

**A STUDY ON RESERVE MOBILIZATION OF THE U.S. AND ISRAEL
: IMPLICATIONS TO IMPROVE READINESS AND RESPONSIVENESS OF
RESERVE FORCES**

By

Jong-Il Kim

THESIS

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

MASTER OF PUBLIC POLICY

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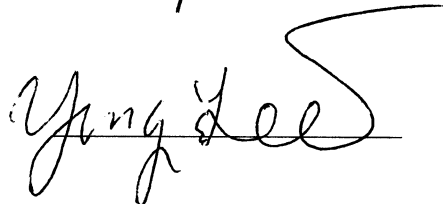
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Approval as of November , 2010

ABSTRACT

A STUDY ON RESERVE MOBILIZATION SYSTEM OF THE U. S. AND ISRAEL : IMPLICATIONS TO IMPROVE READINESS AND RESPONSIVENESS OF RESERVE FORCES

By

Jong-Il Kim

Contrast to the past negative cognition, these days, the reserve forces are regarded as relevant resources in the total force. Given strategic environment of South Korea, the readiness and responsiveness of reserve forces is significantly important to win modern warfare, so-called, Total War. Nevertheless, the South Korean reserve mobilization system doesn't seem to nurture reserve forces with high readiness and responsiveness. It seems that the South Korean reserve mobilization system has to be changed.

By analyzing the reserve mobilization system of two countries – Israel and the U.S. – which proved the effectiveness of their reserve mobilization system, this paper will provide implications for the South Korean Army. Surrounded by superior hostilities, Israel has highly relied on its reserve forces, which has been a sufficient human resource pool for the Israeli Defense Force (IDF). These Israeli reserve forces showed great effectiveness during the wars with the Arabs. Until the Vietnam War, the U.S. reserve forces had much inferior combat ability to that of the active forces. However, after the U.S. significantly improved its reserve forces, these forces showed great effectiveness during the Gulf War.

The cases of these countries proved that if the reserve mobilization system is properly established, the reserve forces can be effective source of military forces. In this sense, analyzing the reserve mobilization of these countries will provide an excellent case study for a country which is attempting to reform its reserve forces. As the South Korean Army tries to improve the effectiveness of reserve forces, some implications from these countries will contribute to these attempts.

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Dedicated to my beloved family, especially my wife, Hye-rim Ko

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ACRONYMS

ARC : Air Reserve Component

ARNG : Army National Guard

CS/CSS : Combat Support / Combat Service Support

DOD : Department of Defense (The United States)

IAF : Israel Air Force

IDF : Israel Defense Force

MND : Ministry of National Defense (South Korea)

ODS/S : Operation Dessert Shield / Storm

PSRC : Presidential Selected Reserve Call-up

SECDEF : Secretary of Defense (the U.S.)

SMCR : Selected Marine Corps Reserve

SORTS : Status of Resources and Training System

I. INTRODUCTION

1. Purpose of Study

After the cold war era, as the interaction between countries increased more frequently, the world seems to be in more peaceful mood. The development in the communication technology, such as the internet, broke the wall between countries, and increased their mutual understanding. In addition, economic cooperation between countries increased the interdependency among them. However, in the Korean Peninsula, the tension between South Korea and North Korea is still high. Although they signed the Armistice in 1953, South Korea (SK) and North Korea (NK) have not trusted each other. The South Korean government has tried to reconcile and built peaceful mood, however, the North Korean government didn't give up the ambition of a forceful unification. Also, four strong countries around the Korean peninsula - The United States, Russia, Japan, and China - have tried to extend their influence on the peninsula. Considering these conditions, self-defense ability is highly required to South Korea.

To build self-defense capabilities, bolstering deterrence is one of the best measurements. One of the essential elements to build deterrence is the preparedness of military power (Hwang, 2001). This preparedness is usually measured by preparedness of forces. Actually, forces can be divided into 2 parts – active forces and reserve forces. Historically, most countries regarded reserve forces as secondary and low-grade source for military forces. These days, as the major military powers recognized the effectiveness of reserve forces, they have adopted “total force” concept that regard their reserve forces as an effective human resource for military capabilities. Their policies treat reserve forces and regular forces as a harmonized structure, which has similar regulations, compensation, and training package (Weitz, 2007). They have tried to increase the readiness of reserve forces, and established rapid mobilization system. However, The Korean Army doesn't seem to accept this concept. A lot of problems in the responsiveness and readiness of South Korean reserve forces have shown in emergency as well as in the research works, however, the improvement seemed to be too slow. In this sense, case studies of countries, which accomplished great improvement in reserve mobilization, would be meaningful.

This paper will mainly analyze two countries - Israel and the United States. Surrounded

by much larger hostilities, Israel established a unique military system, which highly relies on reserve forces. Consisting more than 75% of the Israel Defense Force (IDF), Israeli reserve forces are famous for its readiness and effectiveness. As the reserve forces were main body of the IDF, Israel had developed an efficient reserve mobilization system for an immediate supply of disciplined civilian soldiers in an emergency. These reserve forces had showed great accomplishments in the Arab-Israeli Wars. Especially, the Israeli reserves greatly contributed to the brilliant victory of the Six Day War and the come-from-victory of the Yom Kippur War.

The case of the U.S. reserve forces is quite different. Previously, negative cognition about the reserve forces was prevalent among the U.S. military decision makers. However, after the U.S. army adopted the 'Total Force' concept, the readiness and effectiveness of reserve forces were significantly improved. This effort was successful, and proved its effectiveness during the Gulf War.

By reviewing the reserve mobilization system of these countries, this paper will provide implications from these reserve forces. Although their security environment and national characters are different from South Korea, however, as these showed great effectiveness during the war, some implications from these mobilization systems will contribute to establish the new South Korean reserve mobilization system. Therefore, South Korean military planners should carefully select implications.

2. Scope and Methodology

The Basic assumption of this paper is this : the brilliant performance of the forces in a war comes from the high readiness which was maintained by well-organized military system in the peace-time. Historically, a lot of military experts argued that the military leaders should put much effort on maintaining high readiness of their units in peace time. Also, a lot of cases showed that forces with high readiness tended to defeat their enemies. Thus, analyzing the military system, which was proved its effectiveness during the war-time, is meaningful. The reason is that the effectiveness of a military system can be proved only during the war time or quasi-war time.

This paper mainly analyzes the reserve system of Israel and the U.S. The reasons why

this paper chooses the cases of Israel and the U.S. are these : ① Both Israel and the U.S. reserve forces showed great effectiveness and readiness during the war. During the Arab-Israeli Wars, the Israeli reserve forces, which consisted more than 75% of the IDF, accomplished great success. In the case of the U.S. reserve forces, after adopting the Total Force concept, they accomplished a remarkable improvement. This improvement was proven during the Gulf War. ② Israel has similar geographic and demographic situation to South Korea. Firstly, both countries had short strategic depth. Due to this shortage, both countries are vulnerable to enemy's surprise attack. Also, their core areas, such as industry complexes and capital area, are near the borders. If these areas are preoccupied by enemy forces in the initial phase of war, it will be a serious damage to both countries. These weaknesses require them to build military force with great preparedness and agility. Secondly, both countries are surrounded by strong countries. Israel is surrounded by huge and powerful countries with great population. Since these countries showed hostilities after the independence of Israel, the Israeli government had to build enough military power to cope with them. The most appropriate solution was a bulk of disciplined reserve forces. South Korea is also surrounded by strong countries. Although the security environment of Korea has been much stabilized after the U.S. has acted as a balancer in the Northeast Asia. However, there still exist potential problems, which the U.S. can not intervene, such as Dok-do problem. Thus, the South Korean government should build enough military power to cope with those local disputes. Also, the South Korean government has a strong hostility – the North Korean government. By changing itself as a garrison state, the North Korean government has tried to subvert the South Korean government. Thus, Israel's efficient reserve mobilization system would provide a lot of lessons to South Korea. ③ Previously, the U.S. didn't regard reserve forces as valuable human resources. However, after the U.S. adopted the Total Force concept, and put much effort on the improvement of reserve forces, it accomplished a great improvement in the readiness and effectiveness of the reserve forces. This was proved in the Gulf War. In this regard, the South Korean Army, which also doesn't regard reserve forces as valuable human resources, can learn a lesson from the U.S.

In chapter II, this paper will talk about the concepts of mobilization and reserve forces. This chapter will provide basic background concepts about the military mobilization. In chapter III, this paper will analyze the security environment of South Korea, and find out

problems of South Korean reserve mobilization. This chapter will also provide the analysis of Gang-reung area operation for a case study. In chapter IV, this paper will analyze reserve mobilization of Israel, and the reserve mobilization during the Six Day War and Yom Kippur War for case studies. In chapter V, this paper deals with the reserve mobilization of the United States, which has one of the most powerful reserve forces in the world. This paper will also analyze the gulf war, which was a test stage for “Total Force Policy”. “Total Force Policy” is regarded as a successful revolution of the U.S. reserve forces by a lot of experts. During the Gulf War, Total Force Policy was proved its effectiveness by high combat abilities of the U.S. reserve forces. For conclusion, this paper will provide implications from these cases. The implications from these countries will provide ways to improve the readiness and responsiveness of South Korean reserve forces.

For all these researches, this paper mainly refers to books, article, and websites. Especially, to analyze the Arab-Israeli Wars, “The History of Military Mobilization of the World”, written by the Emergency Planning Committee (Korea), was mainly referred. Also, for the Gulf War, “Conduct of the Persian Gulf War: Final Report to Congress”, written by the U.S. DOD was mainly referred.

This paper has limited scope. Firstly, this paper only deals with manpower mobilization. Mobilization can be divided into a lot of types. If mobilization is sort by main resources, it can be divided into 3 parts - manpower mobilization, material mobilization, and others (MND, 2008). To limit scope of this paper, only “Military Manpower mobilization” will be focused on. Also, even though there are various types of manpower mobilization, for further limits, only mobilization of the reserve forces will be concerned. Secondly, this paper revolves around the effectiveness of reserve mobilization in war time, not in peace time. Generally, mobilization can be conducted when national emergency occurs including serious natural disasters. However, this paper will focus only on reserve mobilization conducted during war-time.

II. THEORETICAL BACKGROUND OF RESERVE MOBILIZATION

1. Concept of Reserve Mobilization

A. Concept of Mobilization

According to Korean Defense White paper (2008), mobilization means “exercise of government authority to efficiently manage and control manpower, materials, goods and services to achieve objectives in incidents of national security when a war or comparable national emergency occurs”. Also, the United States Department of Defense (DOD) (1989) defined it as “The act of preparing for war or other emergencies through assembling and organizing national resources”.

Mobilization is divided into 2 parts – national mobilization and military mobilization. National mobilization is one of the government’s action to secure the national security that controls and manages the authority to accomplish government’s functions and intangible and tangible national resources. This means transfer of the peace-time national operating system into war-time national operating system and mobilization of all national resources. Military mobilization means “the act to transfer the armed forces or part of them to take action to war or other national emergency” (NDU¹, 2002). In other words, this means transferring the potential military power to the practical military power. Thus, the aim of military mobilization is assignment of right national resources to the right place to take military action. In this regard, Reserve Mobilization can be defined as “exercise of government authority to efficiently manage and control the reserve forces to achieve objectives in incidents of national security when a war or comparable national emergency occurs.”

B. Classification of Mobilization

Generally, mobilization is classified into manpower mobilization and material mobilization. However, each country categorizes it differently. Sort by the range of mobilized resources, it can be divided into total mobilization and partial mobilization. Total mobilization is a

¹ NDU : The National Defense University (Korea)

type of mobilization, which mobilizes all pertinent tangible and intangible sources. However, in partial mobilization, the government mobilizes partial resources or resources of partial area (MND, 2008).

Sort by status of state, war time mobilization is conducted during war time, and peace-time mobilization is conducted during peace time.

To spread widely, and stimulate people's willingness, the government conducts public mobilization. However, the government also issues mobilization orders individually to remain it in secret.

Manpower mobilization means mobilizing human resources, such as reserve forces. Material mobilization means mobilizing material resources to maintain sustainability, such as commodities, and equipments. Figure 1 shows these types of military mobilization.

Range	<ul style="list-style-type: none"> · Total Mobilization -Mobilization of all pertinent tangible and intangible resources · Partial Mobilization -Mobilization of partial pertinent resources or area
Status of state	<ul style="list-style-type: none"> · War-time Mobilization -Issuing mobilization orders, based on mobilization plan · Peace-time Mobilization -Mobilization of partial pertinent resources or area
Issuing measurement	<ul style="list-style-type: none"> · Public Mobilization -Publically issuing mobilization orders · Individual Mobilization -Secretly issuing mobilization orders to individual
Resource	<ul style="list-style-type: none"> · Manpower Mobilization -Mobilization of manpower resources · Material Mobilization -Mobilization of resources, which ensures war sustainability, such as commodities, equipment, and facilities

FIGURE 1. Classification of Mobilization

Previously mentioned, in this paper, Manpower Mobilization of reserve forces in the war time will be focused.

C. Concept of Reserve Forces

Janovitz (1977) classified the Reserve Forces into “Stand-by Reserve Forces, Organized Reserve Forces, and Militia :

- Stand-by Reserve Forces - Army, navy, and air force personnel, under the direct control and organization of the central government, who can be mobilized rapidly in periods of tension and conflict and who are part of the operational military.
- Organized Reserve Forces - Army, navy and air force personnel, under the direct control and organization of the central government, whose effective mobilization and integration require longer periods than those required for standby forces.
- Militia - An aspect of the central military force and used as a reserve for national defense purposes. Personnel are fully uniformed and available for mobilization assignments in regular national defense forces.

According to Korean Army (1996), reserve forces are defined as “Civilians who work in their own field in peace time, however, in war time, they were activated and mobilized to conduct duties of national defense, such as unit augmentation or local defense”. In Korea, the Men who completed compulsory military service or reserve conscript duties are transferred to the reserve forces. Their duties are these (Korean Code, 2010) :

- Prepare the mobilization, such as the unit augmentation or operational requirement in emergency
- Neutralize armed communist guerillas or enemies
- Suppress insurgents, if it's power overwhelms the police
- Secure the important facilities, armories, and communication lines
- Support Civil defense

Klerman (2008) argued that reserve forces have these characteristics :

- Citizen Soldiers : Because reserve duty is only part-time, almost all reservists have a civilian job. It follows that reservists must juggle the requirements of reserve duty with the requirements of that civilian job.
- Less Expensive : Because they are part-time, reservists simply spend less time in uniform. Therefore, in years in which they are not mobilized, they can be
- Limited Training Opportunity : Because reservists are part-time, they may be less capable than Active Forces. At mobilization, they are often capable of doing only a more limited range of mission-essential tasks. Rather than training intensively during peacetime, after mobilization, reservists often need more time to sharpen their existing skills and to learn new skills related to their specific anticipated missions.

Thus, reserve forces can be defined as “cost-effective citizen-soldiers only activated in national emergency to protect vital national interest”. Thus, the government should try to find a way to maintain the high readiness of the reserve forces with limited sources. If not, they will be only paper forces in the war time.

D. Significance of Reserve Forces in Military Aspect

As the aspect of war changed to total war, which requires all national resources, the significance of reserve forces has grown up rapidly. Especially, after two World Wars, recognizing the significance of the reserve forces, a lot of military planners have planned a lot of measures to increase the effectiveness of reserve forces. The significance of the reserve forces can be considered into two aspects- war time and peace time.

1) War Time : Supplementary Forces

In war time, reserve forces are great human resource for troop reinforcement. As the fire power of the war increases, a lot of active unit loss will be occurred just after the initiation. Thus, a lot of supplementary forces are required to fill up the gaps in the front line. In this situation, reserve forces are excellent supplementary human resources. Already experiencing the military training, they need less training time than that of conscripts. Thus, with a proper measure, they can be a excellent reinforcements. In addition, they are also useful for rear area guard.

In the case of South Korea, as the North Korean Army - main threat of South Korea - has enormous artillery power, and special forces, if there occurs a war, a lot of active forces are expected to be damaged with the initiation, and most of the areas are expected to become battle fields. This means that South Korean Army is required to nurture effective reserve forces in peace time. Thus, the South Korean Army should find out proper measures to increase the effectiveness of the reserve forces.

2) Peace Time : An Element of Non-Provocative Deterrence Strategy

In military aspect, a strong power can deter provocations from a lesser power effectively. Paradoxically, a lesser power also can deter the strong power by building enough military ability to give an unacceptable damage as retaliation. In this case, lesser power can force strong power to control unilateral use of force. Historically, a lot of lesser power chose reserve forces as an element of this deterrence measure. Those countries has an unique defense system, such as “General Defense” in Switzerland, “Total Defense” in Sweden, and “People’s Defense” in Yugoslavia, which mobilizes a bulk of reserve forces in a short time to protect their country. With these reserve forces, they increase the cost of potential aggression of strong powers, and discourage strong powers from invading. Thus, they have tried to nurture effective reserve forces, and increase their readiness. This kind of deterrence is called “Non-Provocative Deterrence²”. However, this non-provocative method can’t assure successful deterrence without military cooperation. This strategy is effective when lesser power establishes solid military alliance with other strong military powers (On, 2007).

In the case of South Korea, as it is surrounded by strong military powers, this kind of approach is recommendable. Reviewing the case of Israel, the deterrence from mutual retaliation will bring about enormous damage to South Korea. Also, as the ROK-US military alliance is solid, this measure can be properly effective to deter other countries in the Northeast Asia.

² Another deterrence measure, which lesser power to deter strong powers, is called “Active Deterrence”. This measure premises mutual retaliation (On, 2007).

E. Concept of Reserve Mobilization Responsiveness and Readiness

According to Webster (2010), responsiveness means that “quick to respond or react appropriately or sympathetically”. In reserve mobilization, this “respond” or “react” means that “deployment of human resources and equipments to the right place in emergency”. However, if these resources doesn’t deployed timely, these resources will be useless. Also, if these resources don’t have perfect preparedness, they will be useless in emergency. Thus, reserve mobilization responsiveness can be defined as “deploying manpower and equipments, which has perfect preparedness, to the right place quickly”. In this regard, responsiveness of forces can be estimated by the required time to deploy manpower and equipments with perfect preparedness to perform their functions and duties.

The U.S. JCS defined readiness as ① Combination of capability, equipment, and manpower readiness to carry out expected function or organization ② Condition of equipment to carry out its function ③ Availability or qualification of a soldier to fulfill duties (Braun, 1992). The U.S. DOD (1989) also defined it as “the ability of forces, units, weapon systems, or equipment to bring the expected outputs without intolerable delays”. Thus, Reserve Mobilization Readiness means “Ability to mobilize capability, equipment, and manpower of Reserve Forces to conduct certain duties or functions”.

Due to its short of training time and will, the readiness of reserve forces is lower than regular forces. Also, considering the mobilization time, reserve forces would require much time to carry out their duties in an emergency. Thus, a country should maintain high readiness of the reserve forces in peace time. This can be achieved by establishing effective reserve mobilization system. It might require the establishment of various management systems of the reserve forces, such as legal, training, management, equipment systems for the reserve forces.

These two elements are the most important elements in reserve mobilization³. If reserve forces don’t have perfect readiness, or are not deployed to the right place quickly, they will become useless forces during the war. Thus, military planners should establish proper measures to increase readiness and responsiveness of the reserve forces in peace time.

³ Some experts add “Sustainability”. However, this paper will not deals with sustainability.

III. IMPORTANCE OF HIGH READINESS AND RESPONSIVENESS OF THE SOUTH KOREAN RESERVE FORCES

Previously mentioned, reserve forces contribute to national security as a source of supplementary military forces in war time, and a measurement to build non-provocative deterrence. Considering South Korea's security environments, those roles of reserve forces are significantly important. However, it seems that the Korean military planners should put much effort on reserve mobilization system. During the Gang-reung area operation, they showed low preparedness. Also, a lot of experts claimed that there are a lot of problems in the reserve mobilization system.

In this chapter, this paper will analyze the security environments of South Korea, and deduct requirements for reserve forces. However, according to review of the Gang-reung area operation, the reserve forces don't seem to have enough preparedness to accomplish their duties. This paper will analyze the case of Gang-reung area operation, and problems of South Korean reserve forces.

1. Security Environments of South Korea

Security environment is one of the most important factors for a country to determine its defense system. By analyzing this security environment, military planners can deduct requirements for its military forces. These are the security environments of South Korea.

A. Lack of Strategic Depth⁴, Geographical Vulnerability of the capital area

One of the most serious weaknesses of South Korea's security environment is shortage of strategic depth. Countries who have shortage of strategic depth, like South Korea and Israel, has a serious vulnerability to conduct war. Due to this shortage, invaders easily can take an advantage of preoccupying defender's core areas, if there is not appropriate defensive measures. If this happens, defender countries can lose its national supply depots in the initial phase. Because of this geographical vulnerability, Korea was vulnerable to surprise

⁴ The military concept of strategic depth refers to the distance between actual or potential frontlines and key centers of population, logistics and industrial and military production. Having such depth allows a country to withstand initial offensives and enables it to regroup to mount a counter-offensive (Shibil Siddiqi, 2010).

invasions from other countries. For example, during the Japanese invasions of Korea (1592 - 1598), it took only 18 days for Japanese to preoccupy Seoul areas (Britannica, 2010).

These days, an emerging problem is that the capital area of Korea, which contains approximately more than 1/4 of population of Korean and core industries, is close to the border with North Korea. This provides a lot of advantages to North Korea that they can take advantage of preoccupying this core area in the initial phase. Historically, it took 3 days for the North Korean Army to preoccupying Seoul during the Korean War. If this happens, the South Korean government will have serious obstacles to conduct war. Thus, in wartime, the South Korean Army has a tough requirement that it has to check the advance of North Korean Army in the northern area of South Korea.

B. Threat of North Korean Army : Short-Term Blitzkrieg Strategy with Mixed Warfare and a Mass of Reserve Forces

North Korea's military strategy toward South Korea is the "short-term blitzkrieg strategy" to win the war before the U.S. augmentation forces arrive the Korean peninsula (MND, 2008). Historically, due to lack of strategic depth, the battle field environment on the Korean Peninsula was suitable for blitzkrieg. North Korea is expected to initiate an early surprise attack and mixed warfare with the regular and guerrilla forces. At the same time, North Korea will exploit a success with its firepower and armored, mechanized units.

Following evidences showed their intention relevantly. According to MND (2008), the North Korean government reinforced its special warfare ability by establishing light infantry divisions in the forward area with approximately 180,000 forces. They are expected to infiltrate rear areas of South Korea in contingency through underground tunnels. In addition, recently, 170mm self-propelled artillery and 240 multiple rocket launchers deployed in the frontline. They can carry out a massive surprise bombardment on the Seoul area from their current location. About 70% of these ground forces are in the South of the Pyongyang-Wonsan line, which means that they are ready to initiate surprise attack.

Additionally, this garrison state has enormous reserve forces. About 7.7 million reserve troops⁵ can complete mobilization within 24 hours after the call-up orders are issued. Considering their military service period (10 - 13 years), they might be a useful augmentation forces.

⁵ This is about 30 percent of the entire population.

C. Potential Dispute with Neighboring Countries

It is expected that the security environment in the Northeast Asia will be similar to present one in the future. According to Kim (2010), it is expected that the North Korea will remain as main threat to South Korea, and China and Japan are expected to try to maintain the status quo. Also, as the U.S. acts as a balancer in the Northeast Asia, the possibility of military conflict is low. Additionally, if the military power of South Korea doesn't become much lower than that of other countries in the Northeast Asia, and the ROK-US alliance is still consolidated, the possibility of war between South Korea and neighboring countries is low. However, if there is small dispute between South Korea and other countries, which is hard for the U.S. to intervene, such as Dok-do problem, the South Korean government should solve it by itself. Thus, the South Korean government should build enough military power, which neighbor countries can't ignore. Considering international relations, and the fact that South Korea is a lesser power to neighboring countries, such as Japan and China, and South Korea doesn't have enough military power to give them unacceptable damage, the South Korean government should choose non-provocative defense strategy.

Considering these security environment, the most important requirement for the South Korean Army is speed and great preparedness. If the North Korean government initiates war, it will try to initiate surprise attack and pursue the lightning war. The South Korean Army should have abilities to react to this surprise attack as soon as possible. Thus, they should be speedy and maintain great preparedness in peace time. Also, to cope with potential dispute with neighboring countries, the South Korean Army should have enough military forces with great preparedness to build deterrence against them.

The South Korean reserve forces also should fulfill those requirements. During the wartime, the South Korean Army needs recoup for the loss of forces. Also, it needs supplementary forces to control the rear areas where active forces can't reach. Considering North Korea's expected strategy in war time and South Korea's geographical vulnerabilities, those requirements are significant.

However, the South Korean reserve forces don't seem to have enough ability to fulfill those requirements. Especially, during the Gang-reung Area Operation, which was one of the largest anti-infiltration operations in South Korea, they revealed a lot of weaknesses.

2. Case Study : Gang-reung Area Operation

The Korean reserve forces were firstly established in 1968. However, there is no total war on the Korean Peninsula after the Korean War. Therefore, there is no way to measure the effectiveness of reserve forces in war time. However, there were several cases that Korean reserve forces were mobilized and participated in battle. By reviewing the reserve forces in those operations, the effectiveness of Korean reserve forces in war time can be analogized. Among them, the most appropriate operation would be Gang-reung area operation, which was the largest anti-infiltration operation in 1990s⁶.

A. Background

On September 14, 1996, 25 armed North Korean soldiers attempted submarine infiltration into South Korea. The submarine arrived on the South Korean coast south of Gang-reung on September 15. 3 spies infiltrated and gained information about a South Korean Air Force base near the coast. Finishing their mission, spies tried to swim to the submarine, however, waves were too tough. They ordered the submarine to come closer to sea shore. Unfortunately, their submarine was struck on rocks. Failing to unstuck it, they decided to destroy the equipments inside and burn secret documents. They swum to the sea shore, and decided to infiltrate back. On September 18, approximately at 1 a.m., a taxi driver found the submarine and reported it to police. At the same time, a sentry found it, and reported it. On that day, at 5 a.m., the Chairman of the Joint Chiefs of Staff, General Kim, Dong-jin ordered a Jin-do-gae 1 (alert order) across Gangwon Province and neighboring areas.

On that day, the South Korean Army started anti-infiltration operations. Average 40,000 soldiers, including 13,684 reserve forces, per a day were mobilized and participated in it.

⁶ There was another huge anti-infiltration operation in 1968, which is called "Eul-jin / Sam-chuk area operation. However, in that incident, reserve forces were in initial stage, and record information is not enough to analyze. Thus, this is not a proper incident for case study.

This operation took 150 million man-days, including 114 million active forces, 28,000 reserve forces and 80,000 policemen. Also, 3,500 helicopters, and 15,000 vehicles were mobilized. This operation was the largest anti-infiltration operation after the Euljin/Samchuk area operation (Kim, 2009).

This operation ended on November 7, 1996. As a result of this operation, 24 North Korean soldiers were killed and 1 soldier was caught.

B. Problems in Reserve Forces during Gang-reung Area Operation

Previously mentioned, each day, average 13,684 reserve forces are participated in this operation. They were formed with active forces and participate in ambush and reconnaissance. However, during this operation, a lot of problems of reserve forces were revealed (KJCS⁷, 1997).

Firstly, among the reserve forces who received call-up order, only 34% of reserve forces were responded and mobilized on the first day. The main reason was 38% of them were out of the province for their living. However, considering that during the Yom Kippur War, about 85% of the Israeli reserve forces responded on the first day, and during Gang-reung area operation, the issuance of call-up order was various, such as broadcasting through TV and radio channels, telephone, and street broadcasts, this is a serious problem.

Secondly, there existed serious problems in management and readiness of reserve forces. A lot of reserve forces showed relaxed military discipline. A lot of reserve forces drank liquor, and made a bon fire during the reconnaissance and ambush. Even some reserve forces went AWOL (absent without leave) from the camp. The cause of death of a reservist who died in this operation was accidental shooting while he was on guard in a drunken state (Lee, 1996). To prevent this kind of accident, some units didn't distribute live ammunitions to reserve forces. Additionally, the insufficient equipment supply for reserve forces was pointed out (IMHC⁸, 2004).

Considering previous happenings, South Korean reserve forces had serious problems in readiness, and responsiveness. However, similar problems were showed again in the later survey in 2004. According to Lee (2006), among 700 reserve forces, 84.6 % of them said

⁷ Korean Joint Chiefs of Staff.

⁸ Institute for Military History Compilation.

that they don't know their mobilization procedures. 81.7% of them said that they don't know which unit they should go after receiving call-up order. In addition, only 28.4% of them said that they will respond immediately when they receive call-up order.

Also, insufficient equipment supply was showed again. According to Kim (2010), the average rate of equipment procurement for reserve forces was only 48.9%. In addition, about 97% of their rifle was too old for shooting.

These results showed that previous problems - low responsiveness and readiness - can occur again in national emergency. Then, how can the South Korean Army improve its readiness and responsiveness?

In this situation, a study on ideal reserve forces of other countries, which showed excellent readiness and responsiveness during the war, will be a good way to find implications. The most appropriate cases are Israeli reserve forces and the U.S. reserve forces. Both countries experienced total wars after the World War II, and their reserve forces showed great readiness and responsiveness. Although their security environment and national characters are different from South Korea, some implications from them will provide the first step for improvement.

IV. RESERVE MOBILIZATION OF ISRAEL

Surrounded by hostile countries with great national capabilities, Israel should establish strong military capabilities that could deter these enemies. One of the measurements was a rapid mass reserve mobilization. Relying on disciplined reserve forces, Israel could defeat the Arabs, even though it had serious geographic and demographic situation.

This chapter contains analysis of reserve mobilization system of Israel. This unique system will provide a lot of implications for South Korea, which needs rapid and effective reserve mobilization system for emergency. For a case study, the Six Day War and the Yom Kippur War will be covered. In these wars, as disciplined Israeli reserve forces played a pivotal role, the Israeli reserve mobilization system proved its effectiveness.

1. Reserve Mobilization System of Israel

A. Strategic Vulnerability

Although emerging from victory in the War of Independence (1948 – 1949), Israel had serious problems in strategic environment. Firstly, Israel was surrounded by belligerent Arab countries with great population. The Arabs had the significant manpower superiority (32.3 million to 650,000) (Murray, 1994). This was a remarkable threat meant that Arab countries could maintain enough regular forces. Secondly, Israel also had serious geographic vulnerability. The Israel territory was approximately 8,000 square miles, and the length was 615 miles on land. The width of Israel was from a few miles to a few score miles. Also, there were no geographical obstacles along the borders. These brought a lot of serious geographic vulnerabilities. Furthermore, Israel's major national capabilities, such as military facilities, industrial areas were potentially within reach of Arab armies (Rodman, 2001). For example, in West Bank, which has the almost all of the population and industries of Israel was within artillery range of Jordanian Army.

This lack of strategic depth provided a lot of advantages to the Arabs, especially in border areas. West Bank was one of the weakest points in Israel (FIGURE 2). There was a possibility that Jordan might sever the country into the north and south, which means cutting lines of communications. Additionally, Jerusalem was under more serious situation.

Surrounded on 3 sides by Arab countries, it was possible that Arab countries rapidly isolate this area from Israel (Murray, 1994).

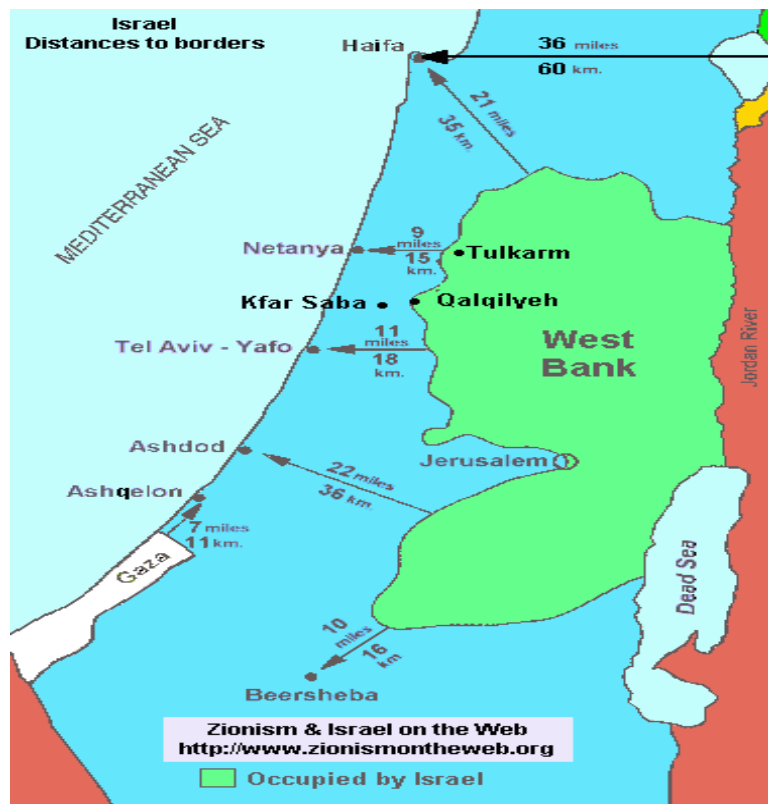


FIGURE 2. Israel distances to borders

B. Military Doctrine and Mobilization Concept

These vulnerabilities led Israeli defense planners to consider these concepts.

① Considering given geographical situation, Israeli defense planners pursued preventive and preemptive war. ② Prolonged low-intensity conflicts would finally lead Israel to substantial damage. Also, a total war could be a huge threat to their survival. This thinking created the concept that war should be transferred to enemy territory, especially in the case of a full-scale war. To cope with low-intensity conflicts, Israel emphasized on retaliation. Since the IDF didn't have enough manpower and material resources to protect the territory against armed infiltrators, Israel had forced enemies to stop infiltration by burdening damages on their societies through revenge attacks (Rodman, 2001).

Considering their demographical vulnerabilities, Israeli defense planners preferred a

lightning war. This war required less economic damage. Also, given Israel's small population, Israel wanted to end wars quickly to keep their population. To pursue lightning wars, offensive maneuver warfare was an excellent solution. Based on rapid movement, in offensive maneuver warfare, more disciplined force takes advantage over the numerically superior forces. In this war, Israel can take more advantage than the Arab states – which pursues the attrition war (Rodman, 2001).

Additionally, to cope with much larger Arab forces, standing army was required. However, Israel could not afford to maintain enough regular forces to cope with, because its small human resources. Recognizing this, Yigal Yadin, the first chief of staff, established a universal reserve system, which required every citizen to be transferred to a reserve unit after they completed active duties (Murray, 1994). In this system, Israel maintains small number of standing army during the peace time. However, in the war time, the IDF is supplemented by a lot of disciplined reserve forces. This was a cost-effective survival strategy for such a small country, surrounded by much larger hostilities.

C. Reserve Mobilization System

Having found themselves surrounded by large hostilities, they established a framework for rapidly mobilizing a bulk of ready-to-fight forces in war time (Weitz, 2006). According to David Ben-Gurion, Israel's first prime minister and Minister of Defense, who mainly established the IDF and Israel's initial security doctrines :

‘Our security is based first and foremost on the reserve army ... on a fighting people which will be mobilized rapidly when the need arises.’ (Cohen, 1999)

According to Washington times (2004), Israel's regular army of about 125,000 troops can be increased to 500,000 with rapid mobilization in 24 - 48hours after receiving mobilization order⁹. Moreover, 250,000 of them can be mobilized in 6 hours. Over the past 25 years, the Israeli reserve forces have consisted about 75 % of the IDF (Weitz, 2006).

⁹ According to Republic of Korean Reserve Forces (2010), these days, the IDF expects 20 hours to complete mobilization.

The IDF consist of three elements; regulars, conscripts, and reserve forces. The Air Force and Navy consist of mainly regulars, whereas the Army mainly consists of reserve forces. During the peacetime, the IDF consists of a small number of regulars, augmented by a large number of conscripts. According to Rodman (2001), the forces of the peacetime IDF have had two basic functions :

First, they have been in charge of Israel's day-to-day security. Responsibility for day-to-day security, in the main, has meant dealing with low-intensity conflict, whether border skirmishing with an Arab army, counterinsurgency tasks against a terrorist organization, or mob insurrection. Second, they have had to prepare for full-scale war. To this end, they have had to make sure that reserve units, which have always formed the bulk of the IDF's war-fighting potential, could be quickly and smoothly organized and deployed for battle. Maintaining an efficient mobilization system has been crucial to this endeavor. War readiness has also entailed such tasks as training conscripts and reservists, maintaining equipment in usable condition, and updating operational and tactical plans.

As a result, Israeli military planners have regarded reserve forces as core combat forces rather than as supplementary forces. The government spends significantly enormous budgets on training, and equipping reservists in order to maintain high readiness (Cohen, 1999).

Additionally, the Israel government strengthened the prerequisites for covering reserve mobilization by maintaining strong Air Force and Intelligence corps. The Israel Air Force (IAF) takes charge of providing air cover for mobilization and deployment of the ground forces, and holding up an enemy attack until the reservists complete deployment (Tal, 2000). Rothenberg (1979) also argued that :

“the IAF was to protect Israel from air assaults, provide the cover necessary for orderly mobilization, constitute a flexible strategic reserve, and a quick-response instrument.”

This strong IAF also played significant role in the brilliant victory of the Six Day War.

Relying on effective advanced warning, the Israeli government invests heavy funds on intelligence assets, which is established to provide the IDF with the prior warning for rapid mobilization. To prevent surprise attack, the Intelligence Corps, which is subordinate to the

Intelligence Branch of the General Staff, is to provide early warning of threats. Uniquely, this is also responsible for overall national intelligence. This organization plays a pivotal role among the national intelligence agencies, including the Mossad, the General Security Service, and the police (Tal, 2000).

1) History and Development of Reserve Mobilization System

The Israel developed its mass mobilization framework after the War of Independence. After visiting Switzerland, General Yigael Yadin decided to develop a similar reserve mobilization system. Moreover, he decided to modify it to fit Israel's strategic environment (Rothenberg, 1979). The Swiss reserve mobilization system provided a perfectly tested method which fulfilled long-term needs of independent state. In this system, a small core of regular and conscripts trains reservists, and maintains depots and command structures. They also carry out routine duties. They should hold its ground for several days against a surprise attack in the occurrence of war. However, the main body of forces consisted of reserve forces. Every reservist takes home his personnel military equipments. In the occurrence of emergency, they receive a call-up order to fulfill their duties. This system seemed to be the most appropriate to Israeli needs that this could maintain a large army with high readiness without enormous economic burden.

Being inspired by this system, Israel established a military system, which has a great reliance on the mass mobilization of the disciplined reserve forces with great speed. The majority of reserve forces are expected to join their units and receive their equipment in 24 - 48 hours after receiving a call-up order. Some special units are expected to mobilize more rapidly. The IAF reserve forces should mobilize within hours after an enemy attack. Their task is to start striking enemies immediately as well as protecting less-ready IDF units, which are under the process of mobilization. Due to this task, the IDF requires reserve pilots to fly their air crafts for a minimum hours each month to maintain their high readiness (Weitz, 2007).

The combat readiness of these reserve forces would be maintained through intensive training. Additionally, 2.5 years of active service could provide disciplined soldiers, and officers (Yaniv, 1987).

This system was tested several times during 1950-1953, and the call-up methods were improved. Now, they would include total, partial, public, and secret mobilization.

Initially, reservists were assigned to battalions, companies, and brigades distinct from units where they fulfilled active service. After Israel removed this model, the effectiveness of combat readiness and civil-military relations was further improved (Dadon, 1999). Recently, reserve forces have been assigned to units, which contained a lot of their former active-duty colleagues to improve unit cohesion. From this way, they could form a cohesive unit, which has the same shared viewpoint. For example, during the Yom Kippur War, in an armored division in the center of Israel-Egypt border, some reservists had served together for 5 or 6 years (Creveld, 1998).

During the early 1950s, reserve forces were equipped with inferior weapons and took unsystematic drills. A lot of the reserve forces in the 1949-1956 had had little well-organized training. They were recruited rapidly, trained briefly, and put into security duties (Yaniv, 1987). After the Suez War, the IDF Chief of the Staff, Yitzhak Rabin initiated measurements to improve military drills and readiness of the reserve forces. One of the lessons that Rabin had learned from the Suez War was that Israel must strengthen the training for the reserve forces. Then, Rabin put much importance on upgrading the quality of reserve forces. On the other hand, in Arab forces, the reserve forces played only a secondary role in war-fighting. His efforts helped change the reserve forces from a lower-class militia into a highly disciplined force with superior equipments (Inbar, 1999).

Combined with Israel's preemptive strategy, the rapid mobilization contributed to Israel's brilliant victory in the Six Day War. However, the delay of mobilizing the reserve forces before the Yom Kippur War - due to economic and political reasons with wrong intelligence reports - almost led to Israel's defeat at the initial stage of the war. After this experience, the IDF extended the number of its reserve forces by making it more difficult to avoid military service (Wald, 1992). Also, the IDF tried to speed up the reserve mobilization process. To cope with new security environment, the IDF needed additional manpower with quicker mobilization. To provide more manpower, the IDF reclassified men and relaxed physical qualifications and age limits for combat service. Additionally, the reserve call-up system was streamlined and computerized. This reserve mobilization system showed significant readiness that tests made in 1975 and 1976 showed the system to be 90 % effective with the most units ready to put into action within 48hours (Rothenberg, 1979).

D. Mobilization Process and Organizations

Israel has been famous for its efficient mobilization process, and it proved its efficiency during the wars. In this process, the IDF removed the intermediate stages, and provided more responsibilities and authorities to field units. According to EPC¹⁰(2004), The general staff has unified management and supervision over reserve mobilization. Formerly, the deputy chief of staff took charge of the reserve affairs. However, in 2002, the IDF created the new position of chief reserve officer to strengthen the reserve mobilization system, “to counsel the Minister of Defense and The Chief of IDF Staff on issues related to the reserve mobilization system”¹¹.

The regional commands take charge of organization, preparedness, and mobilization of reserve forces. Also, each reserve brigade takes charge of manpower and equipment mobilization.

Notification system is also quick and concise. Call-up order starts from the General Staff to Regional Commands. Each Regional Command issues call-up order to district leaders, and district leaders issues call-up order to individual (Figure 3). The equipments of the reserve forces are stored in depots, which are called “emergency stores” (Tal, 2000).

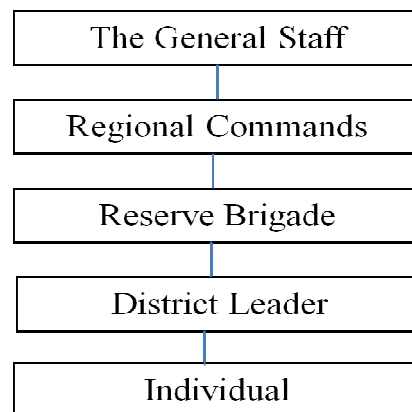


FIGURE 3. Notification System

¹⁰ EPC : Emergency Planning Committee

¹¹ From the IDF Official Website, http://dover.idf.il/IDF/English/units/other/reserves_officer_en/kamlar_designation/default.htm

These days, Israel had 4 types of mobilization methods - Total, Partial, Publicly announced, and Secret Mobilization. In the case of Partial mobilization, it conducts mobilization by a reserve brigade unit¹². Secret mobilization is conducted, when Israel plans to initiate surprise attack. These methods are periodically tested in peace time (Tal, 2000).

E. Reserve Components and Training

When their military service is over, the conscripts are transferred to the reserves. The Israeli reserve forces don't consist of distinct organizations, such as the U.S. National Guard, or a general pool of manpower. On the other hand, they are assigned in military echelons - from companies to divisions. In the reserve forces, the first reserves (men in 21~39, women in 20~25) are regarded as front line units. They are the main force in Israeli Army. They form the forefront combat units, such as airborne brigades, and armored brigades.

The 2nd reserve consists of men in 40~44, who completed their 1st reserve duty. Their duty is damage recovery, public peace keeping, and guard.

The civil defense forces are men in 45~54. They support military operations, such as delaying enemy attacks, and rear area supporting in emergency. After completing reserve duty, they perform subsidiary duties, such as communication, supply, liaison, etc.

When they are called up, they are taken to the YAMACHim (Emergency depots), assigned into the army, equipped by arms, and deployed to the front as soon as possible (Crevelde, 1998).

The main roles of Israeli reserve forces are two. Firstly, they supplemented the regular army for guarding Israeli borders. Secondly, they enhanced the readiness as a part of the IDF. To fulfill these roles, they have underwent 2 kinds of training - short-term training and annual training. During short-term training, reservists supplement the regular army for 1-3 days. During this period, they carry out a portion of security duties of regular army. Every year, Israeli reservists should take 38-55 days of annual training. It takes more than 4 days for an annual training. Training courses consist of individual combat training, unit training, and specialty training. The IDF's training goal is high that the IDF want each reservist to be a first class marksman (Oh, 2002).

¹² The Israeli government divided areas to enhance the efficiency of mobilization. Each reserve brigade places on its designated area.

Since reservists are trained less than regular forces, their weaponry skills is lower than those of the regular forces. To reduce this disparity, the IDF frequently combines regular forces with the regulars in larger units. For example, a lot of IAF units, which consists of the regulars and conscripted soldiers, are supplemented by reserve forces in an emergency. Also, Leadership positions in all types of units are occupied by officers from reserve forces (Weitz, 2007).

There also are frequent rehearsals of call-up arrangements, which are designed to supply the reserves with an encoded mobilization call-up orders and to ensure his rapid arrival at the designated rallying point. The reserve forces take the transports which would carry his unit and its combat equipment to the battlefield (Cohen, 1999).

2. Case Study : The Six Day War, Yom Kippur War

A. General History of Arab-Israeli Wars

As failure of 2 resistance against the Roman Empire in A.D. 72, and 135, Israeli started wandering, which is called “Diaspora”. However, after Dreyfus Affair, and Holocaust, they declared “Zionism”. They decided to return Palestine area, and established a new city – Tel Aviv – in early 20 century. As United Kingdom ended governing in Palestine area, Israel declared liberation in 1948. As a result, 700,000 people who lived in Israel boarder area became refugees, and inevitably, four-neighboring-Arab countries decided to initiate hostilities. These wars are called “Arab-Israeli Wars”. However, The Israelis protected their country against their neighboring enemies in the War of Independence followed by the Suez War, the Six Day War, and Yom Kippur.

This paper will review the case of mobilization in the Six Day, and Yom Kippur War. These 2 wars showed how well-prepared reserve forces can be effective in contingencies.

B. 1967 Arab-Israeli War (Six Day War)

1) Background

After 1956 Arab-Israeli War, the Arabs and Israel had enormously built their military capabilities for 11 years of peace time. However, Israel commenced war with surprise attack on June 5th, 1967. Israel's invasion was marvelous that it decisively defeated The Arabs in 6 days. The main reasons of this surprise attack were :

- ① Arab nationalism was escalated by president of Egypt, Nasser. This brought economic, political conflicts, including border dispute, between the Arabs and Israel.
- ② The world powers, especially the Soviet Union and the United States, intervened excessively to this conflict.

2) Comparison of Military Capabilities between the Arabs and Israel

Compared to Arab forces, IDF had significantly much lower military capabilities. Table 1 shows the military capabilities of the Arabs.

Type	Army	Navy	Air Force
Egypt	- Tank : 1,300 - IFV ¹³ : 1,100 - SSM ¹⁴ : 100	- Destroyer : 6 - Submarine : 9 - Gunboat : 7 · Komar class : 6 · Osa class :1	- Supersonic Fighter Bomber : 55 -Supersonic Interceptor : 40 - Bomber : 73
Syria	- Tank : 500	- Small Vessel : 46	- Jet Fighter : 80
Jordan	- Tank : 550	None	- Fighter : 20
Iraq	- Tank : 300	Unknown	- Air Craft : 20
Lebanon	- Tank : 150	Unknown	- Air Craft : 50
Total Number of Forces		- Egypt : 310,000 (120,000) - Syria : 110,000 (40,000~50,000)	

¹³ Infantry Fighting Vehicle

¹⁴ SSM : Surface-to-Surface Missile

※ () : Number of Reserve Forces	- Jordan : 70,000~74,000 (20,000) - Iraq : 80,000 - Lebanon : 11,000
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TABLE 1. Military capabilities of the Arab before the Six Day War

In 1967, Egypt had 310,000 troops, including 120,000 reservists. However, reservists were ill-equipped, ill-trained, and their duty was only Home Guard. These defaults made them useless in this war. Contrary to reservists, regular forces were well-trained and well-equipped. In the case of Army, they had T-54 and JS-3 as major tanks. Also, they had SU-100 as a major self-propelled artillery. These powerful weapons were supported by the Soviet Union. The Soviet Union even dispatched 400~500 military advisers. Also, Egypt developed long-range SSMs with German scientists. In the case of Air Force, it also had cutting-edge air crafts, such as Sukhoi-7, TU-16, MIG-21. In addition, it also established 27 air defense units in Sinai, Nile Valley, and Delta region. Navy also had “Komar” and “Osa” class gunboat, which had a 10~156 mile range. This was a huge threat to the Israeli Navy.

Compared to Egypt, Syria had much lower military power. Its Air Force and Navy was small and their equipments were not powerful as Egypt was. However, it also had powerful Army with combat equipments, such as T-34 tanks and SU-100 self-propelled artilleries.

Contrast to two countries above, Jordan was supported by the United States and United Kingdom. It had 300 new tanks including M-48, supported by the United States. However, in the case of Air Force, it had only 20 “Hawker hunter” fighters supported by United Kingdom.

Israel had 275,000 forces, including 71,000 regular forces. Israel’s reservists were far qualified compared to Arab’s reservists. As mentioned above, due to Rabin’s effort, they were well-equipped and disciplined. Israeli Army had 27 brigades as front-line units, which were to participate in combat action immediately. It had 14 brigades as rear-guard units. Israel had 200 M-48 Patton tanks and M-4 Sherman tanks, which were new model. It also had SS-10, SS-11, which were anti-tank missiles. Israeli Air Force also had cutting-edge air crafts, such as Mirage-III, Super Myster, which was supported by France.

	Key Combat Equipments	Remarks
Army	<ul style="list-style-type: none"> - Tanks : 800 - Self-propelled Artillery : 250 - Anti-tank Missile : SS-10,SS-11 	Total 250,000~265,000 (Regular Army 60,000)
Navy	<ul style="list-style-type: none"> - Destroyer : 3 - Submarine : 4 	Total 19 Vessels
Air Force	<ul style="list-style-type: none"> - Supersonic Fighter Bomber: 92 - Supersonic Bomber : 24 - Fighter Bomber : 114 - Trainer : 60 	Total 500 Air Crafts
Total Number of Troops	<ul style="list-style-type: none"> - Regular Army : 71,000 - Reservists : 204,000 	

TABLE 2. Military capability of Israel before the Six Day war

3) Preparation for the war

Outwardly, military power of the Arabs absolutely dominated Israel's military power. However, Israel's combat equipments for Army and Air Force were much qualified than the Arabs'. Also, Egypt didn't have accurate and deliberate operation plans. Thus, Egyptian command changed its operation plans frequently, and subordinate units were confused. For example, a few of mobilized reservists moved to battle field without any ammunition.

Contrary to Egyptian forces, the IDF had deliberate plans and preparedness. Even though majority of the IDF consisted of reserve forces, who were much familiar with civilian society, were continuously trained, and they were filled with responsibility and high morale. Before the war began, their mobilization system was frequently checked, and large scale field exercises, which required enormous manpower and equipments, were carried out (EPC, 2004). In May 16, 1967 Israel sequentially mobilized its reservists with active cooperation from Israeli people. This was a driving force to Israel's flawless preparation.

4) Israel's Mobilization Progress

It was first time for Israel to carry out total mobilization. In the initial phase, mobilization progress was poor. Some brigade mobilized only half of their reservists in the expected time. This error was caused from the duality of mobilization system. It was proven that management and call-up tasks were in charge of the Defense Headquarters. However, training and operation tasks were in charge of the general staffs. This system was revised to give all tasks to the general staffs. Anyway, as time goes by, overall mobilization was successful. Israel successfully organized 23 brigades with reservists, out of total 27 divisions (Pang, 2002). Reservists received the call-up order in the night of May 22. They completed mobilization and formation till the afternoon of May 23. It took only 29 days from mobilization to return.

May 22	Issuance of Call-up Order
May 23	Completion of Mobilization and Formation
June 4 ~ June 5	Defensive Operations
June 6 ~ June 10	Attack Operations
June 11	Start of Recovery
June 20	Completion of return

TABLE 3. Phase of Israel's reserve mobilization during the Six-Day War

5) The Result of the War

At 07:45 a.m., June 5, 1967, Israel's air crafts infiltrated Egypt, and neutralized 26 air ports in 3 hours. In addition, it took only 4 days to neutralize more than 2/3 of Egyptian forces, including enormous combat equipments. Jordan and Syria also took heavy damage from the attack of Israel. However, by maximize the effect of surprise attack, Israel took little damage. Table 4 shows the comparison of the damage between Israel and the Arabs.

		Israel	Arab	Ratio
Manpower	Killed in Action	689	19,600	1:28
	Injured	2,563	30,760	1:12
	Prisoner of War	16	6,584	1:411
	Total	3,268	56,944	1:18

Combat Equipments	Air Craft	26	451	1:17
	Tank	86	990	1:12
	Vessel	0	3	.

TABLE 4. The result of the Six Day War

In this war, Israel decisively defeated the Arabs. In addition, it expanded its territory by 4,700 square miles, which is 6 times larger than Israel's previous territory. Arab's military power, which had been supported by the Soviet Union for almost 10 years, was annihilated. This was a revolutionary change in the middle-east area. This outright victory came from Israel's deliberate operation plan and rapid mobilization with Israeli people's cooperation.

C. 1973 Arab-Israeli War (Yom Kippur War)

1) Background

This war was inevitable that the Arabs wanted retaliation for the recovery of its territory and pride. Israel denied Egypt's diplomatic suggestion of retrocession of its territory, and showed its intention to confirm it as a fait accompli. Also, as the U.S. and the Soviet Union seemed to maintain status quo in the Middle East area, Egypt wanted to stop Israel's intention at any cost. Egypt and Syria achieved huge reinforcement of their military power. However, being recognized as belligerent state, Israel was isolated from international support after the Six Day War. This induced the Arabs to desire to commence hostilities. In this condition, there was no trail to settling peace on the Middle East area, and only attacks from terrorists and retaliatory attacks occurred frequently. As this tension peaked in 1972, the war seemed inevitable.

As a result, this war was started from Egypt's preemptive strike on October 6, 1973. In spite of Egypt's successful first strike, Israel overcome it with its excellent mobilization system. However, in this war, Israel was overconfident in its military power, and Egypt put far more effort. Egypt analyzed lessons learned from the Six Day War, and build up its military power to cope with IDF.

2) Egypt's preparation

When there was a huge inflation all over the world and increase in government budget, Israel, however, increased its defense budget by a little amount. In 1972, Israel increased its education budget by around 6 times, and increased its welfare budget by 60%, whereas, increased its defense budget by only 8%. Contrary, Egypt increased its defense budget by 38.5% in 1970, by 46.3% in 1971, and by 43.7% in 1972(EPC, 2004).

Moreover, for its revenge, Egypt put much importance on ① Building up Egypt's military capabilities ② Egypt-Syrian Cooperation ③ Deception Plan.

• Build up military capabilities

To recover its military power, Egypt depended on support from the Soviet Union. The Soviet Union supported enormous combat equipments. In 1968, The Soviet Union already supported 100 landing crafts and anti-tank missiles. Also, it supplied SAM¹⁵-6 "Gainful", and SAM-7 "Grail". This means completion of SAM system. Also, in 1973, the Soviet Union provided "Scud" SSMs, which could carry a nuclear warhead, and technology support to product it. This system provided air defense umbrella for Egypt to cope with Israel's powerful Air Force. Also, Egypt introduced "Sagger" anti-tank missiles, RPG-7 to cope with Israel's armored vehicles, and various military engineer equipments. These transformations in equipments greatly contributed to neutralize the Israel's powerful armored units and air forces. Needless to say, Egyptian Army raised its intensity of the training. These measurements entirely changed Egyptian Army.

• Egypt-Syrian Cooperation

Egypt and Syria agreed to establish scrupulous mutual cooperation. They decided to conduct joint operations under the same operation name, at same attack time. They gradually moved their forces to the line of attack until the end of September, 1973.

• Concealment of intention

For a successful surprise attack, Egypt should erode the IDF's readiness. According to Bar-Joseph (2005), Egypt used two types of deception - active deception and passive deception - like the Soviet Union did. This deception plan was successful that Israeli

¹⁵ Surface to Air Missile

intelligence agency provided wrong intelligent reports to Israeli military decision makers. These wrong reports played a pivotal role in Israeli political leaders' critical mistakes in the initial phase of the war.

3) Egyptian Deception Plan

Previously mentioned, Egypt tried to conceal its hostile intention of invasion to maximize the effectiveness of surprise attack. To achieve great effectiveness, Egypt should induce Israel to erode its readiness for war. For this deception, Egypt took two types of deception- active and passive deception (Bar-Joseph, 2005) :

· Active Deception

- **The Tahir exercises** : Since 1968 these exercises had been carried out routinely. Some were skeleton exercises, others tactical or staff exercises, and some were combined exercises. Though their prime target was to prepare the army for war (and in some cases to back up Egyptian war threats), they were also conducted to get the Israelis used to Egyptian accumulation of offensive forces near the front line.

- **The mobilization and demobilization of reserve soldiers** : Since early 1973, 22 exercises of mobilization and demobilization of reserve units had been conducted. This enabled the Egyptians both to effectively mobilize and to get the Israelis used to this process. Three mobilizations, in which 120,000 reserve soldiers were called to arms, took place during the last ten days before the war.

- **The advancement of forces to the front line** : The bulk of the force that was to carry out the crossing – five infantry divisions – had been routinely deployed in positions since 1970. The deployment of additional forces as from late September 1973 was highly exceptional in many of its dimensions but was not totally irregular since in earlier Tahir exercises emergency deployments took place as well.

- **Repeated alert exercises of the Egyptian Air Forces (EAF)** : Starting September 22, when the Egyptians started moving forces to the front, the EAF conducted a series of emergency deployment exercises. According to Egyptian sources, the IAF reacted by increasing its state of alert. The Egyptian exercises aimed at testing the Israelis' response to

such a move and also to get them used to the irregular activity of the EAF.

In addition, Syria annually deployed its forces at Golan Heights (Herzog, 1975).

• **Passive Deception**

The measurement to reach the concealment was compartmentation. The commanders of the Armies heard that Tahir 41¹⁶ was a smokescreen for the real war, which will initiate 5 days later, when the exercise initiated. Their division commanders heard it on October 3. The brigade commanders heard it on October 4. The battalion and company commanders heard it on October 5. Helicopter pilots were informed that those special forces they carried into the Sinai were put into real action, just before taking-off. The Egyptian political unit was also kept in silent.

The Syrians had also tried to conceal its intention. Only hours before the surprise attack began, Battalion commanders were informed of war on October 6. They were ordered to let their company commanders receive it an hour before fire broke out and their platoon leaders only minutes before H-hour (Bar-Joseph, 2005).

At this point of time, Israeli political leaders concentrated on Israeli election on October. They didn't like extreme measures, such as mobilization, which could cause bad effect on their popularity and economy. Egypt and Syria decided to start attack on October 6, 1973. It was Jewish holy day, which is called "Yom Kippur", that a lot of soldiers are expected to be on leave. Also, this day was in "Ramadan" month, which The Arabs were not expected to commence hostilities. These deception means were successful that even the United States and Israel Intelligence Agencies couldn't expect its first-strike.

4) Israel's Change in Strategy after the Six Day War

After the Six Day War, Israel's strategy was changed. It was changed from first-strike strategy to offensive-defense strategy. This means abandonment of "Preemptive War" as well as abandonment of first strike. This was risky action, because it could cause serious damage to Israel, which is surrounded by much powerful hostilities. However, there are two

¹⁶ "Tahir 41" is the name of a large scale routine crossing exercise of Egypt.

reasons why Israel changed its strategy. Firstly, Israel's security environment had changed. Before the Six Day War, due to short strategic depth, Israeli intelligence couldn't ensure an appropriate advance warning, and first strike from enemies was unacceptable for Israel. These always threatened Israel's vital interest, so that Israel pursued first-strike strategy. However, after the Six Day War, as Israel preoccupied the Sinai Peninsula and Golan Heights, it took advantages in strategic environment. As Israel took Sinai Peninsula, Israel could attack Suez Canal area, where Egypt's major industries are concentrated. Also, as Israel took the Golan Heights and the West Bank areas, it could threaten the capital of Syria and Jordan.



FIGURE 4. Land taken by Israel after the Six Day War

Secondly, international society perceived Israel as an aggressive country after Israel's two preemptive strikes. This image isolated Israel from support from the international society. Even some African countries severed diplomatic relations.

As a result, Israel adopted new defensive plan. This plan relied on 3 essential elements

(Herzog, 1975) :

1. Prepared defensive strong points along the hostile borders, which would enable Israel's small standing ground force (supported by a qualitatively-superior, regular air force) to block any initial assault.
2. Rapid mobilization of well-trained reserve ground forces to execute crushing counter attacks (Israel's ground forces more than tripled to over 350,000 on full mobilization.)
3. Sufficient strategic warning (minimum 24 to 48 hours) to both properly deploy regular forces into the border defenses and mobilize the reserves.

Following this plan, Israel built a chain of fortifications and anti-tank obstacles along the Suez area, which is called "Bar Lev line". Also, Israel remained only one armored division. In the event of an Egyptian attack, its duties would be to hold the line for about 72 hours-enough time for two more armored divisions, consisting basically of reserves, to be mobilized and deployed to the canal. Also, Israeli military planners acted on the high risk assumption that intelligence would offer enough lead time for mobilizing reserve forces, deploying them close to the Egyptian front lines, and thus either deterring the Egyptian forces or blocking their intention as soon as hostilities began.

Based on this assumption, the IDF established a contingency plans for an enemy attack. Depending on the incidents, these plans could be initiated independently or in sequence. The scope and size of the forces to engage was the difference (Cohen, 1999).

· 'Dovecote'(in Hebrew *Shovach Yonim*) (for the Southern front)/'Chalk'(Gir) (for the northern front) has limited scope and size. These plans included little more than holding operations. After finding a sign of imminent enemy attack, the regional commands were to the ground forces were to move to pre-assigned locations on their fronts. Also, supplementary units, which was solely consist of conscripts were to bring into the battlefield. A small number of reserve forces, which consisted of only logistic and combat support (CS) units were to be mobilized.

· After the receiving a warning of much larger and lengthier enemy attack on both fronts, 'Rock (*sela*)' was the responding plan. Majority of reserve forces were to mobilized and

deployed for 5 to 7 days. Offensive actions were allowed – first by attacking the enemy remained in Israel. Then, the IDF were to carry the battle to enemy territory and implement ‘Desert Cat’. Full mobilization, which requires Israel’s entire capabilities were to be initiated under this plan.

· ‘Desert Cat(*Chatul Midbar*)’ and ‘Prairie Wolf(*Ze’ev Aravot*)’ were the most intensive offensive operations which were to constitute the peak of all Israeli military operations. A massive IDF armored forces, which mainly consisted of reserve forces, were to thrust into enemy territory.

However, there was a critical weak gap between military planning and political purpose. Prime minister, Meir and her colleagues didn’t consider the possibility of an full-scale war with the Arabs or assured that Israel could deal with this, even without the mobilization and a preemptive strike. On the other hand, the IDF assumed that the government would require them to initiate the first strike, when an imminent threat of enemy attack was found. (Yaniv, 1987).

5) Progress of the War and Israel’s Mobilization

The Six Day War gave Israel a honorable victory, however, it also gave more strategic depth which is hard to control. According to Yaniv (1987), This gave disadvantages to Israel :

Firstly, the distance of the front from the rear meant that mobilization and deployment of reserves would take far longer, especially in the Sinai. The implication was that the regular force on the cease fire lines would have to sustain a surprise attack longer than before. Secondly, the small distance between the IDF and Egyptian forces across the cease-fire lines gave the IDF totally inadequate advance warning. The Egyptian and Syrian Armies were regular soldiers. When these were permanently deployed right on the cease-fire lines, all they had to do in order to move into battle was to cross a few hundred yards. The Suez Canal and the Jordan River obviously added important obstacles. But because of the Israelis’ fixation on strategic depth and their assumption that the intelligence community would be able to provide adequate early warning, many Israelis failed to realize that the advantage of formidable physical barriers could not offset the disadvantages of having to mobilize reserves in the rear and deploy them at the front, which was about a hundred miles away.

Before the war began, forward observers caught signs of commencement of hostilities. On 27 September, Egypt mobilized a bulk of the reserve forces, and it announced that they would be demobilized on 7 October. On 2 October, Egypt placed bridging equipment, fighter aircraft and SAM batteries at Suez Canal. Also, observers reported that their bridging equipment was advancing, and the Egyptian 3rd Army prepared crossing spots in their sector (Bar-Joseph, 1995). On 4 October, dramatic warning indicators were reported that there were an unprecedented number of Egyptian Forces in the Sinai. Additionally, 5 divisions and a bulk of artilleries were placed on the west bank of the canal (Cohen and Gooch, 1990).

On 5 October, Facing these reports, IDF Chief of Staff, Elazar and Minister of Defense, Dayan ordered that the entire IDF enter into the highest stage of alert. (Alert C) This means that the Chief of Staff ordered all units to prepare for mobilizing reserve forces. However, Israeli military decision makers decided to only carry out the initial stages of 'Dovecote/Chalk'. Contrast to this alert, on the front line, there is some evidence that the readiness of field units was eroded. Some reservists were released that week. Reservists assigned to the posts on Suez Canal, they continued their accustomed rotation of leave. In the north, majority of the reserve brigades were summoned for a pre-planned and routine mobilization exercise, which started on 30 September. However, they were demobilized the next day, only one battalion being remained (Cohen, 1999).

On 6 October, Elazar and Dayan received information that Arab attack would come at 06:00 a.m. Subsequent cabinet meeting was held, however, Elazar and Dayan had different reaction plans. Elazar asserted a preemptive air strike and full mobilization should be initiated for a rapid counter attack. Dayan disagreed on the preemptive air strike for political reasons. Also, he thought that a full mobilization was not necessary, because a lot of forces are already positioned on the Bar-Lev Line. At subsequent meeting with the prime minister, Meir, the preemptive strike was out of the plan and only a partial mobilization was decided. They agreed to mobilize only 100,000 reservists, and total mobilization was allowed later that day as the attack became more serious (Buckwalter, 2002).

At 09:25 a.m. Mier gave Elazar the authorization for the large-scale mobilization which had originally requested. Large-scale mobilization orders for the IDF reserve forces were issued around 9:30 a.m. on 6 October. Given the failure of pre-war planning, all depended on the speed and efficiency of the reserve forces, which would be deployed into the battle field (Cohen, 1999). The mobilization process had been rapidly progressed before 10:00

a.m. after brigade mobilization centers received the code words. These centers summoned couriers by telephone to order them to herald it to civilians. After mobilization order was issued, Israeli people had unified firmly. People who received call-up rapidly joined their pre-assigned units, and people who didn't also went to garrisons to join in. Israeli airlines in foreign countries were crowded by Israeli people who wanted to come back to hometown. There was even a retired lieutenant, who was a wanted criminal for document forging (Kim, 1989). Over 200,000 civilians were mobilized during the night. Despite the surprise, 85 percent of units could reach the front line in the planned time. Majority of them could reach in half the time (Rabinovich, 2004).

The first 48 hours of the Arab attack was so severe that Israel gave the initiative to the Arabs. On the Syrian front line, the Syrian forces had successfully assaulted the IDF, and had almost neutralized a division. The situation was so severe that arriving Israeli tanks consisted "ad hoc" platoons, which were made whenever 3 tanks could be combined. However, as mobilization progressed, the IDF could seize upon an opportunity to counter attack. On 8 October, two Israeli reserve armored divisions arrived in Sinai and initiated a counter attack to the Egyptian forces. On 9 October, the IDF reserve forces had arrived on the Syrian front, and stabilized the situation. They also recovered the pre-war lines (Buckwalter, 2002). A major counter attack was successful on 11 October. As a result of this counter attack, Israel could threaten Syria's capital, Damascus, and Israel could catch a chance of reverse. On 20 October, UNSC Resolution 338 was passed. This resolution required a cease fire. However, on 18 January 1974, they could reach a disengagement agreement. On 31 May 1974, an agreement, which included a UN buffer zone near the pre-war border, was finally reached. During this war, 2,687 Israeli soldiers were killed in action, and 7,251 soldiers were wounded (Dunstan, 2003). Also, the IDF lost more than 800 tanks and 100 aircrafts. On the other hand, the Arabs had more than 28,000 casualties, and they lost over 1,850 tanks and 450 aircrafts (Cordesman, 1990).

At the start of this war, the Arabs took advantage of Israel's weak moment. The Arabs deliberately concentrated all strike capabilities to end this war in 48 - 72 hours, before the IDF completed mobilization. However, due to Israel's excellent preparedness of reserve forces, Israel could overcome its initial inferiority. This war became a case that proved the effectiveness of disciplined reserve forces and mobilization system.

V. RESERVE MOBILIZATION OF THE U.S.

The U.S. reserve mobilization system was significantly improved, since the U.S. forces adopted the Total Force Concept. This concept created new paradigm of Reserve Forces, which significantly contributed to establishing one of the strongest military in the world. This chapter analyzes Total Force Policy and mobilization system of the United States. In addition, this chapter will provide the case study of the Gulf War, which proved the effectiveness of this policy.

1. The U.S. Military Doctrine : Force - Employment Doctrine

After the World War II, the U.S. emerged as the world's preeminent military power. To maintain this hegemonic power, the U.S. pursued its force-employment doctrine. During the Cold War, the U.S. forces were configured to handle these types of operations (Murray, 1994) :

- Conducting along with NATO allies, a large-scale, intense, conventional war in Central Europe against a blitzkrieg attack by the Warsaw Pact.
- Responding effectively and simultaneously to a minor war or contingency in the Persian Gulf to protect oil fields and shipping in the region.
- Maintaining sufficient capability to intervene successfully in other areas, such as Lebanon, Grenada, and Vietnam

After the Cold War, the U.S. still pursued force-employment doctrine, such as Strategic deterrence, forward presence, crisis response, and reconstitution (Murray, 1994).

Being influenced by this, reserve mobilization system of the U.S. is unique. Since the U.S. didn't have any conventional attack in their homeland, its mobilization is aimed at deploying its forces to conflict areas outside the U.S., such as the South West Asia. Thus, compared to other countries, the U.S. has more available time for preparation.

2. Reserve Force Modernization and Total Force Policy : History and Development

A. Reserve Force Reform under the Nixon Administration (1969 - 1973)

Traditionally, reserve forces were distrusted by most of military decision makers. Reserve forces had regarded as “a dooms day force-of-last-resort”, it will be called up only when the Soviet Union initiated its hostilities in Europe (Chris, 2004). They were expected to be activated only when a serious emergency, which threatens vital national interest, such as invasion of homeland, happens. Thus, their equipment and readiness was significantly lower than regular forces. There were attempts to improve the reserve force system. However, these attempts aimed at mass reserve force mobilization for the total wars. As a result, the quantity of reserve forces was remarkably increased, whereas their quality was not improved yet. However, after several improvements were initiated by the US DOD, the readiness of reserve forces was significantly improved. It was started after the dishonorable withdrawal from the Vietnam. During 1969 - 1973, the Nixon administration period, there was a strong start in the reform of the reserve forces. During this period, a lot of programs were initiated to increase the readiness of the reserve forces. Especially, in this period, Total Force Policy, which had changed the role and quality of the reserve forces completely, was firstly adopted.

Previously, in 1965, the U.S. DOD newly established Selected Reserve Forces. The U.S. DOD selected 150,000 forces among 700,000 reserve forces. The DOD gave top priorities to this unit, and planned to use them as quick-response forces. This reform was successful that this unit was held in high esteem by a lot of field commanders during the Vietnam War. Following this, in 1969, the Army newly organized and trained the Selected Reserve Forces.

After this change, to reduce the mobilization time, the reserve forces were required to acquire essential combat skills before call-up orders. They also took platoon drill. In 1970, the U.S. attempted various measurements to improve the preparedness of reserve forces. The Army established “the Ten Point Improvement Program for the Reserve Forces”. This program was designated as one of the prior task of the U.S. Army. Also, the reserve forces took company level trainings, and had joint trainings with regular forces. This was the starting point of the Army Affiliation program.

The force modernization under the Nixon administration changed reserve forces as a more qualified group. After the Vietnam War, the United States had a modernization of reserve forces during 1969 - 1973. While the defense budget continuously decreased, the budget on reserve forces stably increased. Additionally, while the number of regular forces significantly decreased, reserve forces kept its bulk. The ratio between the regular forces and reserve forces changed from 7:3 to 4:3 (Ahn, 2006).

B. Total Force Policy

The Total Force Policy was originated from the Vietnam War. As the U.S. was defeated and withdrew from Vietnam, the US DOD should reconsider its military capabilities. Long period of war had removed force modernization programs, and the U.S. forces required new equipments. Additionally, the dishonorable withdrawal in Vietnam caused severe confidence problems among the active duty forces, and the National Guard was regarded as a shelter for draft dodgers while it received a lot of criticism for its handling of riot control duty (Doubler & Renfroe, 2003). The threat of Soviet Union was another problem. The Cold War required the U. S. military to engage in expected conflict area all over the world. To respond to this requirement, the U.S. should maintain a large standing army. However, this would put much burden on the U.S. economy. Also, as the U.S. force was changed into the all-volunteer force, military planners recognized that the U.S. needed a reliable source of the sustainable manpower to deter the Soviet Union.

To overcome these problems, Melvin R. Laird, Richard Nixon's Secretary of Defense (1969 – 1973) announced the Total Force concept in 1970. Historically, the basic role of the reserve forces was augmenting the active forces during the war-time. Also, the government should provide a rapid measurement to transform civilians to soldiers. However, Laird declared a new paradigm of Reserve Forces, which reinforced them and redefined their roles and duties. He presented the need to “examine the balance of force mix and force levels among Active, Guard and Reserve elements in order to achieve maximum economies in maintaining adequate national security.” (ASC¹⁷,1973) The essence of this idea was that the reserve forces should take more burden of national defense. The reserve forces would become the initial source for augmenting the active forces. In 1973, The U.S. Secretary of

¹⁷ ASC : Armed Service Committee

Defense James R. Schlesinger improved Laird's work by declaring the Total Force Policy. The objective of this policy was cost-effectively integrating the active forces and reserve forces capabilities. He also directed each service department to implement specific programs to increase their integration. However, the U.S. reserve forces had not reached enough readiness for the future wars (Doubler & Renfroe, 2003).

During the 1980s, the U.S. government invested remarkable budget in both active and reserve forces. As a result, this changed the U.S. forces as a very robust, well-trained, and modern military structure (Brauner, 1992). According to the DOD (1992), these efforts had given the U.S. reserve forces the ability to field around 84 % of the equipment they required for war.

Also, there were several programs that remarkably improved the readiness of the reserve forces. The Round-out Brigade Program was the one of the remarkable program that assigned Army National Guard (ARNG) combat brigades into the force structure of selected Army divisions. In the war-time, this kind of brigades would deploy and were to deploy and put into action as the third combat maneuver brigade of division. As a result, the equipment quality of ARNG was remarkably increased (Doubler & Renfroe, 2003).

The U.S. DOD also tried to increase the active-reserve integration. As a part of this attempt, the U.S. DOD increased overseas drills. For example, the U.S. DOD deployed Army Guard to Europe, Asia and Middle East Asia to participate in joint operations. These attempts were aimed at increasing readiness of the reserve forces and reducing mobilization time.

These efforts proved its effectiveness during the Gulf War. The contribution and willingness of the reserve forces successfully proved the effectiveness of their reserve mobilization system.

3. Reserve Mobilization System

A. Mobilization Level and Presidential Authority : Legal Basis that gives flexibility in mobilization decision process

Starting from force deployment to Barbary Coast in 1801, the U.S. allowed the president to deploy the U.S. soldiers to cope with immediate threats. Also, as "War Powers Resolution" reflects, the U.S. provides great authority and legal basis to president in use of force.

Furthermore, the U.S. government provides a relevant legal basis in mobilization system, which gives more agility in mobilization decision process. In the U.S. Code, the “Section 673b” ,which was established in 1976, allows the U.S. president to call up 200,000 reserve forces for up to 180 days¹⁸ to supplement military operations without declaration of a national emergency (CULS¹⁹, 2010). This code provides flexibility in use of force that the U.S. government doesn’t need any larger debate produced by declaration of a national emergency and partial mobilization. As the U.S. needs more reserve force activation, this code had become more powerful. As this authority provides more flexibility in use of force, it is perceived as a method to a larger mobilization or an useful method to cope with immediate threat.

In addition, the U.S. government specified its types of mobilization. There are 5 types - Presidential Selected Reserve Call-up, Partial Mobilization, Full Mobilization, Selective Mobilization and Total Mobilization. This classification also provides legal authority to the government, and increase the responsiveness of the mobilization. According to the U.S. Army (1992), there are five types of mobilization :

1) Selective Mobilization

Selective Mobilization is an expansion of active duty forces in response to a peacetime domestic crisis. The President, or Congress, upon special action, may order expansion of the active duty forces by mobilizing units and individuals of the Selected Reserve to protect life, federal property, and functions or to prevent disruption of federal activities.

2) Presidential Selected Reserve Call-up (PSRC)

By executive order, the President may augment the active duty forces for an operational mission with up to 200,000 Selected Reserves of the armed forces for 90 days, with an extension of up to 90 additional days without any approval from the Congress. However, the president should report to the congress within 24 hours on current situation and anticipated use of force.

¹⁸ These days, the U.S. government tries to extend the maximum length of active duty service under this authority to 365days (Weitz, 2007).

¹⁹ CULS : Cornell University Law School

3) Partial Mobilization

When there is a conventional warfare to engage, such as the Korean War, the U.S. conducts partial Mobilization. It can increase defense budget to 15% of the GNP. Under a presidential declaration of national emergency, 1,000,000 Ready Reserves can be called up for 24 months. Under a congressional declaration of national emergency and subsequent reserve mobilization under the US Code, this is not limited to a specific number of reservists or length of tour unless specified in a congressional resolution. This mobilization doesn't need PSRC.

4) Full mobilization

Full mobilization authorizes the call-up of all forces in the current force structure to active duty, fully equipped, manned, and sustained. Full mobilization assume that actions for PSRC and/or partial mobilization have been completed and that Congress has declared that either a state of national emergency or war exists. DOD and other federal agencies will start industrial mobilization. All kind of reserve forces may be ordered to active duty. The length of service is for the duration of the war or emergency and for six months thereafter.

5) Total Mobilization

Total mobilization expands the active armed forces by organizing and activating additional units beyond the existing approved troop structure when responding to requirements exceeding the current troop structure. All additional resources needed, including production facilities, may be mobilized to support and sustain the armed forces.

B. Mobilization Process and Organizations

According to the U.S. Army (1992), the mobilization process typically follow this procedure :

The mobilization process usually begins with identifying requirements, which are consolidated and forwarded to the Joint Chiefs of the Staff (JCS) as requests for forces. The services review approved requirements and coordinate with force providers and Reserve component HQs to verify individual and unit readiness. Finally, the services issues activation orders to the units.

Not only military organizations, but also civil organizations take charge of overall process.

Thus, this process requires continuous and precise coordination among them. Followings are additional explanations about the roles of key organizations during the mobilization process (The U.S. Army, 1992) :

- **National Command Authorities (NCA)** - The NCA consists of the President and the secretary of defense, their duly deputized alternates or successors. The term National Command Authorities is used to signify constitutional authority to direct the armed forces to execute military action. Both movement of troops and execution of military action must be authorized by the NCA.
- **Congress** - Congress, exercising its constitutional authority of advise and consent to the executive branch of government, may authorize partial mobilization. However, Congress must authorize full and total mobilization by either declaring war or a national emergency.
- **Chairman of the Joint Chiefs of Staff (CJCS)** - CJCS is the principal military advisor to the NCA and authorizes the President to place the CJCS in the communications chain of command. All communications between the NCA and the combatant commanders pass through the CJCS unless otherwise directed by the NCA. The CJCS has no executive authority to command combatant forces. However, the CJCS approves OPLANs and recommends the assignment of forces to combatant commands.
- **Department of the Army** - The Department of the Army (DA) is responsible for the assignment, preparation, and support of land forces necessary for employment across the operational continuum. Specifically, DA is responsible for recruiting, structuring, stationing, manning, equipping, supplying, training, mobilizing, modernizing, administering, organizing, and demobilizing Army forces.
- **The Army Reserve Personnel Center** - The Army Reserve Personnel Center (ARPERCEN), a field operating agency (FOA) of the Chief, Army Reserve, commands all soldiers in the individual ready reserve, standby reserve, and retired reserve. ARPERCEN manages and funds training for IRR soldiers. ARPERCEN maintains and distributes mobilization data on all individuals and issues mobilization orders.

- **United States Army Reserve** - USARC is a major subordinate command of FORSCOM.

USARC commands, controls, supports, and ensures wartime readiness of USAR forces in the United States, less units assigned to the Special Operations Command. USARC organizes and prepares its USAR units for mobilization, commitment for wartime, and other missions as required by the supporting CINC and as directed by FORSCOM. During mobilization, USARC prepares and cross-levels personnel and equipment within USARC until transfer of command authority.

- **The National Guard Bureau** - The National Guard Bureau (NGB) is both a staff and an operating agency. As a staff agency, NGB participates with Army and Air Force staffs in the development and coordination of programs pertaining to or affecting the National Guard. As an operating agency, the NGB formulates and administers the programs for the training, development, and maintenance of the Army and Air National Guard. NGB is the channel of communications between the departments concerned.

- **Major Army Commands** - The army in the field is divided into organizations called major Army commands. Each MACOM has the task of providing combat-ready land forces-the primary focus of the Army. Each has developed an organizational structure reflecting its environment, mission, and functions.

- **Army National Guard** - ARNG units are commanded by the governor of their particular state or territory and respond to state/territorial missions and emergencies at the governor's direction. ARNG units may be federalized and mobilized at the order of the President or Congress in case of a national emergency.

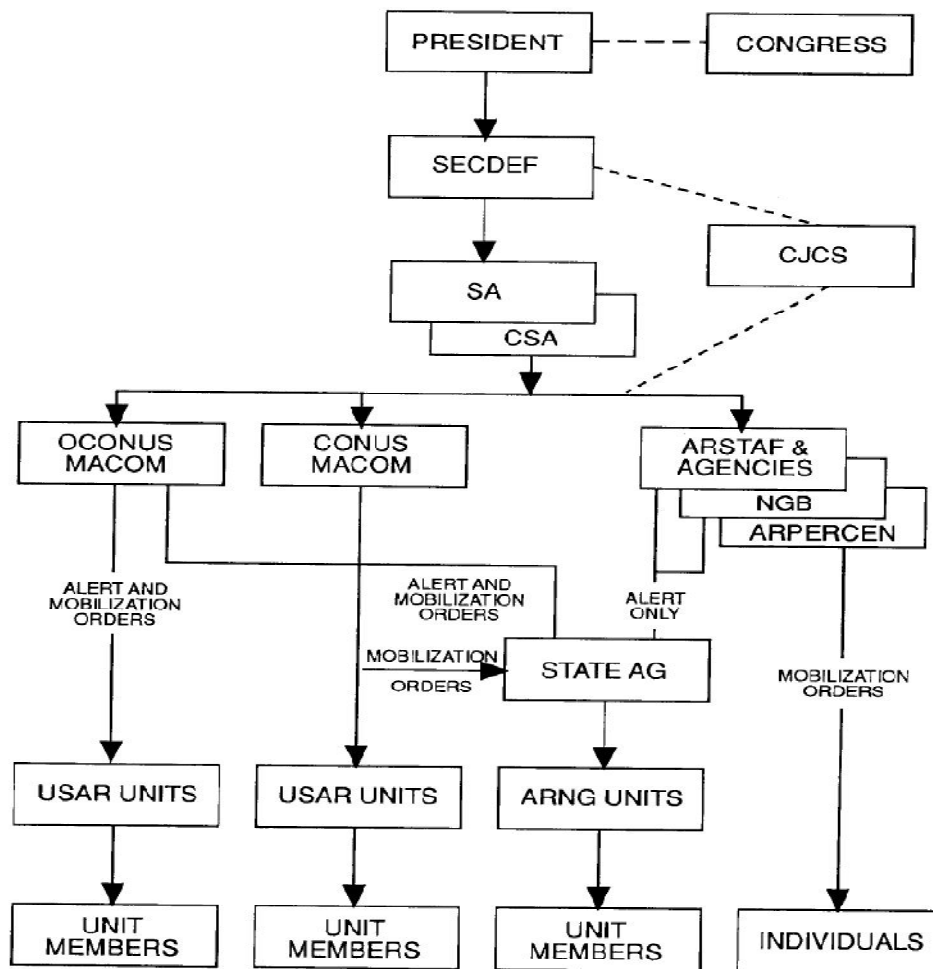


FIGURE 5. Mobilization notification system of the U.S.

B. Reserve Components

The U.S. DOD has 7 reserve components within its subordinate services. The Army has 2 reserve components - the U.S. Army Reserve and the Army National Guard (ARNG). The Air Force has the Air Force Reserve and the Air National Guard. The Navy has the Navy Reserves, the Marine Corps Reserve, and the Coast Guard Reserve, which will be controlled by the Navy in a war (Weitz, 2007).

According to the U.S. code (CULS, 2010), there are armed force in reserve forces. These are Ready Reserve, Standby Reserve, and Retired Reserves. Every Reservist should be included one of those armed force. Also, Inactive Army National Guard, Inactive Air National Guard and reservists, who are on the inactive status list, are in an inactive status.

Retired Reserves are in a retired status. All others are in an active status. Following shows the components of Reserve Forces (DOD, 1992) :

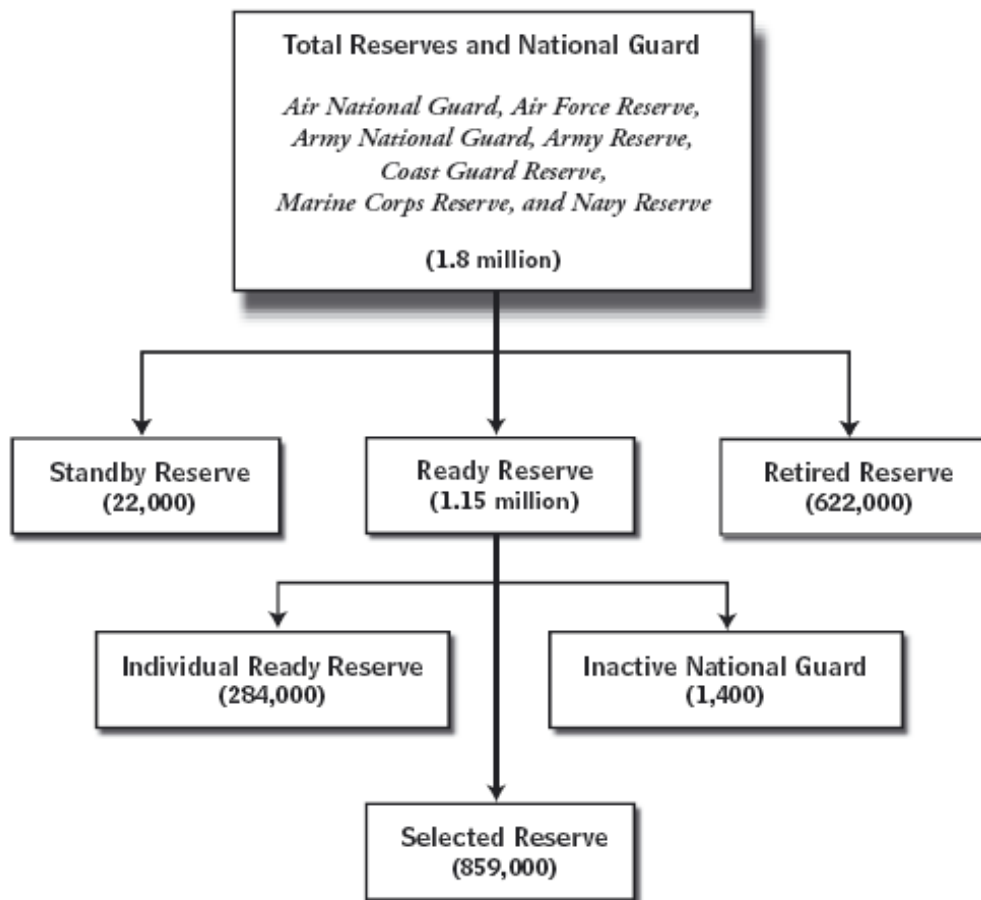


FIGURE 6. RESERVE COMPONENT OF THE U.S. (2005)

- **Ready Reserve** : Ready Reserve is comprised of military members of the Reserve and National Guard, organized in units, or as individuals, liable for recall to active duty to augment the active components in time of war or national emergency. The Ready Reserve consists of three reserve component subcategories - the Selected Reserve, the Individual Ready Reserve (IRR), and the Inactive National Guard. The authorized strength of the Ready Reserve is 2,900,000

- **Selected Reserves** : The Selected Reserve consists of those units and individuals within the Ready Reserve designated by their respective Services and approved by the Chairman, Joint Chiefs of Staff, as so essential to initial wartime missions that they have priority over all other Reserves. All Selected Reservists are in an active status. According to CBO

(2005), Members of the Selected Reserve participate in extended training for 2 weeks each year. This reserve is considered to be essential during the initial operations, and must be able to mobilize within 24 hours. They have a unit drill one weekend a month, and participate in extended training for 2 weeks each year.

- **Individual Mobilization Augmentees (IMA)** : Individual members of the Selected Reserves. Trained individuals pre-assigned to an active component, Selective Service System or Federal Emergency Management Agency (FEMA) organization's billet which must be filled on or shortly after mobilization. IMAs participate in training activities on a part-time basis with an active component unit in preparation for recall in a mobilization.

- **Individual Ready Reserve (IRR)** : The IRR consists of those Ready Reservists not in the Selected Reserves. Composed of Reserve Component members not assigned to a unit. Trained individuals who previously served in the active component or Selected Reserve. Members normally have a remaining military service obligation, are subject to mobilization, and might be ordered to limited involuntary active duty for training.

- **Conscripts** - The SECDEF recommends to the President and to Congress the institution of involuntary conscription of civilians for training and use as military personnel. A request for conscription authority is based on overall manpower requirements and is not tied to a particular level of mobilization. The decision to return to filling military manpower requirements with conscripts may be made at any level of GMR or may be made for other reasons.

- **Inactive National Guard** - Inactive National Guard (ING) are members of the ARNG in an inactive status. Although attached to a specific unit for administrative purposes, they are not part of the Selected Reserve and do not participate in unit activities. They are available for involuntary active duty with the declaration of partial mobilization or a higher level of mobilization. Whereas IRR soldiers are ordered to active duty as individuals, ING soldiers are ordered to active duty as members of the ARNG units to which they are attached.

- **Retired Reserve** - Retired soldiers who have completed 20 years of active duty are subject to recall to active duty at any time the Secretary of the Army determines a need. These retirees are a valuable source of trained manpower. They are available for most

military assignments and deployments subject to physical or other restrictions dictated by Department of the Army, as well as the replenishment of critical civilian positions. All other retirees are also available at the discretion of the SECDEF, but only after Congress has declared war or a national emergency.

- **Standby Reserve** - The Standby Reserve consists of officer and enlisted soldiers with or without a remaining military service obligation (MSO), but who have no statutory requirements for peacetime training, due to their temporary hardship or disability or who have been exempted for other reasons (CBO, 2005). Members of the Standby Reserve cannot be involuntarily ordered to active duty under less than a full mobilization (The U.S. Army, 1992).

4. Case Study : the Gulf War (1990-1991)

A. Background

Emerging as a dominant military power in the Gulf from the Iran-Iraq war, the Iraqi president, Saddam Hussein decided to be a premier leader of Arab countries. On August 2, 1990, Iraqi Forces attacked across the Kuwait border to fulfill their leader's political ambition. As it happened, the UNSC passed Resolution 660, The UNSC condemned the invasion as a infraction of the international law and demanded Iraqi forces to withdraw. In addition, Operations Desert Shield and Desert Storm (ODS/S) were started after the UNSC resolutions and refusal of the Iraqi government. On August 6, the UNSC passed Resolution 661. This contains sanctions over trade and financial embargo on Iraq and establishment of a special sanctions committee. However, on 29 November, as Iraq denied withdrawal, the UNSC allowed all members to use "all means necessary" to initiate resolutions if there's no withdrawal till 15 January. As a result, the U.S. -led Multinational Forces started surprise air assault on January 17, 1991. This was a start of the "Operation Desert Storm". Table 5 shows the comparison of military capabilities between the multinational forces and Iraqi forces (The U.S. DOD, 1992).

	Multinational Forces	Iraqi Forces
Manpower	780,000	1,000,000

	(The U.S. Forces : 520,000)	- Regular : 520,000 - Reserve : 480,000
Tanks	3,760	5,500
Armored Vehicle	3,800	7,498
Artillery	1,490	3,700
Helicopter Gunship	1,157	169
Vessel	230	60
Aircraft	1,750	800

TABLE 5. The comparison of military capability between the Multinational Forces and Iraq

B. Activities of the Reserve Forces during the Gulf War

Previously mentioned, the Gulf War was the first major test of Total Force Policy. According to Braun (1992), there are 3 reasons :

- It was ① The first large scale call-up and use of reserve forces since the Korean War
 ② The first major conflict under the DOD's Total Force Policy ③ The first call-up using the new authority to access reserves provided by the Congress in 1976.

In this war, 245,000 reservists were called up, including 106,000 reservists who served in South West Asia. Reserve forces played a pivotal role from the initial phase to redeployment of the forces. Their accomplishments were successful enough that proved the effectiveness of Total Force Policy.

C. Phases of Reserve Mobilization in ODS/S

According to Braun (1992), There were 3 phases in reserve mobilization during the Gulf War. ① the volunteer period (August 2-22, 1990), ② the period of Selected Reserve unit activation (August 23, 1990 - January 17, 1991), ③ the final period of partial mobilization (January 18, 1991 - end of the war). This was an incremental progress of reserve mobilization over 7 months.

1) The Volunteer Period (August 2-22, 1990)

On August 7, 1990, the U.S. president decided to deploy the U.S. forces to the South West Asia. However, to deploy massive forces overseas, tactical airlifts and strategic airlifts were importantly required. Also, the U.S. forces needed air refueling capability and maintenance skills for their safe flying. As the Air Reserve Component (ARC) had majority of these skills, they were called up in early August. They successfully completed 42% of the strategic airlift and 33% of the air refueling. They also carried 7 million tons of freights and 8,150 passengers (DOD, 1992). As the U.S. Air Force usually ordered the volunteer reservists to conduct airlift and refueling missions in peace-time, the ARC members didn't have any serious problems during the Gulf War.

On the ground, the Army reserve components had enormous skills to help with deploying forces. The Army reserve components had 71% of the military police companies and 69% of military intelligence units. Also, the reserve forces had majority of water purification and communications capabilities. Other reserve forces also greatly contributed to initial deployment phase, by providing logistics, medical, maintenance support, and linguist duties.

During this period, a lot of reservists tried to apply for volunteer duties. In the case of the Air Reserve Components (ARC), 25,000 reservists applied, however, only 12,000 volunteers were planned to be allowed. (DOD, 1992).

2) Selected Reserve Unit Period (August 22, 1990 - January 17, 1991)

The U.S. military leadership found that the U.S. forces needs the reserve forces ① to support the operations in the Gulf, ② to cover the security duties in homeland and other theaters while regular forces are deployed to the Gulf, ③ to conduct essential duties no longer conducted by the active forces. To fulfill this requirement, partial mobilization seemed to be appropriate measurement. The SECDEF requested it to the U.S. president, and the president executed Section 673b on August 22. However, he emphasized on mobilizing minimum essential augmentation forces. As a result, instead of using 200,000 call-up authority fully, totally 48,800 reservists were allowed to activated, including 25,000 from the ARNG and Army Reserve, 14,500 from the Air Force Reserve and Air National Guard, 6,300 from the U.S. Navy Reserve, and 3,000 from the U.S. Marine Corps Reserve. They were activated for only 90days (Braun, 1992).

3) The Second Call-up for Selected Reserve Units

As the sanctions didn't seem to be effective, the U. S. decided to deploy combat units to initiate offensive operations. On November 5, the U.S. Congress temporarily revised Section 673b to allow Selected Reserve combat units to be activated for 180days, which could be extended up to 180 days more. In addition, the U.S. president allowed the extension of the activation of the Selected Reserves up to 180 days. On the next day, the SECDEF raised the limit on the number of Selected Reserves to 125,000. Also, he allowed the U.S. Army to mobilize the ARNG combat brigades (Braun, 1992).

4) The third Call-up for Selected Reserve Units

From August to November, 1990, the UNSC passed Resolution 678, which allowed the members to use of "all necessary means" to expel the Iraqi forces from Kuwait, if Iraq denies withdrawal until January 15, 1991. Following this, the SECDEF initiated a third call-up on December 1. As a result, 188,000 reservists were mobilized, including 115,000 ground forces, 20,000 airmen, 30,000 sailors, 23,000 marines. All of these units were called for 180 days (Braun, 1992).

5) The Partial Mobilization Period(After January 18, 1991)

The last phase of mobilization was the partial mobilization after January 18, 1991. As the Iraqi government denied withdrawing from Kuwait, the U.S. government decided to initiate attack.

After the U.S. initiated air attack, on January 18, the U.S. president allowed partial mobilization, which allows the mobilization of the Ready Reserve, including the Selected Reserve and the IRR. The SECDEF authorized mobilization of 360,000 members of the Ready Reserve for 1 year. 231,000 reservists were mobilized, including over 20,000 members from the IRR (Braun, 1992).

D. Readiness of Reserve Forces

A lot of measurements tested the readiness of reserve forces before their deployment. Generally, their readiness level was high enough to fulfill their duties in the Gulf War. Also,

due to their participation joint and combined arms military exercises, such as Team Spirit, their integration with regular forces was effective (DOD, 1992).

According to Braun (1992), a unit evaluation system called “Status of Resources and Training System (SORTS)” provided a criteria for selecting appropriate units to be deployed :

The most quantitative indicator in the “complex evaluation” of a unit’s ability to go to war is the “C-rating” under SORTS. This was the initial consideration in selection of units for ODS/S. The C-rating reflect the amount and condition of personnel and equipment resources a unit possesses and the status of training. An overall rating characterizes the proportion of a wartime mission that the reporting unit can perform.

According to DOD (1992), the readiness level of reserve forces was appropriate to fulfill their duties. About 70% of reserve forces had C-3 rating or higher, which means that at least, they could take major portions of war-time missions. Before their deployment, a reported SORTS showed that the readiness of CS/CSS reserve force units were as high as similar units in regular forces. In the case of the Air Reserve and the Selected Marine Corps Reserve (SMCR), they showed great readiness. To maintain high readiness of the Air Reserve, the U.S. Air Force provided a bulk of funds, equipments and intensive trainings to the Air Reserves. As a result of this effort, they were ready to deploy in less than 72 hours.

The SMCR also was provided with enormous investment. Additionally, due to their high standard of training level, which was same as regular forces, they showed high readiness. Approximately 60 % of the SMCR was selected. However, only about 15 % of the Selected Reserve of other Services was appropriate to be deployed.

E. Performance during the Gulf War

Reserve forces contributed to the ODS/S greatly. They reinforced the capabilities of the active forces and performed crucial roles in overall progress of the Gulf War.

During the Gulf War, the Air Reserve refueled more than 22,000 aircrafts. Also, they carried more than 525,000 tons of equipments, and approximately 330,000 passengers. The Navy mainly used their Reserve forces for CS/CSS duties, such as harbor and port security, construction of billeting place, and medical service. Combat units of reserve forces also generally performed their duties successfully. The 142nd Field Artillery (FA) Brigade,

ARNG, moved 350 kilometers in four days and fired 422 tons of canon balls, which was one of the largest ammunition expenditure by a FA brigade during this operation. In the case of B company, 4th Tank Battalion of the Marine Corps Reserve combat units destroyed 30 Iraqi armored vehicles. After the cease fire on 28 February, more than 105,000 reserve forces were remained in the theater. Table 6 shows the number of personnel of each reserve component at that point (DOD, 1992).

Type	Number of Personnel
Army Reserve National Guard	37,692
United States Army Reserve	35,158
United States Navy Reserve	6,625
United States Marine Corps Reserve	13,066
Air Reserve Component	10,800
United States Coast Guard Reserve	281

TABLE 6. The number of participants by reserve components

VI. CONCLUSION

In previous chapters, this paper analyzed the reserve mobilization of Israel and the U.S. and case studies of wars they experienced. In these wars, their reserve forces showed high readiness and responsiveness. Considering that their effectiveness during the war time came from their accumulated efforts and experiences in peace-time, military planners should put much effort on refining their reserve mobilization system in peace-time. In formative period, the military planners of these countries tried to find out a reserve mobilization model, which fits for characteristics of their countries. After they found it, they invested enormous budget and efforts to increase the readiness and responsiveness of reserve forces.

Considering that the Korean reserve mobilization system had faced a lot of problems in readiness and responsiveness, the South Korean military planners should revise its reserve mobilization system. In this sense, reserve mobilization systems of two countries provide proper implications to South Korea. However, due to different environment, South Korean military planners should carefully approach to implications. Reserve mobilization is one of the most civil-related tasks of the Army. Thus, they should consider the economic and social aspects.

In the case of the U.S. reserve mobilization system, it assumes that the main conflict area is outside its homeland. As a result, the U.S. assumes more available time than Israel and South Korea. For example, the U.S. DOD assigned a lot of initial CS/CSS duties to the reserve forces. If the Korean government follows this, it will cause serious disorders in the initial phase of war, because the combat environment of the Korean peninsula is much imminent due to its lack of strategic depth.

On the other hand, Israel and South Korea assumes that they had enemies which threatened their survival. Also, both Israel and South Korea have similar geographic and strategic environment, which requires rapid mobilization of ready-to-fight reserve forces to augment the regular forces. However, it is questionable that whether the South Korean military planners can change its reserve mobilization system like a garrison state, because this will be hard to gather national will from the Korean people, who already experienced oppressive military dictatorship.. Thus, the Korean government should selectively accept the implications from these countries. Followings are recommendable implications for the South Korean Army.

A. Reinforcement Period : Upgrade of Equipment, Programs to Increase Readiness

Basically, to build strong forces, military planners should put much budget on them and initiate effective programs to increase their readiness. Also, when these are concentrated, the effectiveness of these efforts will be multiplied.

Looking through the history of Israeli and the U.S. reserve forces, they both experienced “Significant reinforcement period”. As mentioned above, during 1956 – 1967, Israel had a reinforcement period of the reserve forces after the Suez War. In this period, with Rabin’s strong will, Israel put much effort on increasing the readiness of reserve forces by implementing systematic and intensive training and upgrading their combat equipments.

The U.S. also had similar experience. During 1970s and 1980s, the U.S. DOD initiated a lot of programs to increase the readiness of the reserve forces. Although the U.S. DOD tried to reduce the number of the U.S. forces, the U.S. reserve forces kept its bulk. Additionally, the U.S government recognized the reserve forces as cost-effective forces, the U.S. government increased the budget on them, modernized their equipment, and improved their equipment supply. Also, their systematic programs to increase combat ability of reserve forces played a pivotal role to increase the readiness of them. These efforts were successful, and proved its effectiveness during the Gulf War.

In the case of South Korea, the budget on reserve forces only took about 0.4% of total defense budget (KIMA²⁰, 2007), and their equipments are insufficient and too old to use. In this sense, those efforts of two countries provides good examples for the South Korean Army.

B. Quick Response Reserve Forces

Both the U.S. and Israel had a designated quick response reserve forces, which will play a pivotal role in the initial phase of emergency. The U.S. has Ready Reserves, which must be able to mobilize within 24 hours. To maintain their high readiness, they should keep a high degree of fitness and suitable military uniform. They are regarded as an essential force in the initial phase of emergency. Also, in Israel, the IAF plays as a quick response reserve

²⁰ Korea Institute for Military Affairs.

force in initial phase of war. The IAF guarantees the rapid mobilization of reserve forces by acquiring air superiority. Until the reserve forces complete their augmentation, IAF should cover the less-ready reserve forces from the enemies for their orderly mobilization. Thus, the Israeli government requires the IAF to mobilize within hours after they receive call-up orders.

The South Korea doesn't have quick response reserve forces. However, the necessity of them is quite remarkable for South Korea. The 70% of North Korean forces placed near borders, and the North Korean Army has a bulk of special force. If the war starts between South Korea and North Korea, the North Korean Army is expected to quickly concentrate its forward units to break through the front line, while a bulk of special force tries to infiltrate into South Korea and harass the rear area. Also, as the North Korea pursues the lightning war, it will try to make rapid progress. Thus, the South Korean Army needs a bulk of strategic reserves to cope with these threats. In this sense, quick response reserve forces with high readiness will be an excellent source for strategic reserves. However, if it doesn't have enough readiness, this will be just a "phantom army".

C. Intensive Training

The reserve forces of both countries are famous for their intensive training. In the case of Israel, each reservist should take 38 - 55 days of training every year. Additionally, they participate in military operations every 3 years. The U.S. reserve forces take 192 hours of collective training and 14 days of mobilization training in a year. Also, they participate in overseas large-scale joint military trainings with foreign countries, such as 'Foal Eagle' exercise with South Korean forces. These intensive trainings greatly contributed to force their high readiness.

If the South Korean government tries to increase the training time of reserve forces significantly to catch up with Israel and the U.S. , the South Korean government will face a strong opposition. Due to high economic pressure in South Korea society, the reserve forces might not want to participate in intensive training. Their absence from work will be a burden on them. Thus, the South Korean government should provide reasonable economic and social compensation package. Also, it should try to derive a national consent.

Rome soldiers and French soldiers under Napoleon had something in common. That was self-confidence that they were put under control of the strongest army in the world. One of the most effective measures that these armies became the strongest was maintaining high readiness in peace time. Also, this readiness came from effective military system. Thus, if South Korean military planners properly initiate programs to increase the readiness of reserve forces, their ability and importance will be much higher. Also, as the reserve forces became stronger, their willingness will be much higher. This will be the best way to increase readiness and responsiveness of South Korean reserve forces.

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