-5s at a lower overall cost. While this light aircraft is not designed for air-to-air engagement; however, there is a wide range of CAS missions in Korea for which the A-37 aircraft is expected to be very cost-effective. Alternative C also includes one 24 UE F-102 squadron and an 18 UE F-4 squadron. A total of 210 tactical aircraft would be provided under this alternative.

Alternative C entails a personnel growth of 3.55 percent annually. The technical skills demanded for this force (index of 234.5) do not present the imposing requirement described for Alternative B. The estimated US MAP Budget cost of Alternative C is \$342.1 million for aircraft investment and force maintenance. The estimated cost to the ROKAF Budget for aircraft support is \$204.3 million (US equivalent).

Alternative D: This structure shows the effect of approaching parity with the maximum projected NKAF FY 1974 force posture. The Alternative E force would require a doubling of the present plan for ROKAF tactical aircraft to a total of 16 24-UE tactical squadrons with 384 aircraft.

* Costs do not include \$51.1 million for the previously programmed (FY 1969 MAP) squadron of F-4Ds; related MAP Supply Operations costs estimated for the period in which the weapon is programmed rather than delivered.

~~SECRET~~

~~SECRET~~

The ROKAF would be required to more than double its previous rate of personnel growth to over 9.9 percent annually. The technical index for Alternative D (491.9) would be nearly double the present ROKAF technical skill index. In terms of growth and technical skill demands, Alternative D would involve a considerable degradation in ROKAF effectiveness during the FY 1970-74 build-up period, even with the extensive use of CONUS training. Increases in the ROKAF posture beyond that contemplated in Alternative D do not appear practical within the program years. The US MAP Budget cost for Alternative D would amount to \$720.4 million during the FY 1970-74 period and the operating costs to the ROKAF for aircraft and force maintenance would be \$243.8 million.*

Alternative E: The MAP 74 present program force is about the same numerically as Alternative A in regard to tactical fighter aircraft. However, in the support areas (airlift, counter-insurgency, and training) virtually no forces are provided. US MAP aircraft investment and operating costs from FY 70 to FY 74 are estimated at \$145.9 million, while ROKAF aircraft operating costs will be about \$111.6 million.*

A summary of the alternative force structures appears in Table 2-2, next page. The primary and secondary missions of the various aircraft types are indicated below:

TABLE 2-1

AIRCRAFT MISSION CAPABILITY

<u>Type Aircraft</u>	<u>Primary Mission</u>	<u>Secondary Mission</u>
F-5A/B, F-4D(or F-5-21)	Tactical Fighter	Air Defense/Training
F-102	Air Defense	None
RF-5	Reconnaissance	None
S-2D	Patrol(ASW) Recon	Transport/Special Operations
A-37	Ground Attack	Special Operations
T-28	Special Operations	Strike/Forward Air Control
AC-119K (Gunship)	Special Operations	Flare Support/Recon
C-119, C-123, C-54	Airlift	None
O-1E/F	Forward Control (FAC)	Recon/Special Operations
CH-3	Tactical Air Control	Airlift
T-38	Training	None
O-1A	Training	FAC/Special Operations
UH-1	Rescue/Special Operations	Search/Airlift
U-17/U-9	Utility	Special Operations/FAC/ Airlift/Training
HH-43	Rescue	None

* Cost does not include \$51.1 million for the previously programmed (FY 1969 MAP) squadron of F-4Ds. Costs include related MAP Supply Operations costs during the period in which the weapon is programmed rather than delivered.

~~SECRET~~

~~SECRET~~

TABLE 2-2

FY 74 AIRCRAFT COMPOSITION OF ALTERNATIVE ROKAF FORCES

<u>Type of Force/Aircraft</u>	<u>Alt A(JSOP) Sq/Acft</u>	<u>Alt B Sq/Acft</u>	<u>Alt C Sq/Acft</u>	<u>Alt D Sq/Acft</u>	<u>Alt E (MAP) Sq/Acft</u>
<u>Tactical Forces:</u>					
F-86F	0/0	0/0	0/0	0/0	2/50
F-5A/B <u>1/</u>	7/126	8/192	7/168	12/288	6/109
RF-5 <u>2/</u>	1/8	1/8	1/8	1/8	1/8
A-37	1/25	1/25	3/75	1/25	0/0
T-28 (Special Operations) <u>4/</u>	0/0	1/20	0/0	1/20	1/20
AC-119K " "	0/0	1/16	1/16	1/16	0/0
Composite " "	1/34 <u>5/</u>	1/24 <u>6/</u>	1/24 <u>6/</u>	1/24 <u>6/</u>	0/0
<u>Air Defense:</u>					
F-86D	0/0	0/0	0/0	0/0	2/32 <u>2/</u>
F-102	2/36 <u>2/</u>	0/0	1/24 <u>2/</u>	0/0	0/0
F-4D	1/18	2/48 <u>3/</u>	1/18 <u>2/</u>	4/96 <u>3/</u>	1/18
<u>Airlift:</u>					
C-119	0/0	4/64	3/48	4/64	1/27
C-123	2/32	0/0	0/0	0/0	0/0
C-54	0/0	1/4	1/4	1/4	0/0
C-46	0/0	0/0	0/0	0/0	1/16
<u>Miscellaneous:</u>					
S-2D (ASW)	1/8	1/8	1/8	1/8	0/0
O-1E/F (Tac Air spt sqdns)	0/0	1/36	1/36	1/36	0/0
CH-3 (Tac air control sqdn)	0/0	1/10	1/10	1/10	0/0
U-17/U-9 <u>7/</u>	0/0	1/25	1/25	1/25	0/0
O-1A (Training)	0/0	1/14	1/14	1/14	0/0
T-38/F-5B (Training)	1/20	1/20	1/20	1/30	0/0
UH-1 (Helo Sqdn)	1/12	1/12	1/12	1/12	1/9
HJ-43B (rescue)	0/0	1/6	1/6	1/6	0/0

F-5-21 Option

- 1/ Substitute F-5-21 (if produced) for excess over 85 acft.
- 2/ Substitute F-5-21 (if produced).
- 3/ Substitute F-5-21 (if produced) for excess over 18 acft.
- 4/ Utilized also in a training role as required.
- 5/ Includes O-1E, A-26 and C-123.
- 6/ Includes 8 each C-119, UH-1, and U-10.
- 7/ Non-MAP supported.

~~SECRET~~

~~SECRET~~

2.3 Discussion of Alternative Force Structures

Capability: It is difficult to encapsule the relative capabilities of different aircraft types in a few paragraphs or tables - the variables involved are too numerous and complex. Different aircraft are designed to excel in certain types of missions (such as ground attack, air superiority, interception) and necessarily perform less well in others. Some of the performance parameters that may be cited can be misleading since there is a tendency to use them simplistically to "grade" hardware. For example, the 1,150 knots maximum velocity of the MIG-21 does not make that aircraft 1.43 times as effective in air-to-air combat as is an F-5 having a top speed of only 805 knots. Speed is not the only consideration, and in any event either aircraft would quickly use up its fuel supply at supersonic speeds and must therefore employ these speeds sparingly. More important are factors such as the aircraft's armament, fire control system, visibility, energy maneuverability, and particularly the aircrew's proficiency. A more thorough discussion of the relative merits of various US and Communist aircraft types appears in Annex III, Appendix E.

With the above caveats in mind, a rough indication of the capabilities of a particular aircraft can still be expressed in terms of its payload/range, armament and speed. These factors are displayed in Table 2-3 on the following page. On the basis of the range data indicated, most ROKAF and NKAF aircraft can reach targets throughout the peninsula. As indicated, MIG bomb-carrying capability is limited and less than that of ROKAF aircraft, particularly the newer types (F-5, F-4, A-37). The primary offensive aircraft now in the NKAF inventory is the obsolescent and vulnerable IL-28 BEAGLE. By replacing existing MIG-15/17 aircraft with all-weather MIG-21s, the North Koreans actually diminish their offensive capability. Although the MIG-21 can carry heavier bombs, the version the NKAF has been receiving most recently is not equipped with a fixed cannon (they carry one 30mm gun or 2 air-to-air missiles on pylons), whereas the MIG-15/17s have two cannons with which to strafe ground targets.

Sortie Potential After Attack: Immediately preceding the January 1968 crisis, USAF and ROKAF aircraft were parked wing-to-wing and without sheltering at the major ROKAF airfields. Some estimates indicated that a surprise NKAF attack at that time could have destroyed up to 75% of the aircraft parked on the ground, and could have caused take-off limiting damage to the remaining parked aircraft.* Since this crisis period, 170 shelters and 200 additional revetments have been programmed for Korea. Against the present sheltering and revetment posture for the ROKAF airfields, a surprise NKAF attack is still

* These estimates were based on high sortie rates for NKAF aircraft. There is considerable uncertainty attached to estimates of the NKAF surge sortie rate because evidence on NKAF stand-down sortie gain is almost non-existent. Sustained sortie rate estimates also vary considerably, e. g., for the MIG-21 sustained sorties/day could average from .28 to .97.

~~SECRET~~

~~SECRET~~

TABLE 2-3

AIRCRAFT PERFORMANCE CHARACTERISTICS

	ROKAF					
	<u>F-86</u>	<u>F-5A</u>	<u>F-4D</u>	<u>F-102</u>	<u>A-37B</u>	<u>F-5-21</u>
Maximum Speed (knots at optimum altitude)	583	805	1,245	684	417	904
<u>Air Defense Mission</u> ^{2/}						
Armament						
Guns	4x.50 Cal	2x20mm	-- ^{5/}	--	N/A ^{1/}	2x20mm
Missiles	2 IR	2 IR	4 IR, 4 Radar	3 IR, 3 Radar	N/A	2 IR
Combat Radius (Nautical Miles)	300	350	478	400	N/A	780
<u>Ground Attack Mission</u> ^{3/}						
Armament						
Guns	4x.50 Cal	2x20mm	--	N/A ^{1/}	1x7.62mm	2x20mm
Bombs	2x500#	4x750#	12x750#	N/A	4x750#	4x750#
Combat Radius (Nautical Miles)	150	160	172	N/A	139	410
	NKAF					
	<u>MIG-15</u>	<u>MIG-17</u>	<u>MIG-21</u>	<u>IL-28</u>		
Maximum Speed (knots at optimum altitude)	585	590	1,150	429		
<u>Air Defense Mission</u> ^{2/}						
Armament						
Guns	2x23mm	2x30mm	1x30mm ^{6/}	N/A ^{1/}		
Missiles	2 IR	--	2 IR	N/A		
Combat Radius (Nautical Miles)	575	530	510	N/A		
<u>Ground Attack Mission</u> ^{3/}						
Armament						
Guns	2x23mm	2x30mm	--	2x23mm ^{4/}		
Bombs	2x485#	2x485#	2x945#	12x220#		
Combat Radius (Nautical Miles)	100	100	280	445		

- 1/ No capability to perform this mission.
 2/ Maximum range with external fuel.
 3/ Internal fuel only.
 4/ Tail guns primarily air-to-air defense.
 5/ Can substitute 2x20mm cannon on pylons for some missiles.
 6/ All weather version; other models carry 2x30mm fixed cannon.

~~SECRET~~

expected to exact 30% attrition at an expected loss of approximately 5% to the attacking NKAF force. With the complete combat aircraft sheltering program recommended by this study, approximately 90% of the ROKAF aircraft can be expected to survive an initial NKAF attack. A range of "residual forces" under varying rates of attrition is shown in Table 2-4 below:

TABLE 2-4

RESIDUAL FORCE AFTER ATTRITION^{1/}

<u>Alternative</u>	<u>30% Attrition</u>		<u>10% Attrition</u>		<u>5% Attrition</u>	
	<u>Acft</u>	<u>Sorties/Day</u>	<u>Acft</u>	<u>Sorties/Day</u>	<u>Acft</u>	<u>Sorties/Day</u>
Alt A (JSOP)	144	153	185	197	(Not expected	
Alt B	186	194	238	249	to be this	
Alt C	200	230	256	296	low for	
Alt D	286	288	368	331	defender	
Alt E (MAP 74)	146	154	187	198	force)	
NKAF	298	293	382	377	404	398

^{1/} All alternatives include the sortie capability of A-37s; T-38, AC-119s and T-28s excluded.

Technical Skill Demands: A technical maintenance index expressing required maintenance man-hours per month is one way to compare the technical skill demands for alternative air forces. This index is shown below for each alternative ROKAF structure.

	<u>ALT A</u> <u>(JSOP)</u>	<u>ALT B</u>	<u>ALT C</u>	<u>ALT D</u>	<u>ALT E</u> <u>(MAP 74)</u>
TMI (in thousands of man-hours/month).	258.4	355.7	324.5	491.9	247.0

Conversion of Present ROKAF Squadrons: The conversion and training tasks which would be required under alternative force structures are summarized in Table 2-5 on the next page.

Aircraft Investment and Operating Costs: The several alternative force structures presented by this study illustrate a range of cost requirements in addition to a spectrum of differing performance capabilities. The differences in costs among the several forces are not merely a product of the numbers of aircraft, but also of the relative costs among the alternative weapon systems involved. Listed below are the comparative US investment, operating and five years of 10-year systems costs for one squadron (UE of 18 aircraft) for the several combat aircraft considered for the ROKAF force structure.

~~SECRET~~

~~SECRET~~

TABLE 2-5

MAJOR MODERNIZATION/TRAINING TASKS FOR ALTERNATIVE BOKAY STRUCTURES (FY 70-76)

Alternative A (JCSOP)

1. Convert two F-86D air defense squadrons to F-101 aircraft.
2. Convert four F-86F tactical squadrons to F-1 aircraft; develop three new F-5 squadrons.
3. Develop one new F-4D squadron.
4. Convert RF-84 reconnaissance squadron to RF-5 aircraft.
5. Develop one new A-37 special air warfare squadron.
6. Convert two C-46 airlift squadrons to C-119 aircraft.
7. Increase ASW and counter-infiltration capabilities.

Alternative B

1. Reorganize tactical squadrons from 18 to 24 assigned aircraft.*
2. Convert two F-86D air defense squadrons to F-4D aircraft.
3. Convert four F-86F tactical squadrons to F-5 aircraft; develop four new F-5 squadrons.
4. Convert RF-84 squadrons to RF-1 aircraft.
5. Develop three new special air warfare squadrons - one with A-37, one with T-28 and one with AC-119K aircraft.
6. Convert two C-46 airlift squadrons to C-119 aircraft; develop two new C-119 squadrons.
7. Increase ASW and counter-infiltration capabilities.

Alternative C

1. Reorganize tactical squadrons from 18 to 24 assigned aircraft.*
2. Convert two F-86D air defense squadrons - one to F-4D and one to F-101 aircraft.
3. Convert four F-86F tactical squadrons to F-5 aircraft; develop three new F-5 squadrons.
4. Convert RF-84 reconnaissance squadron to RF-5 aircraft.
5. Develop four new special air warfare squadrons - three with A-37 and one with AC-119K aircraft.
6. Convert two C-46 airlift squadrons to C-119 aircraft; develop one new C-119 airlift squadron.
7. Increase ASW and counter-infiltration capabilities.

Alternative D

1. Reorganize tactical squadrons from 18 to 24 assigned aircraft.*
2. Convert two F-86D squadrons to F-4D aircraft; develop two new F-4D squadrons.
3. Convert four F-86F tactical squadrons to F-5 aircraft; develop eight new F-5 squadrons.
4. Convert RF-84 reconnaissance squadron to RF-5 aircraft.
5. Develop three new special air warfare squadrons - one with A-37, one with T-28 and one with AC-119K aircraft.
6. Convert two C-46 airlift squadrons to C-119 aircraft; develop two new C-119 squadrons.
7. Increase ASW and counter-infiltration capabilities.

Alternative E (MAP 76)

1. Develop one new F-4D air defense squadron.
2. Convert two F-86D air defense squadrons to F-5 aircraft; develop two new F-5 squadrons.
3. Convert RF-84 reconnaissance squadron to RF-5 aircraft.
4. Develop one new T-28 special air warfare squadron.
5. Convert one C-46 airlift squadron to C-119 aircraft.

~~SECRET~~

~~SECRET~~

TABLE 2-6

COMPARATIVE U.S. COSTS OF ALTERNATIVE ROKAF AIRCRAFT
(Thousand \$ US Per Squadron of 18 Aircraft)

<u>Aircraft</u>	<u>Investment</u>	<u>Annual Operating Cost</u>	<u>Five Years of Ten- Year Systems Cost</u>
F-86F	N/A	\$ 768.4	\$ 3,842.0
F-86D	N/A	790.8	3,954.0
F-5	\$20,975.0	1,248.3	16,727.5
F-5-21	33,215.6	1,491.5	24,061.3
A-37	8,120.0	452.6	6,323.0
F-102	7,291.3	1,201.3	9,652.2
F-4D	51,084.9	2,752.6	39,305.4

The relatively lower FY 1970-74 budget cost for Alternatives A and C are largely predicated on the lower investment price of the F-102 as the principal air defense weapon systems within these two alternatives. A-37s in the close air support role (Alternative C) could be provided and operated over a five-year period at approximately 38% of the cost of standard F-5s. For the close air support role, the current F-86F (operating cost only) does not possess any marked advantage over the new investment aircraft considered other than the F-4D. The summary of FY 1970-74 budget costs for the various force structures shown below include the expected ROKAF operating cost for each of the alternatives.

TABLE 2-7

FY 1970-1974 BUDGET COSTS FOR ALTERNATIVE ROKAF FORCES
(In Millions \$ US)

	<u>Alt A (JSGP)</u>	<u>ALT B</u>	<u>ALT C</u>	<u>ALT D</u>	<u>Alt E (MAP 74)</u>
MAP Investment	\$110.7	\$289.8	\$199.3	\$544.0	71.8
MAP Investment (FY 69: for F-4D)	51.1	51.1	51.1	51.1	51.1
MAP Operating Costs	<u>130.3</u>	<u>153.4</u>	<u>142.8</u>	<u>176.4</u>	<u>74.1</u>
Sub-Total US MAP Costs	292.1	494.3	393.2	771.5	197.0
ROKAF Operating Costs	<u>185.5</u>	<u>213.7</u>	<u>204.3</u>	<u>263.8</u>	<u>111.6</u>
Gross Budget Cost	477.6	708.0	597.5	1,015.3	308.6
(Net Budget Cost)	(\$426.5)	(\$656.9)	(\$546.4)	(\$964.2)	(\$257.5)

~~SECRET~~
197

~~SECRET~~

2.4 Application of F-5-21 Aircraft

Capability: If produced, the F-5-21 could be incorporated into any of the alternative ROKAF forces as a replacement for F-102s, F-86s or in lieu of undelivered F-5s and F-4Ds. The F-5-21 has performance advantages over each of these aircraft types except the F-4D, and would significantly enhance overall ROKAF capability by replacing them. A particular virtue of the F-5-21 for Korean application is its similarity to the F-5 which the ROKAF already has. This similarity would permit introduction of F-5-21s with only modest alterations in support infrastructure.

In addition to improved avionics, giving it an all-weather and night capability, the F-5-21 has improved performance characteristics over the F-5 as shown below:

TABLE 2-8

COMPARISON F-5 WITH IMPROVED F-5-21

	<u>MAP F-5A</u>	<u>F-5-21</u>	<u>Percent Improvement</u>
Max. T.O. Wt.	20575#	24140#	None
Max. T.O. Distance	7300 ft	5500 ft	25%
Rate of Climb	28,700 ft/min	35,200 ft/min	23%
Max. Speed	1.4 mach	1.6 mach	14%
Payload	6,200#	6,200#	None
Combat Radius	465 nm	780 nm	42%
Turn Radius at 5,000 ft	4,500 ft	2,750 ft	39%

An indication of the relative reliability and simplicity of the F-5 and the F-5-21 aircraft, as opposed to a more complex and sophisticated aircraft like the F-4 or F-102, can be seen in Table 2-9 below. These considerations are especially important in view of past maintenance difficulties experienced by the ROKAF.

TABLE 2-9

AIRCRAFT MAINTENANCE REQUIREMENTS

<u>Aircraft</u>	<u>ROKAF Maintenance Manhours per Flying Hour</u>
F-5 A/B	33
F-5-21	39
F-4D	56
F-86D	57
F-102	63

~~SECRET~~
198

~~SECRET~~

Application: If F-5-21s are produced, they could be substituted for F-102s (Alts A and C) or F-86Ds (Alt E) in the air defense role, considerably enhancing the ROKAF's capability in that area. Delivery of an initial squadron of F-4Ds to the ROKAF is scheduled to commence in August 1969. At this late date these aircraft are considered committed, for political reasons, and consequently ineligible for future replacement with F-5-21s. The F-5-21 could, however, replace additional air defense F-4Ds contemplated under Alternatives B and D. Availability of F-5-21s in FY 70 would also permit replacement of all undelivered F-5s in each alternative force (total F-5s in the force minus 85 aircraft assumed already delivered). Finally, RF-5-21s might be used to replace the eight RF-5s now programmed for the ROKAF reconnaissance role. The number of F-5-21s needed to achieve the innovations outlined above are:

TABLE 2-10

F-5-21 REPLACEMENT OPTION
(number of aircraft)

<u>PRIMARY MISSION</u>	<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>
Tactical	41	107	83	203	24
Reconnaissance	8	8	8	8	8
Air Defense	<u>36</u>	<u>30</u>	<u>24</u>	<u>78</u>	<u>32</u>
TOTAL	<u>85</u>	<u>145</u>	<u>115</u>	<u>289</u>	<u>64</u>

COSTS: The F-5-21 costs more than the F-5A but considerably less than the F-4D. As illustrated below, the ROKAF could obtain and operate almost two F-5-21 squadrons for the cost of one F-4 squadron. This does not reflect the other cost advantages of the F-5-21 over the F-4 such as lower training, maintenance and supply requirements.

~~SECRET~~