

**The developmental direction for logistics technical manpower specialization:
Acquisition and development system based on the manpower management**

By

Jae-Moo 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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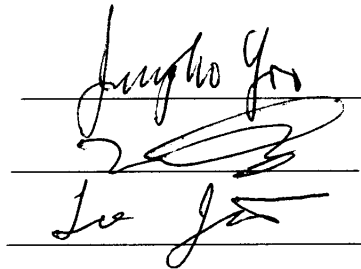
MASTER OF PUBLIC POLICY

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Approval as of November 11th, 2011

ABSTRACT

The Developmental Direction for Logistics Technical Manpower Specialization: Acquisition and Development System Based on the Manpower management

Smart weapon and equipment are determining factor to win in the future war, and thus the demand of logistics technical manpower for operating and maintaining is expected to grow. However, acquisition and development system for them in Korea Army have many problems.

The acquisition system of Korea Army has focused quantitative expansion instead of qualitative improvement. As a result, a terrible minus of logistics technical manpower was easily occurred. In addition, the budget of development system for technical manpower decreased because of the sinking of the Cheo-nan ship and artillery shelling of Yeonpyeong island. Consequently, the interest for logistics technical manpower dropped.

To tackle these problems, the Korea Army needs to reform the structure of technical manpower. Second, it is important that setting more practical incentives compared with private sector. Third, the opportunity of civil education regarding technical field for warrant officer and noncommissioned officer has to widen from now on. Fourth, personnel guide book for noncom has to suggest that specific standard regarding technical certification.

By

Jae-Moo Kim

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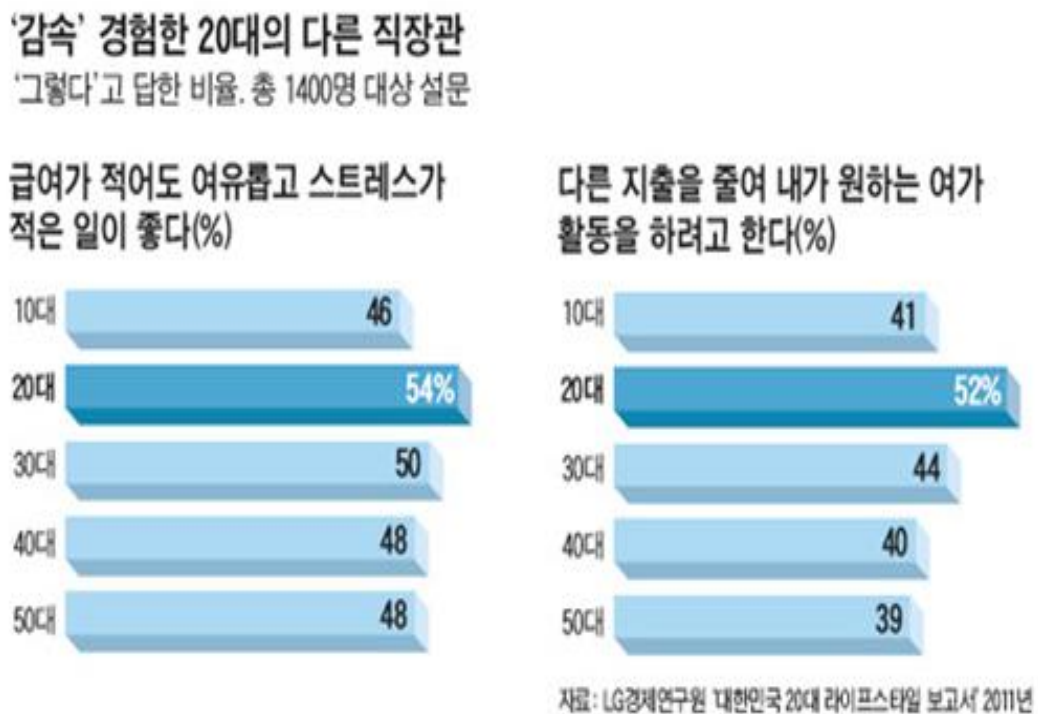
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CHAPTER I

INTRODUCTION

Recently, people worried about indifference of younger generation regarding national defense. In addition, major news media reported the decline of applying ratio about an officer¹ and noncom² (professional soldier). Actually, some younger generations think that soldiers (including compulsory military service) are very dangerous, toilsome vocation and time-wasting. This value of younger generations is related to their lifestyle. According to figure 1-1, the lifestyle of the young people shows that they want to get a relaxed, less stressful job. Therefore, it is natural that the young people have no interest about professional soldiers.

< Fig 1-1 lifestyle of the young people in twenty >



¹ Someone who is in a position of authority in the army, navy etc(second lieutenant), Longman dictionary

² A non-commissioned officer in the armed forces is someone with a rank such as corporal or sergeant who used to have a lower rank, rather than an officer of higher rank who has been given a commission, Collins Cobuild Advanced Learner's English Dictionary

According to table 1-1, the number of applicant who wants to be a military officer has decreased gradually since 2005. The main reasons of decline have something to do with a lifestyle change and reduction of the length of military service. Former president announced that the length of military service would be reduced from two years to eighteen month in 2007. Consequently, president's announcement accelerated decreasing of competition rate of professional soldier : ROTC³ and OCS⁴.

< Table 1-1 Competition rate of ROTC and OCS >

	2005	2006	2007	2008	2009
ROTC	3.4:1	3.3:1	2.7:1	2.5:1	2.0:1
OCS	2.65:1	2.6:1	2.5:1	1.2:1	0.7:1

Source : <http://www.seoul.co.kr>

Today, every country tries to develop state of the art weapon system for national security. As the development of weapon system, especially, the military needs more technical manpower for manipulate it. In general, technical manpower in the army has something to do with logistics field. From logistics field point of view, the officer is charged with the task of logistics policy making and management. In contrast, the warrant officer⁵, noncom and enlisted man are charge with the task of maintenance and overhaul. However, reduction of length of military service, changing of lifestyle and low birthrate make shortage problem of technical manpower. (table1-2)

³ Reserve Officers' Training Corps

⁴ Officer Candidate School, www.army.com

⁵ A warrant officer is a person in the army, the air force, or the marines who is above the rank of sergeant and below the rank of lieutenant. In the United States Navy, a warrant officer is above the rank of petty officer and below the rank of ensign, Collins Advanced Learner's English Dictionary

< Table 1-2 Shrinking trend of maintenance manpower >

Main equipment(level) ⁶	9,742	10,698	12,313
Maintenance manpower	20,216	20,011	19,533
Years	1984	1994	2004

Source : Development plan of total maintenance, the staff of army logistics 2007, p6

To solve this problem, the Korea Army has been establishing policy regarding manpower shortage problem since 2004. However, the Army policy could not easily solve it because of institutional problem (acquisition and development system). One of the main reasons is that the Korea Army simply tried to increase the number of manpower instead of improvement of manpower quality in particular. Consequently, the vicious circle of manpower shortage has been repeating ; “Mass acquisition → Mass loss”.

The purpose of this paper is to analyze the military human resource management (“HRM”) in logistics technical field : acquisition and development system. So, this paper will suggest alternatives to improve manpower shortage problem through finding out the acquisition and development system of Korea and U.S Army.

This paper will use the vocabulary (manpower and human resource) as a same meaning. In addition, this paper sets limit to army because of operational differences between army and other military part – navy and air force.

⁶ Artillery, tank, armored vehicle, special weapon

Chapter II

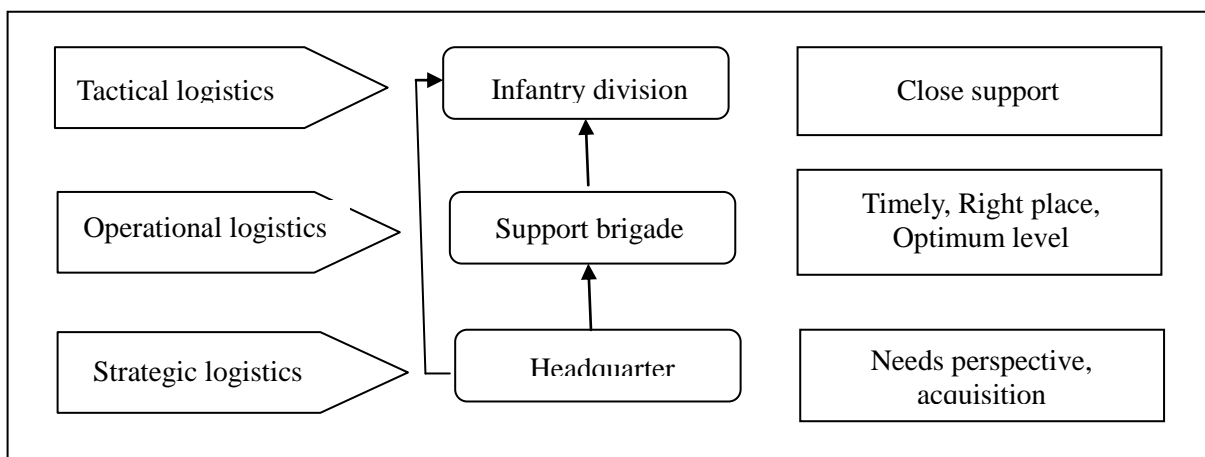
2.1 BACKGROUND OF MILITARY LOGISTICS

*"Logistics is the application of time and space factors to war. It is the economics of warfare, and it comprises, in the broadest sense, the three big M's of warfare-materiel, movement, and maintenance. If international politics is the 'art of the possible,' and war is its instrument, logistics is the art of defining and extending the possible."*⁷

- Dr. James A. Huston

Definition of military logistics means the activities which are related to persons (soldiers), goods (supplies), facility, capital, service. Therefore, operating the logistics support sources is called logistics support system.⁸ In general, the logistics supports are divided by three types – strategic, operational and tactical support.⁹ These three types are applied to all the logistics tasks.

< Fig 2-1 A logistics support system of each unit >



Source : The public books of logistics. P. 35(Army headquarters, 2009)

⁷ *The Sinews of War: Army Logistics 1775–953*, 2004

⁸ Jae-kwan Kim. *Considering contemporary history of logistics support*. 2010

⁹ The public books of logistics. P. 35(Army headquarters, 2009)

- Strategic support : Logistics headquarter prepares ability of logistics support and secures enduring ability of battle.
- Operational support : Logistics support brigade conciliates between logistics support action and element.
- Tactical support : A combat unit or special task force fulfills the propelled supply and close repair support.(battalion)

Military experts say that the military logistics can decide success of the war or military operation. Another military expert argues that the military logistics captures 50% of the military operation. For these reasons, U.S, China and other military power boosted national defense budget of maintenance and procurement parts in military logistics field. The figure 2-2 illustrates the U.S defense spending of maintenance and procurement parts.

< Fig 2-2 U.S defense spending in 2011 >

Department of Defense (in millions of dollars)			
	Actual 2009	Estimate	
		2010	2011
Spending			
Discretionary Base budget authority:			
Operation and Maintenance	179,103	184,488	200,248
Procurement	100,886	104,803	112,873
Research, Development, Test and Evaluation	78,392	83,897	78,181
Military Construction	21,898	21,022	16,924
Family Housing	3,163	2,259	1,822
Revolving and Management Funds	3,155	3,118	2,380
Subtotal, Discretionary Base budget authority	513,222	530,755	548,919
Discretionary Overseas Contingency Operations (OCO) budget authority:			
Enacted	145,741	129,648	—
Requested (2011 includes \$254 million in U.S. Coast Guard funding)	—	33,014	159,336
Subtotal, Discretionary OCO budget authority	145,741	162,662	159,336
Total, Discretionary budget authority (Base and OCO)	658,963	693,417	708,255
Memorandum: Budget authority from American Recovery and Reinvestment Act	7,435	—	—
Total, Discretionary Outlays (Base and OCO)	633,797	684,436	714,428
Memorandum: Outlays from American Recovery and Reinvestment Act	238	3,991	2,491
Mandatory Outlays:			
Existing law	2,740	3,605	3,959
Legislative proposal	—	—	408
Total, Mandatory outlays	2,740	3,605	4,367
Total, Outlays	636,537	688,041	718,795

Source : Department of defense in U.S(<http://www.gpoaccess.gov/usbudget>)

In line with this thinking, the Korea ministry of national defense also increased budget of maintenance and procurement in logistics field with these as momentums – sinking of the Cheonan ship and bombardment of the Yeonpyeong island.

< Table 2-1 Budget of logistics support part in Korea Ministry of national defense >

Classification	‘2010 (Hundred million)	‘2011 (Hundred million)	Variation	%
Total	35,557	37,345	1,788	5.0
Maintenance/Support component	20,550	21,375	825	4.0
Acquisition of equipment	2,804	3,206	402	14.3
Acquisition of supplies	1,358	1,553	195	14.4
Procurement of fuel	7,473	7,543	70	0.9
Transportation / Disaster management	787	810	23	2.9
Ammunition	2,585	2,858	273	10.6

Source : Ministry of national defense (<http://www.mnd.go.kr>)

Meanwhile, it is important that finding out the history of the Korea Army logistics system for more specific understanding of army logistics system. The Korea army logistics support system has been imitated the U.S system. As the Korea military mainly relied on the U.S military, the logistics support system could not develop independently. In 1970s the Korea military could carry forward plans which were a self-centered logistics support system. The purposes of those plans were efficient management of national defense resources and correspondence of North Korea's threat.¹⁰

In 1980s the logistics support system tried to reform the integrated support system. So, the Army headquarters integrated three parts weapon, logistics, transportation – and coordinated every war suppliers.¹¹ Since then, the Korean army adopted tri-service (Army, Air force, Navy) common logistics support system¹². (Figure 2-3)

After 1990s, the Korea military tried to develop the national defense integrated logistics support system but, there were lacks of research on the logistics system. As the military operation-oriented system, the Korea Army could not concern about logistics field.

< Table 2-2 Transition process of logistics support system >

Classification	Transition process
Each branch of the military service	<ul style="list-style-type: none"> ◦ Foundation of the army(1945~1959) - Applying U.S support system ◦ Modifying period(1960~1970) : Foundation of Logistics base headquarter ◦ Supplementing period(1971~1981) : Foundation of logistics support headquarter
Functional support system	<ul style="list-style-type: none"> ◦ Turning point(1982~1991) : Functional support system ◦ Development period(1992~present)

Source : *Material for the logistics development seminar*, 2005, army logistics headquarter

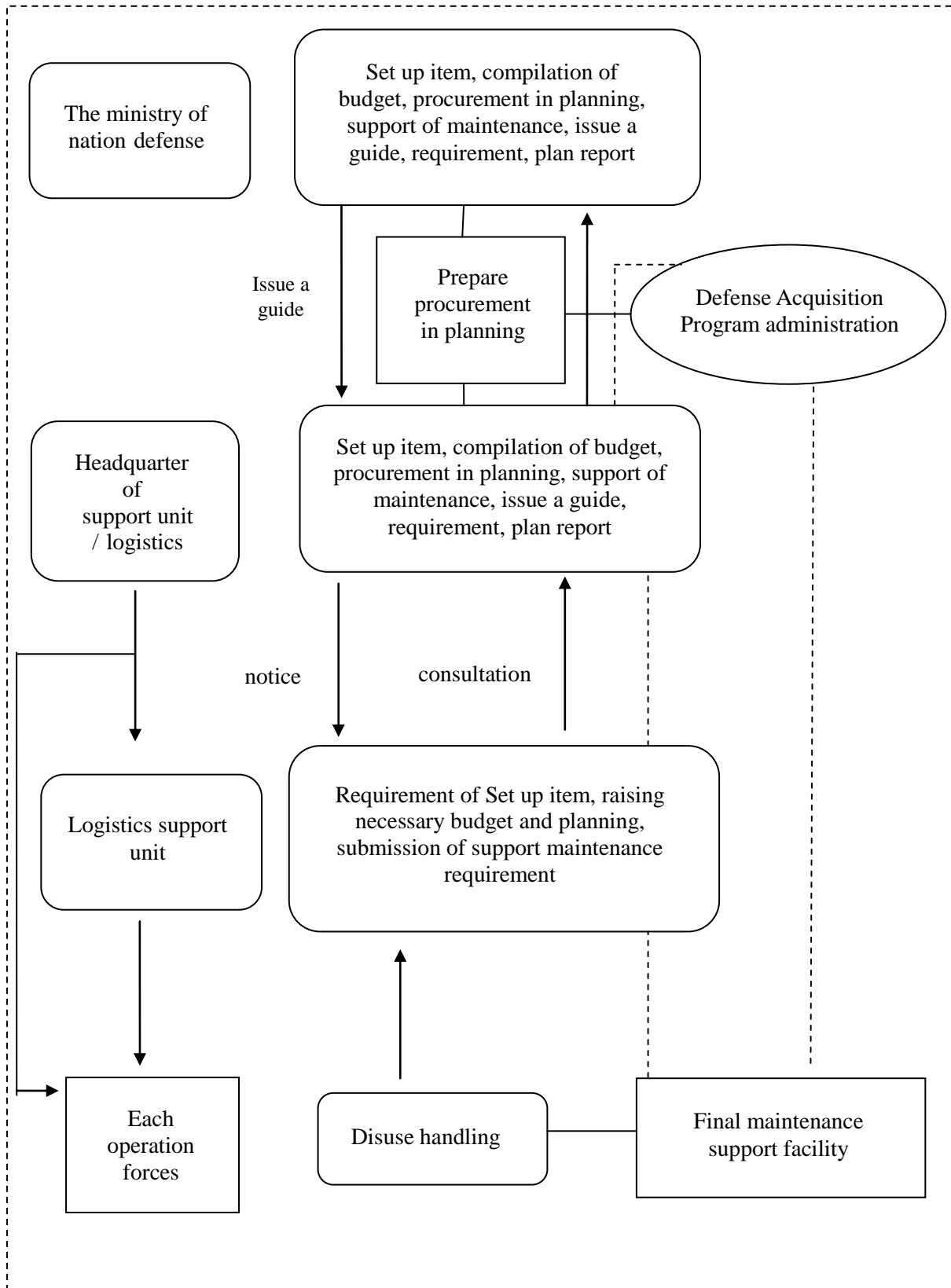
¹⁰ *The history of military compilation a research station The history of the founding of the armed forces*, 2002, p 155-156

¹¹ Dae-Jin Lee, *Development way of logistics support system*, 2005, p22

¹² “Tri-service common logistics support system means a competent singular force takes charge of supply and support maintenance in common item”

Kwang-Ho Yoon, *A study on the development for the Korean logistics support system*, 2000, p19

<Fig 2-3 Tri-service common logistics support system>



Source : A field manual 4-15 Battle duty support, Army Headquarter 2007. P2.-23

2.2 Manpower and relation between HRM and army

A. The meaning of manpower

In general, manpower structure in military is classified into four parts which are officer, warrant officer, noncom and enlisted man. More specifically, the logistics manpower- quartermaster, ordnance, and transportation branch- means the soldiers who have the skill related to management, maintenance and support of weapon and equipment system.¹³ Logistics manpower, especially, is required basic knowledge regarding weapon system and equipment for operating it. Therefore, this paper will mainly focus the technical manpower regarding quartermaster and ordnance branch because of extensive sphere of business.

As you see the chapter I , the officer is charged with the task of logistics policy making and management. On the other hand, the warrant officer, noncom and enlisted man are charge with the task of maintenance and support of weapon system and equipment. Enlisted man, especially, comprises a large proportion of logistics manpower because of conscription system in the division of Korea into South and North and a national defense budget problem.

< Table 2-3 Ratio of officer, noncom, enlisted man in comparison developed countries >

Ratio (%)	Total	Army	Navy	Air force
Korea	10:15:75	9:11:80	11:32:57	14:31:55
U.S	15:41:44	15:41:44	14:40:46	20:43:37
U.K	17:40:43	17:36:50	19:45:34	21:44:35
German	15:51:38	10:47:43	15:59:26	12:58:28
Japan	15:51:34	13:48:38	20:55:26	19:56:25
France	11:47:42	12:36:52	11:66:23	11:59:30

Source : Kwanho Cho, *Development direction of manpower structure for successive national defense reformation*, 2006, p3

¹³ Quartermaster branch performs related to support meals, supplies and oil. Ordnance branch performs related to keep, transport, support and check the weapon, ammunition and explosion.

According to table 2-3, the ratio of enlisted man in the Korean army is great importance in comparison other countries. The main reasons are difference of conscription system in each country and a national defense budget. Nonetheless, even more important is the fact that the manpower structure of Korea Army has to change from enlisted manpower oriented to executive oriented structure. The enlisted man cannot fully perform their ability under the current military service regulation (military service under 2 years). Therefore, the Korea Army has to cultivate the long-term career soldiers who have skills regarding smart weapon system and equipment.

< Table 2-4 Ratio of conscript and recruit soldiers in 2005 >

Classification	Army	Navy/Marine	Air force
Conscript	62.6%		
Recruit	37.4%	100%	100%
The number of acquisition soldiers	225,000	18,000	14,500

※ The number of acquisition soldiers is rough figures.

Source : Sung-Woo Kim, *A study on analysis of acquisition program of Human strength*, p207, 2008

However, it is difficult that reforming the manpower structure of army from enlisted man to executive because of securing budget. So, the Korea Army has to find other alternatives for acquiring more excellent technical manpower. In general, some military experts say that recruit soldiers have better ability than conscript soldiers. According to table 2-4, the conscript soldiers take large portion of manpower structure in Korea Army. In contrast, the Navy and Air force are comprised of recruit soldiers (100%), so they can acquire more excellent manpower. Therefore, the Korea Army has to increase the number of recruit soldier for acquiring more professional manpower. More details will be treated next chapter.

B. Meaning of HRM (Human resource management) in Army

The HRM means that the strategy of maximizing corporate profits through obtaining workforce, stabilizing work ethic and satisfying workers.¹⁴ The HRM focuses on the accurate identification of human resource requirements (in terms of both quantity and quality) necessary to perform specific tasks and upon the organization and position structure in which they will be most efficiently and economically used.

The HRM in Army means the systematic process which is related to recruit, train, assign, perform, evaluate, retain, and separate aimed at military manpower.¹⁵ Every function performs important role in Army, but recruiting and training are more significant than other functions in future military environment. In fact, the recruiting and training (development) system of Army has been consistently supplemented. However, it was shown that there were many problems related to these systems. Therefore, the acquisition and development system of technical manpower needs to improve for coping with future war.

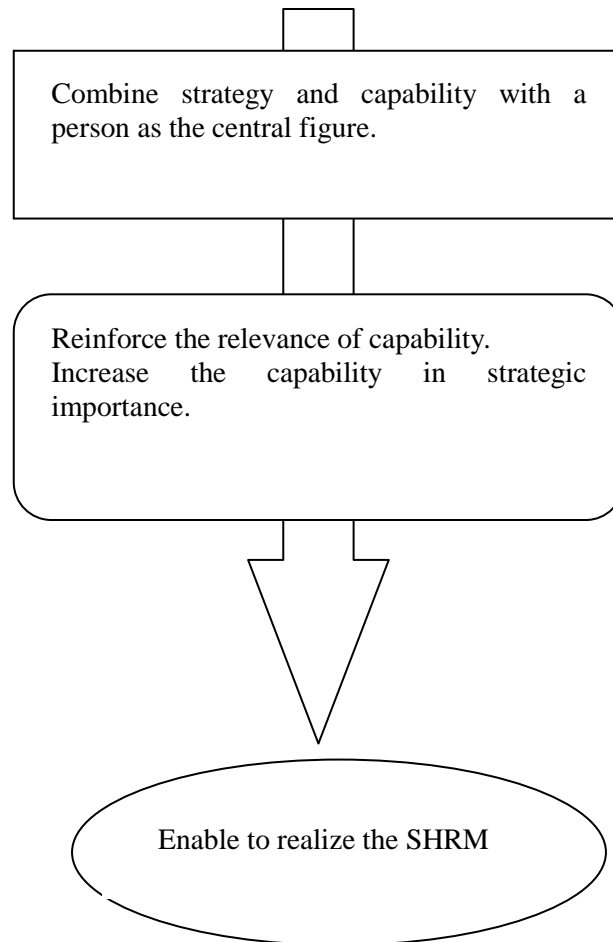
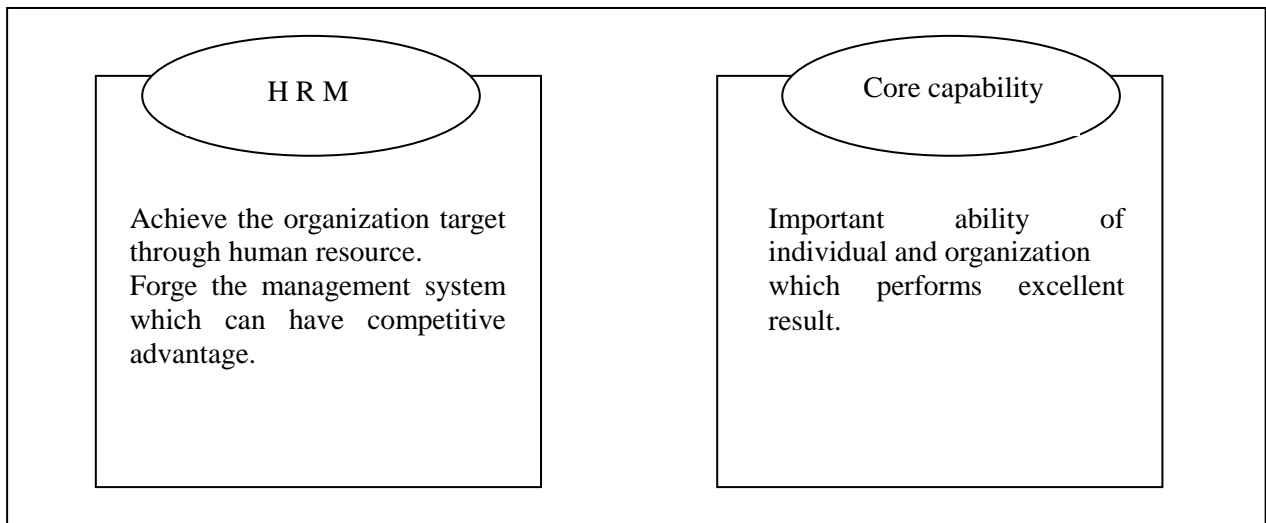
Recently, military experts suggested that the Army needs to consider the SHRM (Strategic Human Resource Management). The SHRM means the process of efficient achieving a strategic target in HRM.¹⁶ According to figure 2-4, the logistics technical field needs more specialized management. However, concerning about managing system for technical manpower is insufficient until now. As a result, the Korea Army mainly focused on short-term application of technical manpower. In addition, the incentive system for technical manpower is still in its primary stage. Therefore, the Army needs to anticipate the long period demand for technical manpower and train them.

¹⁴ *The study of human resource in Korean corporate* 1996, p3-4

¹⁵ Kwangpyo Choi, *Introduction of human resource management in U.S navy*, KIDA, 2003, P 3

¹⁶ Inkook Kim, *Building direction of strategic human resource management*, 2011, p2

< Fig 2-4 Concept model of SHRM based on capability >



Source : Inkook Kim, *Building direction of strategic human resource management*, 2011, p2

C. Function and purpose of HRM in army

Functions of the HRM are management and operation. First, the management function is divided into three parts which are planning, organizing, directing and controlling. Second, the operation function is divided into six parts which are procuring, developing, compensating, combining, maintaining and changing jobs.¹⁷

< Table 2-5 Basic Human Resource Strategy >

Human Resource Principle	Specific Principle
Build and implement an HR strategy	Develop a shared philosophy for managing people. Build systems and practices to implement the philosophy.
Hire right people	Know what you want. Be selective.
Keep them	Reward well. Protect jobs. Promote from within. Share the wealth.
Invest in them	Invest in learning. Create development. Opportunities.
Empower them	Provide information and support. Encourage autonomy and participation. Redesign work. Foster self managing team. Promote egalitarianism.
Promote diversity	Be explicit and consistent about the organization's diversity philosophy. Hold managers accountable.

Source : Lee Bolman and Terrence Deal, *Reframing organizations ; artistry, choice and leadership*, ch7 p142

¹⁷ The study of human resource management in China through comparing country by country 2006, p 16-18

As you see the table 2-5, the most important things of HRM in army are “hire right people” and “invest in them”. “Hire right people” means organization knows the kinds of people they want and hire those who fit the mold. As the products, markets and organizations become more complex, the requirement of people’s specialized knowledge and skills will increase. So, the organization has to invest consistently for training excellent manpower. Unless the organization invest sufficiently to employee, undertrained workers will harm organizations in many ways : shoddy quality, poor service, higher costs and costly mistake.

As mentioned earlier, the objects of HRM in army are to acquire and develop the appropriate person for national security missions. In other words, purpose of the HRM in logistics technical field is to promote logistics technical experts.

< Table 2-6 Change of paradigm in military human resource management >

Classification	Existing paradigm	Innovative paradigm
Philosophy of Management	Troops oriented Maintain fighting power	Mission oriented Secure potential fighting power
Procurement	Secure total manpower	Secure small number of best player
Promotion and application	Generalist oriented Off-JT oriented	Specialist oriented Emphasize OJT and self-development
Organizational structure	Efficiency oriented A top-down management	Effect oriented Delegate authority and responsibility
Remuneration	Seniority system	Reward according to ability
Organizational culture	Closed system Hierarchical	Open system Respect for man’s dignity

Source : Joongkeun Jin, *Development of military human resource management in reform era of national defense*,2008, p33

Table 2-6 illustrates that the paradigm (purpose) in military HRM has been changing.

Procurement of manpower, especially, has to change from total manpower to small number of best player. In the past, the Korea Army tried to acquire mass manpower for using in a short-period of time. As a result, the Korea Army suffered great hardship of securing more excellent manpower. For example, the maintenance fields of weapon and equipment needed more trained worker, but the Korea Army depended on the technical enlisted man instead of training technical executives. As a result, ability of executives could not improve and the training-cost for enlisted man increased. To tackle these problems, the manpower structure of technical field has to change from enlisted oriented to executives oriented. And then, the Army has to give them more chance for training : self-development and on the job training in private company.

Chapter III

Current state of HRM in logistics technical field of Korea Army

3.1 The meaning of acquisition and development system

Purpose of the HRM in logistics technical field is improvement of professionalism. In other words, it means that logistics technical manpower - manipulates arms of precision, war supplies and equipment - is managed by recruiting, training, appointment system. So, this paper will analyze problem of the recruitment and development (training) system in Korea Army and suggest solution to settle it.

The acquisition (recruiting) means activity of reinforcing manpower when the army needs new recruit.¹⁸ For example, recruiting system of noncom has many application ways in Korea Army. The table 3-1 illustrates that the noncoms are selected by five acquisition system. Some experts say that the recruiting system of army is very complex than other military parts, so applicants who want to apply noncom cannot easily understand it. As a result, it can make deficiency problem of the excellent manpower in Army.

< Table 3-1 Component ratio of acquiring noncom in 2005 >

Classification	Army	Navy	Marine	Air force
Select from civilian	43%	97%	92%	78%
Select from active duty enlisted man	30%	3%	8%	-
Air force aviation science high school	-	-	-	22%
Select from the reserves	7%	-	-	-
Select from specialized colleges	5%	-	-	-
Special forces	14%	-	-	-
The number of people	8,400	1,100	500	1,000

Source : *Study on the acquisition plan of outstanding noncom*, 2008, p263

¹⁸ Military personnel operating executive guide book, army headquarter, 1997

Anyway, noncom and enlisted man are reclassified by military occupational specialty (MOS)¹⁹ regarding the aptitude test or a major field of study in university. However, the classification system is mainly decided by supply and demand of troops. (especially conscript soldiers) It means the enlisted man who has an aptitude or academic degree regarding logistics technical field cannot serve as a technical manpower. As a result, logistics technical manpower cannot be put the right man in the right place. Therefore, increasing the number of manpower who is selected from technical college and high-school (Meister or technical high-school) can be very important acquisition alternative. This parts will treat more specifically chapter IV.

In general, the development system means military training (education). The training system of Korea Army is separated into three parts which are school education, unit education and other education. First, the school education means the training is provided by a military school. The kinds of military school are infantry school, artillery school and so on. Second, the unit education denotes the concept of military trainings which are individual combat training and troops combat training. For example, an individual combat training, platoon combat training and company combat training are kind of unit education. The other education means commissioned education in civil organization and job training. This paper will focus the school and civil organization education - commissioned education - of logistics technical manpower.

According to table 3-2, the commissioned education is divided into four parts. First, the professional degree education is the program for getting a master and doctorate in a private university and National Defense University. Second, the abroad military education is

¹⁹ A military occupational specialty is the term used to identify an area of military job activities covering either one duty assignment or a group of duty assignments which require similar abilities for the performance of their significant tasks, and which may be performed either in whole or in part by an individual who is qualified to perform the entire group of tasks. , http://www.koreanwar-educator.org/topics/p_mos.htm

operated for promoting regional experts and acquiring advanced military knowledge. Third, the job skill education is the program for learning new knowledge and technology regarding position. Forth, the capability development education is very useful program for satisfying desire of self-development and upgrade quality. The capability development education, especially, needs to vitalize for skilled warrant officer and noncom.

< Table 3-2 Classification of military commissioned education >

Classification	Purpose	Course	Target
Professional degree education	Train human resource regarding national defense policy and research	Internal and external university, national defense university	Mater degree : Captain Doctorate : Captain ~ major
Abroad military education	Train regional expert and acquire military knowledge of developed countries	Foreign national defense university, Military branch school	Management course : Captain ~ colonel Doctrine course : First sergeant ~ major Technology course : First sergeant ~ captain
Job skill education	Acquire new job skill and improve job skill	Internal and external training	Commissioned officer, noncom, civilian worker in military
Capability development education	Upgrade quality and satisfy self-development	Cyber university, College at night	Day time : Commissioned officer, noncom, warrant officer Part time : a field grade officer, noncom and warrant officer

Source : *A study on improvement of military commissioned education*, KIDA, 2006, p 43

3.2 Problem of acquisition system in logistics technical field

In general, the problem of acquisition system can be summed up in three parts. First, the manpower structure of technical field is low ratio of the number of recruit soldier and MOS concordance. The main reason of these problems will be conscription system. According to table 3-3, there are two way of draft system in Korea Army- Conscription and Recruitment system. The conscription soldiers, especially, comprise about 60% of the whole number of army soldiers. However, the rate of MOS concordance of conscript soldiers is about 30~40%.²⁰ This numerical value means that conscription soldiers needs more training time and cost. On the other hand, the recruit soldiers have more specialized ability than conscript soldiers, and the rate of military occupational specialty concordance²¹ is about 95%. This numerical value means that the recruit soldiers can adapt more easily to technical field.

< Table 3-3 Meaning of conscript and recruit soldiers >

Classification	Conscription	Recruitment
Reinforcement method	Military manpower administration(13)	National level selection
Reinforcement unit	Aptitude(12)	Military occupational specialty (230)
Target	19~30 years old	18~28 years old
Selection Criterion	Join the Army(Time), Aptitude	Academic level, license, physical ability

Source : KIDA, *A study on the military human resource classification system in Korea*, Changsoo Choi, 2009, p126

For these reasons, the Army has to secure a recruitment soldier who has experience and degree regarding technical field (Table 3-4). It is important that increasing the number of

²⁰ KIDA, *A study on the military human resource classification system in Korea*, Changsoo Choi, 2009, p126

²¹ The rate of military occupational specialty concordance means ratio of reinforced manpower who has aptitude regarding military occupational specialty.

manpower (recruitment soldier) in maintenance field for supporting smart weapon.

< Table 3-4 Logistics support manpower requirement in the future >

Field	Required ability
Maintenance	<ul style="list-style-type: none"> ▪ Assemble and disassemble ability of high-tech equipment ▪ System calibration ability(Method and procedure) ▪ Assemble and disassemble of details component ▪ Controlling of circuit system and fault diagnosis
Procurement	Expert of Weapon system, Specialty of quality test
Supply	Operating personnel of logistics facilities and equipment modernization
Transportation	Specialty of mobility management personnel
Facilities	Expert of installation work and environment disposal

Source : *Policy direction of logistics manpower specialization*, 2003, p6

Second, the Army needs to select technical professionals who reach a certain standard. According to table 3-5, technical manpower who get certified technician in maintenance unit hold a large majority. As the technical manpower mainly consists of certified technicians, they are lack of professional ability (working experience) in own field. It is more serious problem that the number of engineer and master mechanic is insufficient for maintaining smart weapon and equipment.

<Table 3-5 Current state of professional qualification possession in maintenance unit>

Classification	Total	Engineer	Master mechanic	Industrial Engineer	Certified technician
Total	976(100%)	12(1.2%)	1(0.1%)	106(10.9%)	857(87.8%)
Maintenance enlisted man	615(100%)	3(0.5%)	-	49(8%)	563(91.5%)
Noncom	236(100%)	-	-	19(8%)	217(92%)
Warrant officer	29(100%)	-	-	5(17.3%)	24(82.7%)
Civil worker in military	96(100%)	9(9.4%)	1(1%)	33(34.4%)	53(55.2%)

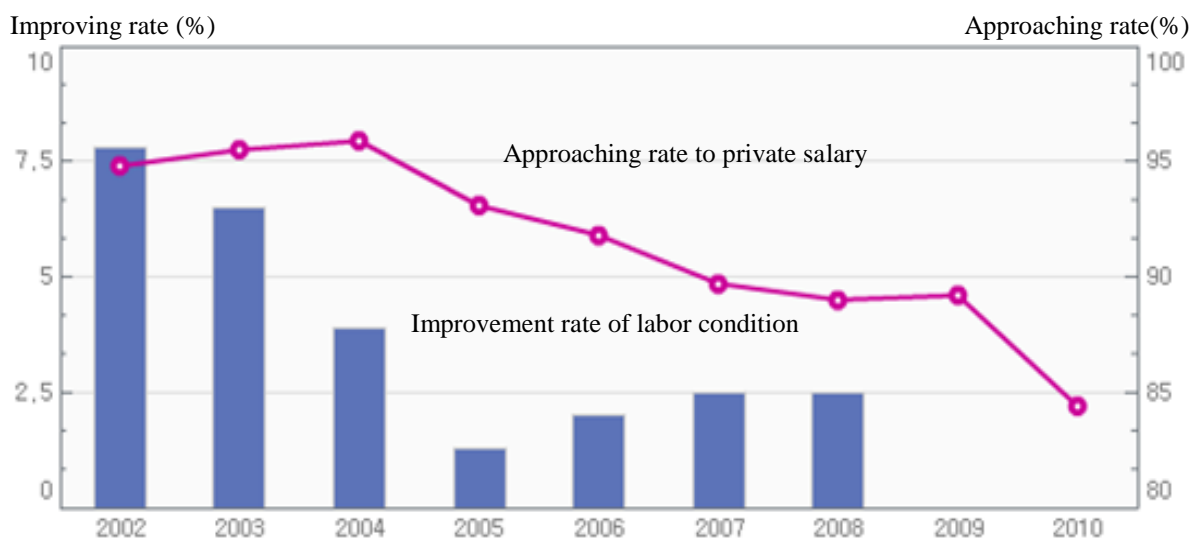
Source : *Study on acquisition plan of maintenance manpower in military*, 2006, p18

This source only refer to 81, 83 maintenance battalion and 20th division

Therefore, current recruiting procedure needs to adapt smart weapon and equipment system. The selection criterion of maintenance field, especially, needs to more enforce than before. Simultaneously, the acquiring engineer, master mechanic and industrial engineer who is regarding logistics technical field has to expand the scale. First of all, improving ability of the noncom and warrant officer has to be the most first-priority project.

Third, wage dissatisfaction causes decreasing the number of technical noncom.(Table 3-6) Discharge rate of technical master sergeant who has been with military for five years is 19.4% and sergeant first class is 60.2%.²² Discharge rate of the sergeant first class, especially, is bigger than other class. These discharge rates of technical noncom can have something to do with wage. In general, public servant gets a lower salary than private company. As the figure 3-1, technical manpower can get a lower salary than private company too. Therefore, the government (military) has to guarantee a certain level for relaxing the wage dissatisfaction. That is the most important way that protecting the brain-drain to private company.

< Fig 3-1 Progress of public servant salary >



Source : <http://www.index.go.kr>

²² *Integrated development plan of military logistics*, army headquarter p280

< Table 3-6 Wage satisfaction of noncom (%) >

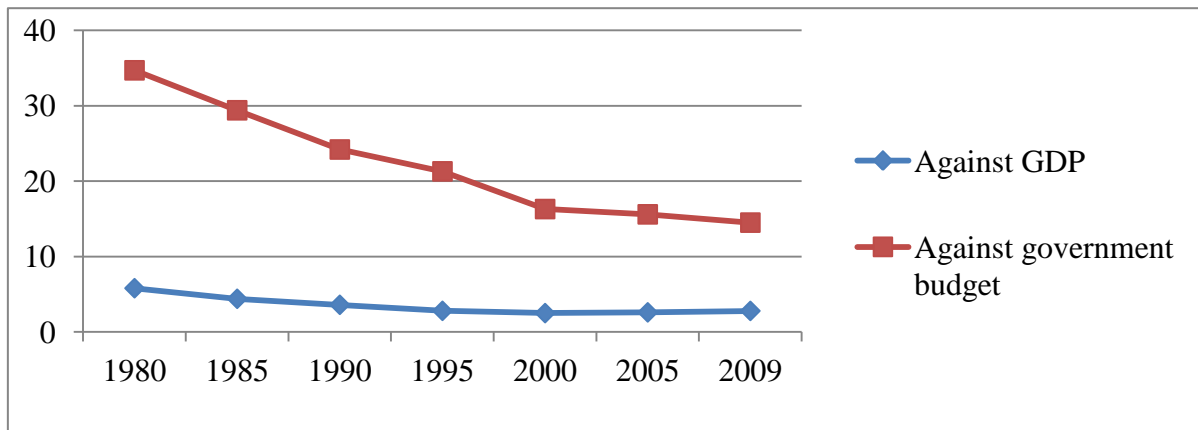
Classification	Well content	Content	Medium	Dissatisfaction	Extremely dissatisfaction	Non-response
Sergeant first class	1.8	26.4	48.4	18.3	4.2	0.9
Master sergeant	2.1	26.7	44.3	21.6	4.0	1.6
Sergeant major	2.9	24.4	48.8	18.6	3.5	1.7

Source : Seokho Lee, 2006, *A search for improving life quality of professional soldier*, KIDA

3.3 Problem of development system in logistics technical field

As mentioned earlier, the logistics manpower development has a lot to do with education and training. It enables to improve job skill and knowledge regarding performance of logistics manpower. However, there are three major problems which are related to development system in Korea Army.

< Fig 3-2 Importance of national defense budget against GDP, Government budget >



Source : Propaganda pamphlet of military budget(2010)

First, education budget of logistics technical manpower decreased than in the past. Although the government (military) has emphasized development education for promoting manpower, the budget was decreased.²³(Figure 3-2)

²³ *Development of school education for obtaining logistics professional agent*, p 6, 2009

< Table 3-7 Investment Ratio against national defense budget in leading countries >

Leading countries	U.S	U.K	Italy	Korea
Importance of education and training	9%	6.7%	8.6%	1.3%

Source : Propaganda pamphlet of military budget(2010)

Table 3-7 illustrates that the education investment ratio against a national defense budget smaller than other countries. It means Korea army needs to more invest education and training fields. Although the national defense budget can be decided by economic scale and security situation, investment of education and training has to the highest priority than other parts.

< Table 3-8 Education and training budget of national defense budget in 2011 >

Classification	'2010budget (hundred million)	'2011budget (hundred million)	Variation	%
Total	4,196	4,492	296	7.1
Training education	479	713	234	48.9
Development education	779	737	-42	-5.4
Reservist duty basic military training	149	147	-2	-1.3
Scientific movement training	564	597	33	5.9
Moral education	182	239	57	31.3
Training facility	1,466	1,415	-51	-3.5
Technical manpower	51	43	-8	-15.7
Support training and education	526	601	75	14.3

Source : Ministry of defense, 2011

According to table 3-8, development education part of national defense budget decreased about 5.4% in 2011, compared to 2010. In addition, the budget for technical manpower decreased about 15.7%. The budget reduction, especially, was affected by accident of the Choen-an ship and Yeon-pyeong island. As a result, the Ministry of National Defense tried to give a priority to strengthening a war potential. Even though training and moral education are very important factors in military, development education and technical manpower can be also significant things as a long-term perspective. A myopic way of thinking of government cannot improve ability of technical manpower.

Second, there is no introduction course for cadet and candidates. In other words, the most of officer don't receive the education regarding maintenance and weapon system field before commissioned. The KMA(Korean Military Academy) and KAAY(Korea Army Academy at Yeong-Cheon) only educate weapon system to cadets. On the other hand, ROTC and OCS do not receive the introduction course regarding maintenance and weapon system. In addition, insufficient training session for skilled officer is can be a problem. The officers who have MOS (quarter master, ordnance, transportation) receive the training at the Consolidated Army Logistic School about 16weeks after commissioned. However, it is difficult that the officers have professionalism through training session. For example, the TPQ 36/37 and MLRS (Multi Launched Rocket System) need several months for learning maintenance manual.²⁴

< Table 3-9 Training of officers before commissioned >

Weapon system	Maintenance education
- KMA, KAAY: Basic theory education - ROTC, OCS : None	None

Source : *Current state and problem of military technical manpower training system*. KICA, 2008, p19

²⁴ *Current state and problem of military technical manpower training system*, KICA, 2008, p19

Third, the poorly academic level of technical manpower makes difficulty of repairing the smart weapon²⁵. The academic level is not decisive factor to win the war, but technical field requires technical manpower to have a basic knowledge regarding weapon and equipment system in peace time.

< Table 3-10 Academic level of maintenance manpower >

Classification	Total	More than university	More than college	High school graduate	Below Middle school
Total	2,667	690 (25.9%)	997 (37.4%)	969 (36.3%)	11 (0.4%)
Special Enlisted man	2,130	642 (30.1%)	851 (40%)	637 (29.9%)	-
Noncom	386	15 (3.9%)	104 (26.9%)	267 (69.2%)	-
Warrant officer	151	33 (21.9%)	42 (27.8%)	65 (43%)	11 (7.3%)

Source :Consolidated Army Logistics School, 2000

According to table 3-10, technical enlisted man has a higher academic level than noncom and warrant officer. In addition, Technical civil worker in military who holds a junior college degree is about 11.3%.²⁶ It means that the enlisted man can easily perform their mission if they have experience regarding technical field. Likewise, if the noncom and warrant officer get an advanced education, they will deepen their business knowledge. Therefore, warrant officer and noncom need to receive civil education regarding own field for maintaining of smart weapon and equipment.

²⁵ *The study on procurement plan of military maintenance manpower*, 2006, p16

²⁶ *Integrated development plan of military logistics*, army headquarter p280

Chapter VI

Development direction of logistics manpower in logistics field

4.1 The process of development in U.S army logistics corps

The U.S army logistics corps²⁷ consists of soldiers (officers, warrant officers, and enlisted) in the historical quartermaster, ordnance and transportation regiments, as well as the new multifunctional logistics branch and the civilians who work in the various logistics career fields.

Army logistics dates back to the early days of the American Revolution with the establishment of the quartermaster department in June 1775. The ordnance department followed during the War of 1812. World War II saw the creation of the transportation corps in July 1942. These three branches, and their supporting civilians, have long, distinguished records of superior service and are vital components of the total Army forces structure. In 1993, FA (functional area) 90²⁸ was created within the operations career field in order to support the development of multifunctional logisticians. Since then, the FA 90 designation has been used to signify officers skilled across the functional logistics branches. In 2005, an effort was undertaken to examine how to further advance the notion of multifunctional logistics leaders. The result was the creation of a logistics branch for officers in the grade of captain through colonel and the formal recognition of a “Logistics Officer Corps” as approved by the Army Chief of Staff in May 2006. After establishment of logistics branch,

²⁷ Logistics officer corps is the term used to describe all officers (commissioned and warrant) who hold a branch or military occupational specialty within the logistics corps. Commissioned officers accessed as lieutenants into one of the three logistics corps functional branches (ordnance, quartermaster, transportation) will develop these functional branch skills for the first 3-4years of their career. Upon promotion to captain and successful completion of the combined logistics captain career course, officers will be inducted into the logistics branch. Logistics knowledge, expertise and development have primacy over individual skills within the ordnance, quartermaster and transportation field.

²⁸ FA 90 means multifunctional logistics

U.S army developed the logistics reformation of was based on the Joint Vision 2010. The logistics reformation mentioned the integrated supply-chain which can make satisfy cost of the joint fighting power.²⁹

< Table 4-1 Logistics reformation goal of Defense of Department in U.S >

Target	Main matrix	1997	2000	2005
Improving service	Allow a day for ordering and receiving	36	18	5
	Total Asset Visibility	60%	90%	100%
	Allow a period for airplane overhaul maintenance	6month	4.5month	2month
Cost cutting	Total cost of logistics business(billion \$)	80	72	64
	Total number of maintenance manpower	742,000	680,000	500,000
	Total stock of subsidiary item (billion\$)	64	56	48

Source : Louis Kratz, *logistics reformation in 21c*, 1998, p46

For example, table 4-1 shows us reformation goal of logistics field in U.S military. The total number of maintenance manpower (soldiers, civil worker in military) gradually has been decreasing since 1997. It means that some part of maintenance business is outsourcing to private company because of the logistics of U.S army cannot approach the level of private logistics company. The greatest advantages of private logistics-company are rejecting mass production and reducing reaction time.³⁰ As a result, the private logistics-company can support efficiently to combat force through their supply chain and distribution structure in peace time.

²⁹ *Development of logistics reformation in Korea army through the logistics reformation of U.S army in 21st*, Korea National Defense University, p188

³⁰ O.P.C.I.T p198

< Table 4-2 Comparison of reaction time between U.S DOD³¹ and private company >

Procedure	U.S DOD	Private company		
Distribution (Inventory)	A 26 day	1 day(Motorola)	3 day(Boeing)	2 day (Caterpillar)
Maintenance (Circulation)	40~144 day	3 day(Compaq)	14 day(Boeing)	14 day (Detroit Diesel)
Maintenance (Purchase period)	9~35 day (tank/truck)	1 day(Compaq)	14 day(Boeing)	5 day (Detroit Diesel)
Acquisition	88 day(DLA)	4 day(Texas builders)	0.5 day(Portland General Electric)	

Source : *Introduction of U.S DOD logistics reformation plan*, Korean Army Headquarters, Pamphlet 700-8-9 2000.10.31 p 185

As the U.S army logistics reform, the Korea Army needs to consider actively outsourcing to private logistics company because of many merits in distribution and acquisition fields. According to table 4-2, the U.S DOD takes more reaction time than private company in logistics fields. Acquisition part, especially, takes the most reaction time than private company. However, the Korea Army needs to apply strict standard for outsourcing. In addition, outsourcing of maintenance field requires cautious approach. Thoughtless outsourcing can make some problems because of security and usefulness in war time.

³¹ Depart of Defense

4.2 Current state of acquisition system in U.S Army

The U.S Army demographic ration is about 540,000 soldiers and bigger than Korea army about 20,000 soldiers. However, this mathematical difference doesn't mean that military power of the Korea army is almost same U.S Army. Practically, battle power of the U.S Army cannot compare with Korea Army because of difference of development level of new smart weapon system.

< Table 4-3 End-strength and accessions for active duty and reserve of the U.S army >

Component	Enlisted Personnel ¹		Officers		Warrant Officers	
	End-strength	Accessions	End-strength	Accessions	End-strength	Accessions
Active duty						
Army	452,065	80,506	72,928	7,494	14,682	1,632
Navy	275,296	38,467	49,735	4,024	1,653	187
Marine Corps	178,213	37,981	18,297	1,838	1,905	225
Air Force	258,095	27,848	64,805	4,101	0	0
DOD total	1,163,669	184,802	205,765	17,457	18,240	2,044
Reserves²						
ARNG	321,605	66,612	31,685	4,053	7,061	993
USAR	161,003	40,455	33,184	3,992	2,837	396
USNR	53,222	15,737	14,780	1,814	134	10
USMCR	34,046	7,545	3,158	913	319	32
ANG	93,564	10,692	14,115	1,243	0	0
USAFR	52,396	7,559	15,169	1,514	0	0
DOD total	715,836	148,600	112,091	13,529	10,351	1,431
Coast Guard						
Active duty	33,228	3,895	6,548	446	1,586	195
Reserves	6,590	490	1,210	221	170	32

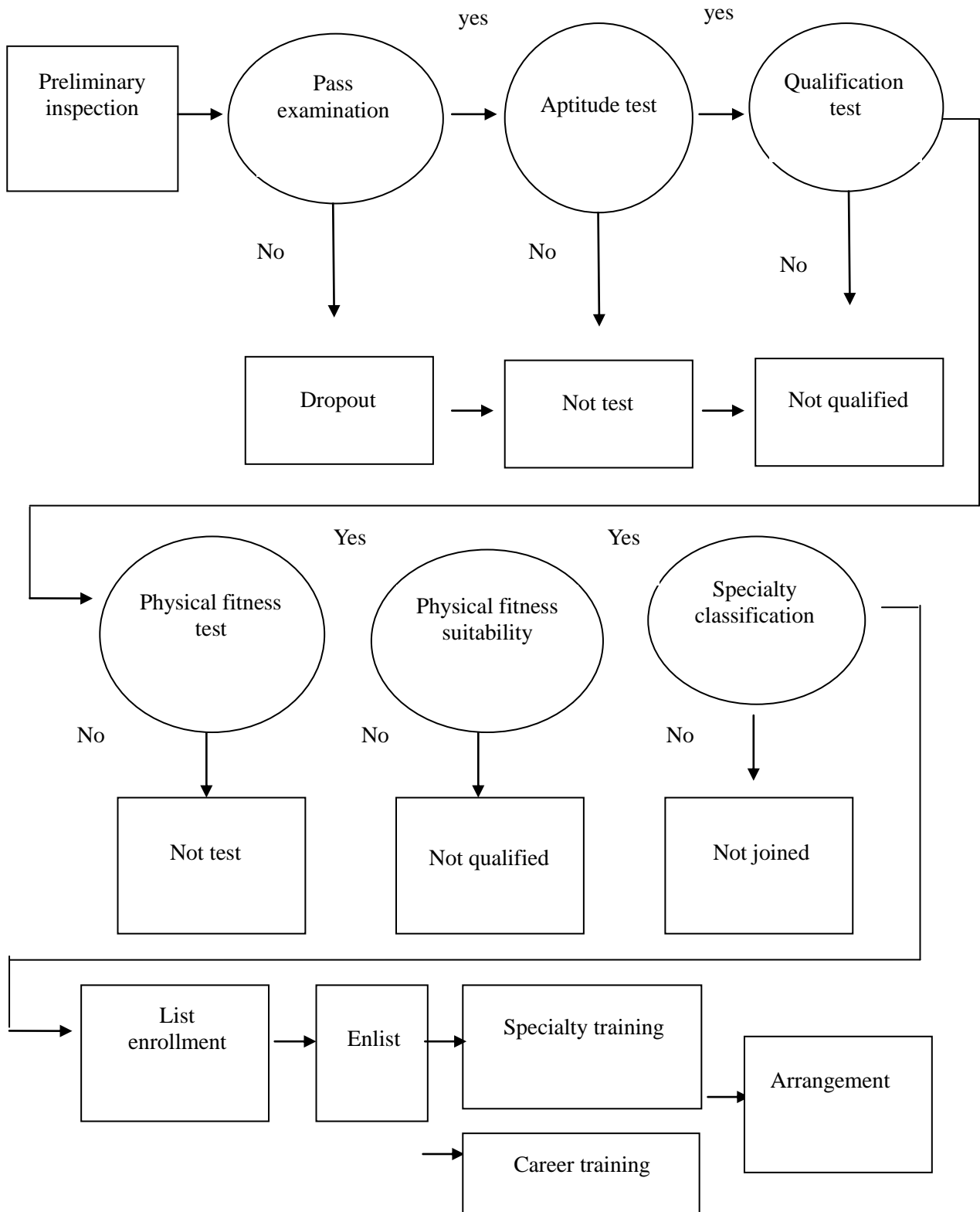
Source : Department of Defense in U.S, 2008

A. Enlisted man acquisition system

The conscription system of U.S Army is converted from draft system to volunteer system in 1976. The U.S army has focused selection, classification, training and leadership to procure excellent human resources because of the enlisted man is important factor to operate weapon and fight in battle. So, the U.S army has evaluated ASVAB, skill, ability(perceptive, cooperative, mental), academic level, sex, and attitude for procure outstanding soldiers.³²

³² KRIVET, *Forging the efficient acquisition and assignment system of military human resource*, (2004)

< Fig 4-1 Acquisition and assignment procedure of U.S military service >



Source : U.S army research Institute(1996),*Soldier selection : past, present and future*, p 9

According to figure 4-1, the Department of Defense has instituted ASVAB³³ (Armed Services Vocational Aptitude Battery) since 1976. The target of ASVAB is sophomore and senior(high-school) who want to apply to military service. The U.S army utilizes, the result of ASVAB, to classify candidate's specialty.³⁴(MOS)

< Fig 4-2 Army jobs and the corresponding minimum ASVAB line scores >

15B	Aircraft Powerplant Repairer	MM:105
15D	Aircraft Powertrain Repairer	MM:105
15F	Aircraft Electrician	MM:105
15G	Aircraft Structural Repairer	MM:105
15H	Aircraft Pneudraulics Repairer	MM:105
15J	OH-58D Armament / Electrical / Avionics Systems Repairer	MM:105 & EL:100
15K	Aircraft Components Repair Supervisor	N/A
15M	Utility Helicopter Repairer	MM:105
15N	Avionic Mechanic	EL:95
15P	Aviation Operations Specialist	ST:95
15Q	Air Traffic Control Operator	ST:100
15R	AH-64 Attack Helicopter Repairer	MM:100
15S	OH-58D Helicopter Repairer	MM:100
15T	UH-60 Helicopter Repairer	MM:105
15U	Medium Helicopter Repairer	MM:105

Source : <http://www.military.com/ASVAB>(MM : Mechanical maintenance)

The figure 4-2 shows that Army jobs and the corresponding minimum ASVAB line scores. For example, in order to be a helicopter repairer, ASVAB score of the mechanical maintenance fields require about 100~105. If not applicants takes this score, they will be classified another Army job. So, most of applicants who want to serve mechanic maintenance field want to get the high ASVAB. This guide line is help to Army acquiring more excellent manpower.

³³ The **Armed Services Vocational Aptitude Battery** is the most widely used multiple-aptitude test battery in the world. As an aptitude test, the ASVAB measures strengths, weaknesses, and potential for future success. The ASVAB also provides you with career information for various civilian and military occupations and is an indicator for success in future endeavors whether choose to go to college, vocational school, or a military career.(www.military.com)

³⁴ KRIVET(Jeongpyo Lee), *Forging the efficient acquisition and assignment system of military human resource*, p 93

< Table 4-4 Connection between element of ASVAB and specialty classification >

Specialty	Element of ASVAB
Combat	Mathematical reasoning power, coding speed, automobile, understanding machine
Field Artillery	Mathematical reasoning power, coding speed, understanding machine, mathematics
Electronic Repair	General science, mathematical reasoning power, mathematics, electrical information
Operators and Food Handlers	Numerical calculation, automobile, understanding machine, vocabulary
Surveillance / Communication	Numerical calculation, automobile, vocabulary, coding speed
Mechanic maintenance	Numerical calculation, automobile, understanding machine, electrical information
General maintenance	General science, automobile, understanding machine, electrical information
Clerical	Numerical calculation, coding speed, vocabulary
Skilled Technical	General science, mathematics, understanding machine, vocabulary
General Technical	Mathematical reasoning power, vocabulary

Source : U.S army research Institute, 1996, *Soldier Selection : past, present and future*, p5

Table 4-2 explains the connection between the ASVAB and military occupational specialty. Each military specialty requires basic ability which can carry out easily the mission. Maintenance and repair fields, especially, require ability regarding general science, mathematical reason power and understanding machine in ASVAB. Through result of the ASVAB, the applicants (high-school student) can know beforehand what the most appropriate specialty to them. That is an important merit of ASVAB for applicant.

B. Acquisition system of officer and warrant officer

An officer appointed by warrant by the Secretary of the Army, based upon a sound level of technical and tactical competence. The warrant officer is the highly specialized expert and trainer who, by gaining progressive levels of expertise and leadership, operates, maintains, administers, and manages the Army's equipment, support activities, or technical systems for an entire career..... (Para 1-7 DA Pamphlet 600-11)

Warrant officer is appointed based on technical competence to perform in a single function for an entire career. Applications of all eligible individuals are evaluated by a HQDA (Headquarters, Department of Army) selection board. Those recommended by board are slated to attend, in a candidate status, the Warrant Officer Candidate School (WOCS), candidate receive a conditional appointment to the grade of WO1. Each WO1 attends the appropriate warrant officer basic course (WOBC) to complete certification training and upon graduation their appointment becomes permanent.³⁵

In general, acquisition system of warrant officer in U.S Army emphasizes career instead of the length of his military service. For example, minimum requirements for the electronic missile system maintenance warrant officer (MOS 948D) are as following.³⁶

- **SGT (E5³⁷) or above with five years field experience** in MOS 94A (Land combat electronic missile system repairer), 94M (Radar repairer), 94S(Patriot system repairer), 94T(Avenger system repairer) or 94z(Senior electronic maintenance chief). ARNG³⁸ (Army National Guard), USAR (U.S Army Reserve), and civilian experience related to MOS 948D is taken into consideration.

³⁵ *How the army runs*, ch13 military human resource management p8

³⁶ <http://www.army-portal.com/jobs/ordnance/948d.html>

³⁷ In infantry, the Sgt. can lead a fire team, which consists of four individuals. An E5 may also be responsible for leading the privates or those in rank below E5. The Sergeant may be responsible for the training, appearance and overall cleanliness of the soldiers.

³⁸ The Army National Guard (ARNG) is one component of The Army (which consists of the Active Army, the Army National Guard and the Army Reserve.) The Army National Guard is composed primarily of traditional Guardsmen -- civilians who serve their country, state and community on a part-time basis (usually one weekend each month and two weeks during the summer.)

In contrast, minimum requirement of skilled warrant officer in Korean Army is as following.

● Sergeant Major or Master Sergeant who works above 2years regarding field

The difference of warrant officer acquisition system between Korea Army and U.S Army is selection qualification. In other words, sergeant major or master sergeant who works 2 years above in Korea Army can only apply to warrant officer, but SGT (E5) or above with five years field experience in U.S Army can apply to warrant officer. Therefore, the Korea Army needs to consider that applying of sergeant first class to warrant officer.

Acquisition system for basic branch officers is divided into the OCS (Officer Candidate School), ROTC (Reserve Officer Training Course), USMA (United States Military Academy) and Direct commission. OCS means college graduates to gain the knowledge and skills necessary to be commissioned as an Army Officer. Through classroom instruction and training exercises, candidates learn to become a leader. Upon completion of OCS, they are commissioned as Army second lieutenants.³⁹

The majority of new officer accessions each year are commissioned through ROTC which trains and commissions officers for the AC. Army ROTC is available at colleges and universities throughout the United States. Upon graduation, ROCT cadets are commissioned as Army second lieutenants.⁴⁰

West Point cadets are immersed in military customs and traditions while working toward a college degree. Upon graduation, West Point cadets are commissioned as Army second lieutenants. A formal branch selection procedure based on branch quotas established by HQDA is conducted at West Point during the cadets' senior year.⁴¹

³⁹ <http://www.goarmy.com/careers-and-jobs/become-an-officer.html>

⁴⁰ <http://www.goarmy.com/careers-and-jobs/become-an-officer.html>

⁴¹ *How the army runs*, ch13 military human resource management p9

The acquisition system of U.S army is almost same Korea Army recruiting system. The Korea Army has operated the officer recruiting system which is largely categorized four types – KMA(Korean Military Academy), KAAY(Korean Army Academy at Yeong-Cheon), ROTC, OCS. And classification system of the military occupational specialty is the same. In addition, acquisition system of the enlisted man and warrant officer is nearly same. Simply, the Korea army has more complex acquisition system than U.S Army.

4. 3 Current state of development system in U.S army

The U.S army emphasizes the Army's leader development and education system. Leader development is accomplished in three domains – operational, institutional and self-development. The institutional training is foundation for lifelong learning. During institutional training, leaders learn the knowledge, skills and attributes essential to high-quality leadership while training to perform critical tasks. Operational assignments contribute the second domain of leader development. Upon completion of institutional training, leaders are ideally assigned to operational positions. Self-development, consisting of individual study, research, professional reading, practice, and self-assessment, is accomplished via numerous means.⁴² These development systems in U.S army are based on the OPMS (Officer Personnel Management System). The development means maximizing officer performance and potential through training and education, assignment, self-development and certification of officers to build agile and adaptive leaders.⁴³

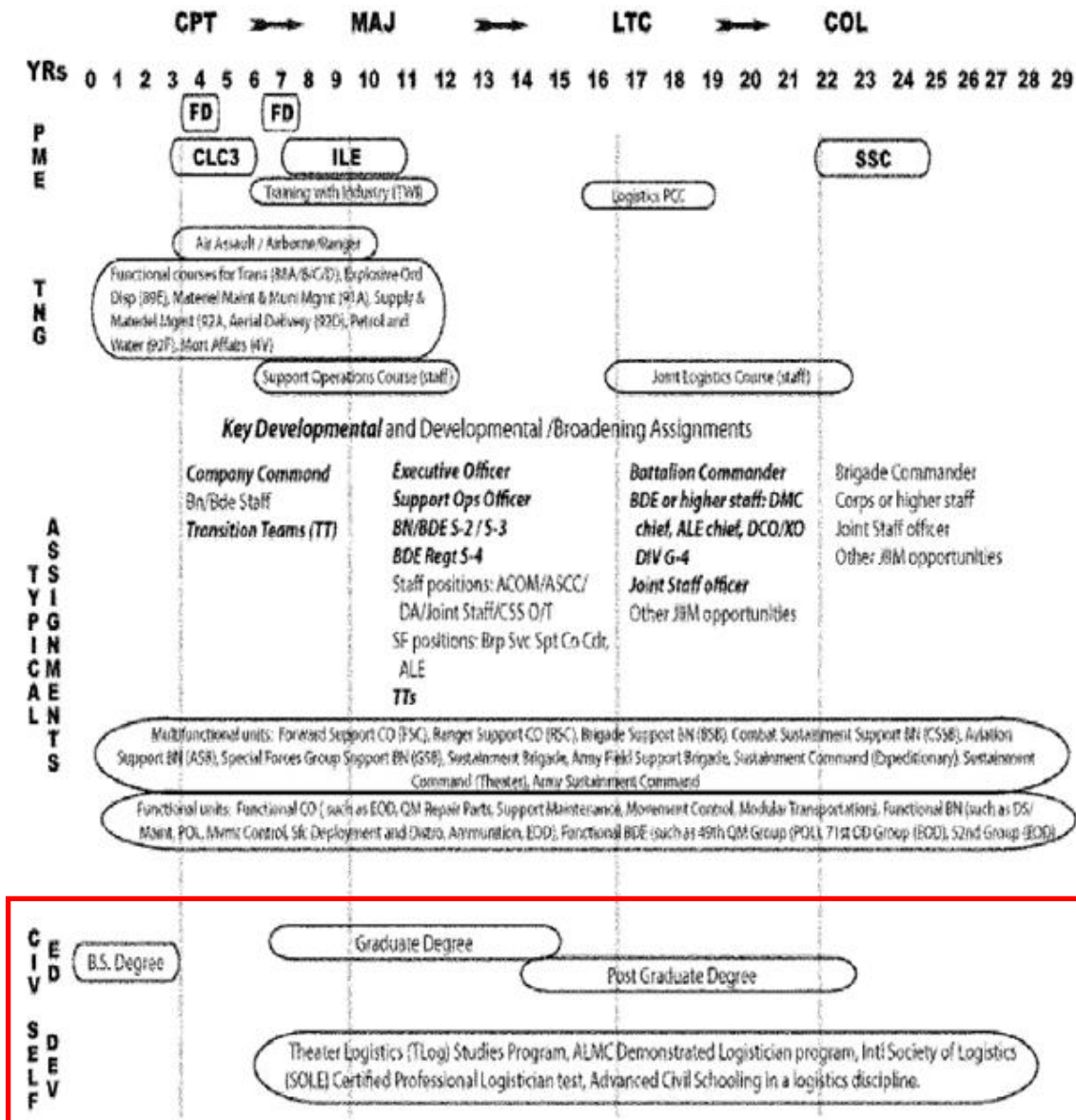
A. Commissioned officer development system

The officer development for the U.S army seems to be effectively balance breadth and depth of experience. According to department of the U.S Army pamphlet 600-3, an officer's focus should be on bringing the warrior ethos to every job and every facet of their development. And officers are encouraged to know all branch and functional area, regardless of branch functional area, military occupational specialty (MOS). In this chapter, it is necessary that understanding the commissioned officer professional development, broad outline, regarding logistics technical field. (Figure 4-2)

⁴² *Commissioned officer professional development and career management*, department of the Army pamphlet 600-3 p8

⁴³ *Commissioned officer : development and career management*, U.S Army pamphlet 600-3, p10

< Fig 4-2 Active army logistics branch developmental chart >



Source : *Commissioned officer : development and career management*, U.S Army pamphlet 600-3, p313

According to figure 4-2, civil education provides selected officers the opportunity to satisfy their educational needs. Through civil education, officers have to expand their military knowledge background regarding their branch, functional area, and military occupational specialty. The education program is divided by three parts – fully funded programs, partially funded programs, fellowships and scholarships⁴⁴

⁴⁴ *Commissioned officer : development and career management*, U.S Army pamphlet 600-3, p32

< Table 4-5 Classification of education program >

Classification	Fully funded	Partially funded	Fellowships and Scholarships
Day and night	Day		
Paying educational expense	Department of Defense	Own(subsidy)	Department of Defense, other institution
Education program	Advanced degree program, Short course training, Training with industry	Degree completion program, Cooperative degree programs	Olmsted scholarship, White House fellowships, Arroyo center fellowships

Source : KIDA(2006), A study on the improvement of military education system, p80

- (1) Advanced degree program : Selected officers attend graduate school to meet specific army requirements established by the AERS(Army Education Requirements System). On completing graduate studies, officers are assigned to AERS positions according to branch or functional area, grade and appropriate academic skills.
- (2) Training with industry : This program provides training in industrial procedures and practices not available through military service schools or civilian education. The training with industry provides officers with vital knowledge, experience and perspective in management and operational techniques to fill responsible positions in Army commands and activities inherent to the business environment.
- (3) Short course training : Tuition funds allocated to organizations are available for not programmed training that is needed for current job performance when the training is less than 20 weeks and is in subjects for which the Army has no in-house training capability.

Under partially funded programs, the officer bears the cost of all tuition, fees and textbooks. Many officers elect use their in-serve veteran benefits to help defray educational cost. The available programs are below.

(1) Degree Completion Program : This program authorizes officers up to 18 months of full-time civilian education to complete undergraduate or graduate degree requirements. Officers who lack an undergraduate degree are encouraged to pursue studies on their own. However, the Army can assist by providing up to 1 year to allow completion of the degree.

(2) Cooperative degree programs : Selected students attending schools such as the Command and General Staff College, the Logistics Executive Development Course at the Army Logistics Management College and certain Senior Service Colleges are offered the opportunity to participate in various courses conducted by cooperating civilian institutions.

Self-development of logistics branch consists of Theater Logistics Studies Program, ALMC demonstrated logistician program, International Society Logistics Certified Professional Logistician Test, and Advanced Civil Schooling in a Logistics Discipline. First, the Theater Logistics Studies Program is the Army's premier course for selected senior company and field grade officer, civilian logisticians and international students who will be positioned within the Army as multifunctional, joint, and multinational logistics problem solvers.⁴⁵

Second, the ALMC (Army Logistic Management College) demonstrated logistician program provides intermediate recognition of professional performance and continuing education in the individual field. There are three levels of designation in the demonstrated logistician program. The First is the Demonstrated Logistician, next is the demonstrated

⁴⁵ http://www.almc.army.mil/ALU_COURSES/8AF17.htm

senior logistician and the highest level is the demonstrated master logistician. All levels require that the individual continue one's professional education through college credit coupled with technical training in one's field and enabler training in areas associated with the integrated functions of business or government.⁴⁶

Third, International Society Logistics Certified Professional Logistician Test recognizes the professional stature and accomplishments of logisticians within commerce, industry, defense, international, federal and local government agencies, as well as in academic and private institutions. This certification recognizes the functional interrelationship within the professional responsibilities of logisticians regardless of their occupational roles.⁴⁷

Fourth, Advanced Civil Schooling in a Logistics Discipline facilitates the professional development of Regular Army Officers by providing them the opportunity to participate in a fully funded graduate degree program. The Advanced Civil Schooling fully funded graduate program provides Army officers the best academic education in the timeliest and most cost effective manner so that they may advance their careers into positions that require graduate degrees and better meet the needs of the Army.⁴⁸

As see the above, there are many development systems to promote ability of logistics manpower. However, these systems needs cost a large sum of money, so it is impossible that the Korea Army tries to imitate the U.S Army development system right now.

B. Non Commissioned officer development system

The noncom officer development system regarding logistics field can be divided into five parts which are mechanical maintenance, transportation, ammunition sergeant, supply services and electronic maintenance career progression plan. Especially, the Noncommissioned Officer Education System (NCOES) is the keystone for NCO

⁴⁶ <http://www.sole.org/dlp.asp>

⁴⁷ <http://www.sole.org/cpl.asp>

⁴⁸ <http://myarmybenefits.us.army.mil>

development. NCOES provides leadership and MOS(Military Occupational Specialty) skill training in an integrated system of resident training at four levels (primary, basic, advanced, and senior).⁴⁹ This paper will focus only mechanical maintenance career progression plan.

The primary duties of the mechanical maintenance CMF (Career Management Field) are to perform the fix functions only Army weapons system and equipment that support maneuver forces. The fix functions include : maintenance management, recovery, fault diagnostics, repair, overhaul, and component /major assembly substitution and exchange.⁵⁰

For example, the machinist inspects, modifies, performs and supervises maintenance on materials of Army watercraft, land combat systems and general-purpose equipment. The machinist's primary duties center on fabricating components made of ferrous and nonferrous metals, plastics, and other machinable materials using machine shop equipment such as lathes, milling machines, drills and presses. The goal for development of machinist is as following.⁵¹

(1) SGT(Sergeant)

(a) Self-development : Sergeants should consider the following correspondence course :

Metal Workers Course. Sergeants should have mastered the technical expertise necessary to pass the **NIMS (National Institute for Metalworking Skill)**⁵² certification.

(2) SSG(Staff Sergeant)

(a) Self-development : Staff sergeants should complete both the NIMS and the

AWS(American Welding Society)⁵³ certification.

(3) SFC(Sergeant First Class)

⁴⁹ <http://usmilitary.about.com/library/milinfo/blarmyncoeducate.htm>

⁵⁰ Department of the Army Pamphlet 600-25, *U.S Army noncommissioned officer professional development guide*, p224

⁵¹ Department of the Army Pamphlet 600-25, *U.S Army noncommissioned officer professional development guide* p228-229

⁵² <https://www.nims-skills.org/web/nims/home>

⁵³ <http://www.aws.org/w/a/index.html>

(a) Self-development : The machinist must continue to remain competent in technical field while focusing on broadening management and doctrinal knowledge. Subjects such as organizational behavior, personnel management, time management and battle staff functions should be emphasized as essential to the senior maintainer's knowledge base.

(4) PVT (Private)-SPC (Specialist) / CPL (Corporal)

(a) Self-development : Soldiers should consider the following correspondence course : Machinist Course. Soldiers should also strive to master the skills necessary to pass the National Institute for Metalworking Skills (NIMS) certification.

As see the above, the self-development requires the compulsory selection. The sergeant and staff sergeant have to complete technical courses which are NIMS and AWS. In the contrary, the Korea Army has little compulsory options. Therefore, the Korea Army needs to set the rule regarding applicant's basic certification.

The U.S army has trained the enlisted man who possess more than two the basic knowledge of technical field since 2001. This concept is well known as MSS (Multi Skilled Soldiers). The MSS can procure various skilled manpower who can perform many different missions. Today's MSS Concept, which is still evolving, encompasses several notions that differ considerably from much of the Army's previous approaches to broadening soldier skills. The following notions are the more pronounced and noteworthy:⁵⁴

1. **The Additionally Skilled Soldier.** One approach would focus principally on training the soldier differently during his initial training base experience [the equivalent of today's Basic Combat Training (BCT) and Advanced Individual Training (AIT)].
2. **The Generic Soldier.** This approach largely focuses on the desired results from

⁵⁴ The Multi-Skilled Soldier Concept: Considerations for Army Implementation, John T. Nelsen II Booz Allen Hamilton Allan Akman, 2002, p17

continuing MOS consolidations. Soldiers would become more MOS generic. They would reflect a selective consolidation of major MOS along the lines recently implemented for the infantry MOS to form a single generic infantry MOS.

3. **The Adaptable Soldier.** Another approach frequently associated with the emerging MSS Concept focuses chiefly on developing soldiers with significantly enhanced capacities for adaptability, versatility, and mental flexibility. According to this notion, tomorrow's multi-skilled soldiers are expected to exhibit many of the creative and problem-solving qualities attributed to the emerging notion of the adaptive leader.
4. **The Perpetually Learning Soldier.** Perpetually learning soldiers must be educated, trained, and motivated to deepen and broaden the skills they acquire in their initial entry training and thereafter through never ending self-education.

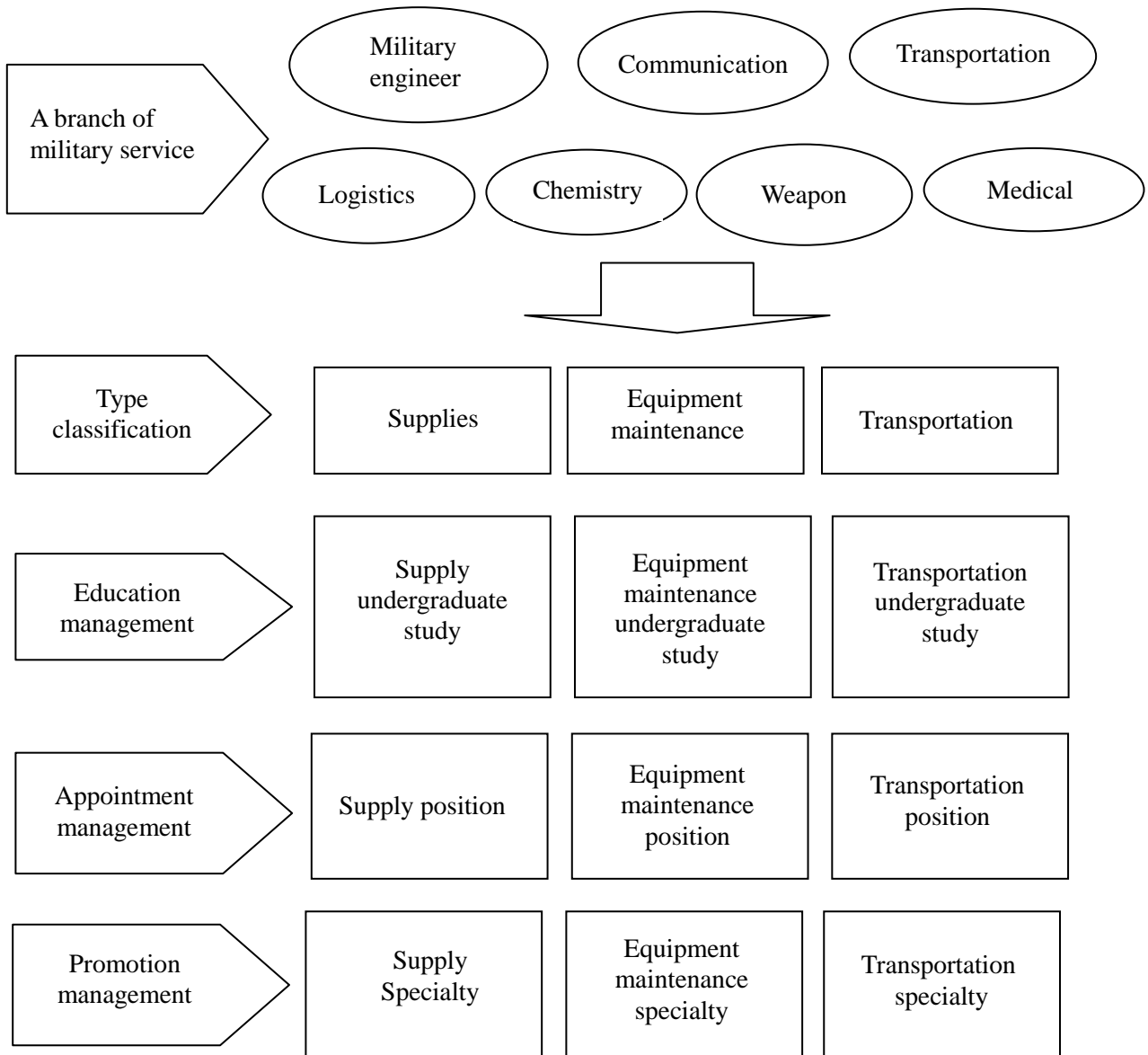
The Korea Army needs to adopt MSS concept in technical field. Enlisted man, also, cannot train more than two the basic technical knowledge in two years. However, it is possible that utilization of noncom and warrant officer by MSS concept. Especially, the Korea Army has to consider innovative incentive for promoting MSS. As the skilled manpower supply during the war is very difficult, MSS can solve immediately manpower shortage. Therefore, training the basic technical knowledge which mutual complementary in technical branch is very important.

4.4 Improvement direction of HRM in logistics field

The Korea army has been giving shape to a plan which is divided by a long range plan and mid-term plan for logistics manpower since 2000s. A long range plan is to develop the human resource acquisition system and to merge the military occupational specialty. According to figure 4-3, a long range plan integrated a logistics branch of military service from 7 to 3. In addition, education, appointment and promotion management is also integrated by three parts. By integrating the branch, it can improve the efficiency of logistics

support.

<Fig 4-3 Functional human resource management system in logistics field>

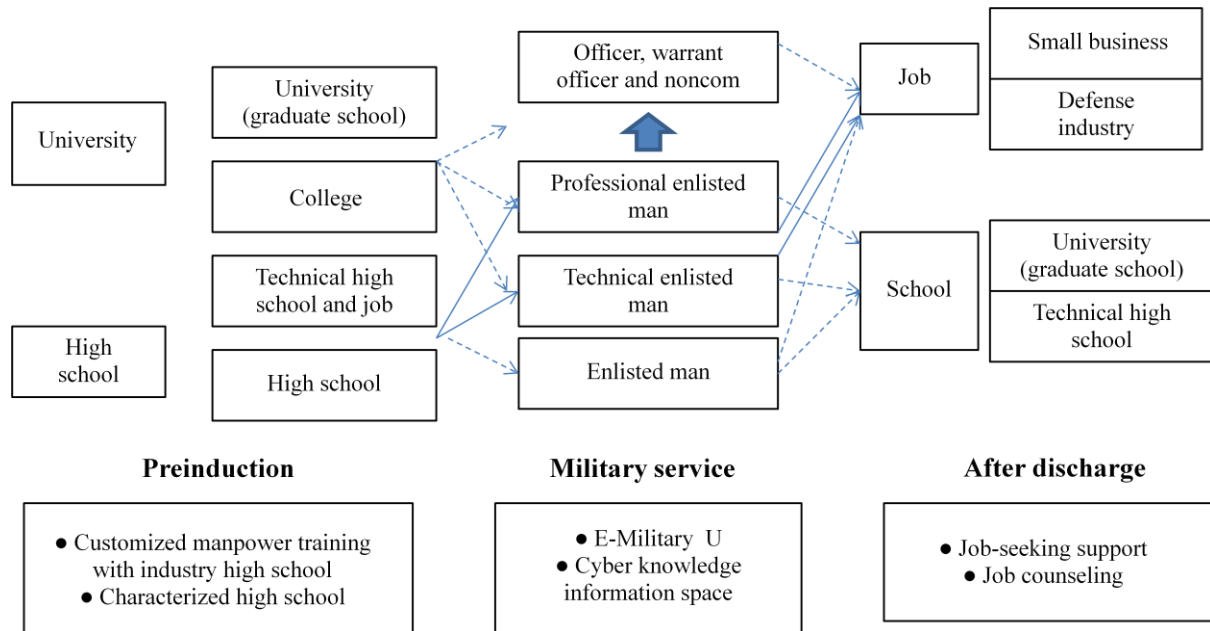


Source : The logistics policy book, army headquarter, p68

The mid-term plan can be summarized as follows. First, the manpower acquisition system is operated by setting the type of recruiting target. It means that the recruitment of active-duty noncom expands from oriented combatant position to whole position. Second, the noncom acquisition system will be reformed. It means the number of noncom who will serve long term career soldier gradually increases. Third, military and college will expand making

an agreement about applying noncom position. It means the acquisition of maintenance manpower through military scholarship student system.⁵⁵(Figure 4-4)

< Fig 4-4 Cooperative system of skilled manpower >



Source : <http://www.korea.kr/expdoc/viewDocument>

The Korea Army suggestions are seemed to specific plan, but it needs incentives for recruiting a more professional manpower. In other words, the present plans only focus on acquisition manpower – a manpower supply and demand. Especially, there is little development plan which is related to noncom and enlisted man (Only scholarship and added point for applicant who want to be a technical noncom).

Therefore, there are several suggestions to improve the acquisition and development system. First, as mentioned above, acquisition system of logistics technical manpower has to change to induce more excellent workforce. Recently, the Ministry of National Defense is trying to establish a strategic alliance with particular college and high-school.⁵⁶ This strategy will be very useful in the future, but specialized college and high-school student may not

⁵⁵ The logistics policy book, army headquarter p69-70

⁵⁶ <http://www.newdaily.co.kr/news/article.html?no=79297>
<http://news.mk.co.kr/newsRead.php?year=2011&no=310223>

work long period without long term advantage. So, the Army has to consider more incentives to take long term manpower. (Unprecedented promotion)

In addition, the Korean Army has to expand the public relation. It means that the Army has to visit college, high school and job technical college, and the Army has to explain merits of technical soldier. For example, it necessary that on the job training about logistics fields for technical high school students.

Second, the manpower structure of the future has to be changed technology intensive professional manpower structure. The period of service of enlisted man is insufficient to accomplish professional level, so the noncom and warrant officer has to replace enlisted man. For example, the Korea Army needs to consider adopting the ASVAB(U.S Army). So, every high-school student (sophomore) who wants to be technical manpower has to take ASVAB. As the result of ASVAB, the more excellent manpower can be recruited. And, establishing the Army Technical high school is can be one of the alternatives. It can be effective alternative to solve the difficulty of acquiring manpower and to reduce time and cost for training.

Third, it is actualized that giving the incentives to certified skilled manpower. For example, certified technical manpower of maintenance has an advantage which means additional points for promotion until just now. However, it is less powerful to other uncertified technical manpower. Therefore, it is necessary that expanding the ratio of additional points to certificate holders in technical field. This standard makes it a rule to apply only for logistics technical field.

Forth, the Army has to enlarge civil education opportunities for logistics technical manpower. For example, mechanical engineering and electronic engineering will be more important field in the future war environment. However, these educations cannot train in military, and needs to take an advanced course.

Chapter V

CONCLUSION AND RECOMMENDATION

The acquisition and development system of logistics technical manpower for the future war will be more important factor. The acquisition system of Korea Army has concentrated on quantitative expanding instead of quality growth. The division of Korea into South and North, special environment, can be the most important reason. On the other hand, the development system for technical manpower was de-emphasized than acquisition system. Especially, civil education opportunity for technical noncom has decreased. In 2012, there is only one civil education course regarding MLRS maintenance field. More serious problem is the Army announcing that the decreasing the number of people for civil education.

To solve these problems, first, the Korea Army has to reform the structure of technical manpower. Second, it is important that setting more practical incentives compared with private sector. Third, the opportunity of civil education regarding technical field for warrant officer and noncommissioned officer has to widen from now on. Fourth, personnel guide book for noncom has to suggest that specific standard regarding technical certification.

In general, many military experts suggest that logistics technical field has to outsource to private sector. The private sector has more strength point than military, but it is important that unconditional outsourcing can make problems. The private sector cannot operate well in wartime and a military secret can be exposed to enemy. Therefore, the outsourcing to private sector needs to consider carefully.

Recently, the Ministry of National Defense is trying to reorganize each military part based on the national defense reforming plan. It is necessary that improving reaction time of organization and ability to handle a problem. In order to be a professional organization, the Korea army has to invest time and cost with a long range view instead of short-term policy.

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