

# Current Task of Korea's Aviation Service for the 21st Century

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## Introduction

The purpose of this presentation is to provide constructive alternatives for the development of Korea's aviation policy by examining current status of overall national aviation policies. First of all, the changing aerospace environment is discussed. It is followed by a brief survey of the Korea's aerospace industry. Then, the status of Korea's aviation service is examined by comparing it to other Asian countries. Afterwards, the

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governmental administrations dealing with the aviation policy are discussed along with some problems in the field of Korea's aviation policy. As a conclusion, it provides policy suggestions regarding the development of Korea's aviation policy, more specifically, the establishment of new authorities being able to take the lead in performing aviation policies with more strength and specialization.

Since the invention of the first airplane in 1903 by the Wright brothers, aircraft technology and the aerospace industry has been developing at a speed similar to the aircraft itself. Since its initial use for liaison and observation, the mission capabilities of the aircraft have been expanded to include a broader range such as transportation, reconnaissance, and bombing.

In the military context, air power changed the mode of warfare from surface battle to air-land battle throughout the two world wars. Nowadays the advancement of scientific technology makes it possible to produce new generation of aircraft such as Nighthawk(F-117) with stealth capability and Su-37 with thrust vectoring. Thus, aerospace power became a dominant factor for victory in modern warfare.

In civilian sector, aerospace industry already occupied great portion in the national economy. In other words, aerospace industry based on value-added technologies has greatly contributed for the nation's economic growth.

In addition, as the utility of outer space increased, developed countries have occupied most aerospace assets in the outer space. Nevertheless, it is required for developing countries to participate more actively in the process of acquiring aerospace assets for the nation's prosperity in the future.

The aviation service with its unique characteristics, speed and range, has been major means for transcontinental and intercontinental transportation. As known well, the supersonic passenger plane, the Concorde, is already

in service, and a jumbo size plane that load one thousand passengers is developing at present.

Consequently, the development trend entails revolutionary change in the human being's way of living just as the automobile industry did in the 19th century.

Thus, it is meaningful to provide constructive policy suggestions for the development of Korea's aviation policy by examining the current status of Korea's aviation service.

## I. Changes in Aviation Service Environment

Since the Chicago Convention of 1944, the concept of the nation's right over the air space has been accepted. And the Bermuda Treaty of 1946 resulted in regionalism in the aviation business. In 1978 the United States of America declared Open Sky Policy, and has requested the Republic of Korea to sign on the Open Sky Policy Agreement since 1992. The Open Sky Policy is to abolish restrictions on aviation business and to guarantee right for unlimited airline service and the beyond traffic right.

The competition for securing aerospace assets has become very intensive in the world. Thus, the tough competition makes it difficult for developing countries to acquire a satellite on the geostationary orbit. As a result, the government's role for securing national interest in the air and space is increased in recent years.

In the case of Asian-Pacific region, there has been growing demand for aviation service due to the economic growth of the region. In addition, increased trade volume with the operation of the World Trade Organization (WTO) system requires aviation service more urgently. Thus, many

countries in Asian-Pacific region are concentrating their national effort on the construction of large-scale airport for the 21st century.

Aerospace industry has been taking the lead in developing new technologies including computer science, life science, robotics, wireless communication, environment protection, new materials, and so on. Thus, many countries have made strategic investment for fostering their aerospace industry.

## II. Korea's Aerospace Industry

The development process of Korea's aerospace industry can be divided by three phases. The first phase of 1950-70s was a depot maintenance era. Technologies for aircraft maintenance were mainly accumulated by maintaining the military aircraft in this period. In late 1970s Korea made a licensed production of the 500MD helicopters. In the second phase of 1980s, Korea manufactured F-5s and F-16 off-set parts. In the last phase of 1990s, Korea has made a licensed production of F-16 and UH-60. In recent years, Korea, by launching the KTX project, is developing a light aircraft of its own model.

In aerospace field, Korea launched a scientific research rocket, Uribyul I in 1992. It was followed by the scientific research rocket I and II in 1993 and communication satellites, Mugungwha I and II in 1995. And multi-purpose satellite I is scheduled to be launched in 1999.

Meanwhile, total sales of Korea's aerospace industry was some 1 billion US dollars in 1996, recording 31 percent up comparing with that of 1995. Total investment of Korea's aerospace industry was some 800 million dollars in 1996. It was almost doubled comparing that of 1995.

[Table1] Total sales of Korea's aerospace industry

Year	1993	1994	1995	1996
Amount (US mil. \$)	770	800	840	1000

### III. Korea's Air Transport Business

According to the International Air Transport Association, the Asian-Pacific region will occupy more than half of the world air transportation.<sup>1)</sup> In particular, the economic growth of Southeast Asian countries has created growing demand for air transport, and regional countries are concentrating their national effort on attracting hub airport of the region.

#### 1) New Airports in Asian-Pacific region

Many countries in Asian-Pacific region are in competition for constructing new airport. Hong Kong initiated this competition by constructing Chek Lap Cok Airport. When it finished in 1998, it can accommodate 35 million passengers and 3 million tons of freight annually.

In the case of Malaysia, Sepang Airport will be able to accommodate 25 million passengers and 1 million tons of cargo when it opened in 1998.

[Table2] New airports in Asian-Pacific region

Airport	Size (ha)	Passenger (million)	Cargo (million tons)	Operating Year
Chek Lap Kok	1,150	35(87)	3(90)	1998(2040)
Sepang	9,500	25(45)	1	1998(2012)
2nd Bangkok	1,650	35	4	1997
Changi	5,000	16 (60)	6.4	1999(2000)
Gansai	460(1,100)	25(40)	4	1994(-)
Inchon	1,095(4,747)	27(100)	2(7)	2001(-)

1) Joong Ang Llbo, 1997. 5. 19., p.9.

Thailand is enlarging its Donmuang Airport to enhance its accomodating capacity for 35 million passengers.

Changi airport in Singapore has been a leading hub airport in Asian-Pacific region with some 30% transfer rate of loadings. Singapore is enlarging the Changi Airport for accomodating 60 million passengers annually.

Japan already constructed Gansai International Airport in 1994 with accomodating capacity of 25 million passengers every year.

Korea also recognized the necessity of a new airport for the 21st century, and launched the plan for constructing Incheon International Airport in 1989. When it finished in 2001, Incheon Airport can accomodate 27 million passengers and 2 million tons of freight annually.

## 2) Air Transport in Korea

Transportation network in Korea could not satisfy the growing demand for rapid transport of passengers and goods along with its economic growth. The transportation cost is already reaching at 17 percent of total price of goods.

Considering this poor condition of surface transportation, air transport become popular in recent years. Practically, aviation service between Seoul-Pusan and Seoul-Kwangju is already exceeding the supply of air service.

Service range for air transport has also been expanded from the United States of America and Japan to all over the world including South East Asia, Europe, Australia, Russia and China.

According to the International Air Transport Association (IATA) Korea's first air service company, Korean Air Line, was ranked the third

largest company in air freight service and the tenth in passenger service in world air service market in 1993.<sup>2)</sup> Korea was ranked the 8th from the top in air transportation in 1993.<sup>3)</sup>

Korea's air transportation statistics are shown at [Table3]. In 1995 air passengers and freight were almost doubled those of 1990. It was mainly indebted by the Seoul Olympic Games. After the Olympic Games, trade and personnel exchanges are rapidly expanded with northern countries including Russia, China, and Eastern European countries. Consequently, demand for air transport has been dramatically increased.

[Table3] Air Transportation of Korea

		1985	1990	1995	Growth Rate
Passenger	Deomestic	3,467	11,064	21,008	45%
	Foreign	4,382	9,626	14,603	
	Sub Total	7,849	20,690	35,611	
Freight	Deomestic	66	180	319	40%
	Foreign	333	777	1,290	
	Sub Total	399	957	1,609	

Source : Ministry of Construction and Transportation, Transportation Yearbook, 1996.

### 3) Civilian Aircraft in Korea

As shown in [Table4], the number of civilian aircraft has been trippled in less than two decades. The Korean government approved the second airlines, Asiana, to satisfy the growing aviation demand for the Seoul Olympics.

2) Soon Kil Hong & Byung Jong Kim, 'Major Issues of new Korean Aviation Policy toward the 21st Century' Speech at the Fifth Academic Seminar between Russia and Korea in Hankuk Aviation University in 1994. 12.

3) Ibid.

[Table4] The Number of civilian aircraft in Korea

Year	1975	1980	1985	1990	1995	Increase Rate
Aircraft	75	92	108	175	242	300%

As shown above, aviation industry and service business has rapidly grown up. And the aviation business can be a key factor for Korea's economic growth for the 21st century.

#### IV. Korea's National Administrations for Aviation Service

Korea's governmental administrations for aviation service are consisted of five standing organizations under the Ministry of Construction and Transportation. Apart from the standing organizations, there is a non-permanent body called Aerospace Policy Consultative Committee. The personnel numbers of the administrations are shown in [Table5].

[Table5] Personnels of the Administrations for Aviation Policy

Organizations	Personnel
Civil Aviation Bureau	66
Seoul Regional Aviation Bureau	227
Pusan Regional Aviation Bureau	243
Taegu Area Control Center	148
Korean Airport Authority	2,638
Total	3,322

The functions of the organizations are as follows.

##### 1) The Korean Civil Aviation Bureau (KCAB)

Aviation administration service started at the Civil Aviation Division under the Ministry of Transportation in 1948. It was promoted to the



Korea Civil Aviation Bureau in 1963. Since the restructuring of the government organizations in 1994, it has been belonged to the Ministry of Construction and Transportation.

The KCAB consists of six divisions, and controls all the national aviation policy including supervision of air transportation service, aerospace industry development, air transport security, adjustment of air fare, policy-making for airport construction and sustenance of navigation facilities.

## **2) Seoul & Pusan Regional Aviation Bureau**

The Aviation Bureau was established in Seoul and Pusan in 1962. The Aviation Bureau was renamed as Seoul Regional Aviation Bureau and Pusan Regional Aviation Bureau in 1991. SRAB is responsible for the area of Seoul, Kyunggi, Kangwon, Choongchung, Chonbuk province. PRAB is responsible for the area of Pusan, Kyungsang, Chonnam, Cheju province. The major jobs of this body include air traffic control, airport security, aircraft inspection, airport and navigation facilities management, and supervision of the Airport Authority in the region.

## **3) Taegu Area Control Center**

Taegu Area Control Center was originally under control of the Ministry of Defense but after the government restructuring in 1994 it was belonged to the Ministry of Construction and Transportation. This body is working for controlling air traffic and providing flight information within Tague Flight Information Region.

## **4) The Korea Airports Authority**

The Korea Airport Authority was established at Kimpo airport in 1980

and Pusan airport in 1983. This body with its 2,638 manpower manages sixteen airports in Korea. Major jobs of this body include managing airport facilities, ensuring airport security, improving the quality of aviation services.

## **5) The Aerospace Policy Consultative Committee**

The Aerospace Policy Consultative Committee is chaired by Prime Minister. Major jobs of this committee is to make a long-term plan for nation's aviation policy and to allocate national budget for the development of aerospace industry and to adjust different opinions of the ministries.

As shown above, Korea has a weak structure for its aviation administrative service. In order to provide effective administrative services, it is required to strengthen the organizations.

# **V. Current Issue in Korea's Aviation Policy**

## **1) Aerospace Industry**

Korea should develop aerospace industry to enter into developed countries group and promote air transport business intensively to overcome the lack of natural resources. Korean government should also be more active in securing aerospace assets to extend national power to the outer space.

In addition, it is not easy for civilian enterprises to develop aerospace industry without government support. Experience of leading countries in aerospace industry has been good examples. For instance, in the United States production plan for fighter aircraft is tightly controlled by the government. The Western European countries are also in close cooperation for the Eurofighter program to minimize the risk.

Likewise, governmental involvement for the development of aerospace industry is unavoidable. Considering the importance of aviation business it is time to set up a powerful administration for enhancing national aviation business capability.

## **2) Air Transportation**

As mentioned before, since the Seoul Olympic Games in 1988, the demand for air transport has been dramatically increased. Korea's two air carriers, the Korean Air Lines and the Asiana Air Lines, are in service for almost all over the world including America, Asia, Europe, Middle East, and Australia.

It is imperative for Korea to foster the air transport business. Air transport business has great potential for the national economic growth under the circumstance of insufficient natural resources.

Korea has an excellent manpower such as pilots, ground crews, air controllers, and security professionals for fostering the air transport business. These are good resources for building a huge air transport business.

## **3) Aviation Administration**

As examined before, the structure of the national administrations in connection with the aviation policy is not sufficient for dealing with growing demand for aviation service. In particular, the Civil Aviation Bureau with its sixty six personnel cannot provide sufficient services for the growing demands. Amongst them, only a few can be qualified as a specialized personnel for the aviation service.

#### **4) Securing the national air space**

The Ministry of Construction and Transportation is in charge of the security of air space, whereas the Ministry of Defense has the authority to control military aircraft and to secure the air space in wartime.

In the Civil Aviation Bureau, there are only two personnel for the management of air space, as a part of their jobs. However, the job for the air space management is exceeding due to the rapid growth of flight activities in the Korea Air Defense Identification Zone(KADIZ).

#### **5) Civilian use of military air bases**

Twelve military air bases are currently being used by both civilian and military aircraft due to the lack of civilian airport. Consequently, there are potential threat to the safety of air service by operating the high speed fighters and low speed civilian aircraft together.

#### **6) Accident Management**

It is necessary to run specialized teams for air security such as the management of accidents and the inspection of the airport and navigation facilities. In the case of KAL-007 and KAL-858 incidents, Korea could not respond to the accidents effectively due to the insufficiency of the accident management team. Thus, it is required to have a professional team for enhancing the air security.

#### **7) Effective Response to the international cooperation for Aviation Service**

As the international affairs increased in aviation service area, the

government role is rapidly expanding in recent years. To secure national interest effectively in this area, Korea is needed to strengthen the responding capability to the international organizations.

## VI. Policy Suggestion for the 21st Century

In most developed countries, aviation policy is usually managed by an independent administrative organization. For instance, in the United States, the aviation policy is under control of the Federal Aviation Administration (FAA).

In Britain, there are two organizations, Ministry of Transportation and Civil Air Administration, in dealing with aviation service. The ministry of transportation is making aviation policy, playing dominant role in negotiation with foreign countries for aviation business, and investigating air accidents and aviation environment. The Civil Air Administration is not a government organization for dealing with aviation business license, air traffic control, aviation safety inspection, and consultation for national aviation policy.

Japan has similar organizations to Korea. The Civil Aviation Bureau in the ministry of transportation is in charge of aviation service. The Civil Aviation Bureau is responsible for policy-making on air transportation, aerospace industry, aerospace assets, and the construction of airports and navigation facilities.

At the turning point toward the 21st century, labour-intensive industry alone cannot guarantee any countries to enter into the group of developed countries. It is an imperative task for Korea to develop aerospace industry because nation's survival and prosperity is under direct influence of the development level of the aerospace industry. In Korea, aerospace industry

and air transport business are not what they were in 1970s.

Up until the 1980s, Korea's economic growth was heavily dependent on the labour-intensive industry. During the 1970s Korean economy based on the textile industry made a great success owing to the government policy of export-oriented economy. Consequently, Korea has been an exemplar of developing countries.

However, there are fundamental limits for Korea to be promoted to the group of developed countries with the labour-intensive industrial basis. Moreover, economic growth of South East Asian countries with their rich natural resources, low labour cost and technology transfer from advanced countries made Korea's economic competitiveness weaken in the world market.

Labour intensive industry cannot guarantee prosperous vision for the 21st century. Thus, Korea should concentrate its national energy on fostering the high value-added industries such as the aerospace industry.

However, unfortunately, Korea's aviation service has been executed by non specialists of aerospace business under the fragile structure of administrative organization. It is time to strengthen aviation service for national prosperity.

## Conclusion

It is recommended to restructure the national administrative organizations involving aviation policy. It is essential to set up an independent organization for dealing with overall national aviation affairs including the development of the aerospace industry, the expansion of air transport business, the acquisition of the outer space assets, and the enhancement of responding

capability for the international cooperation in the aviation service.

In conclusion, it is urgently required to establish a powerful aviation administration for satisfying the growing demand of aviation service in Korea.