

# 지원전투기 F-2의 일·미 공동개발과 미국의 기술 주도권

(U.S.-Japanese Joint Development of F-2 and U.S.  
Techno-Hegemony)

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## 1. Preface

They say that the Nation can be prospered by the technology and perished by the technology. The Gulf War was the war of technology, and it proved that who controlled the high technology could win the war.

England enjoyed the hegemony in the world of international politics during the middle of 19<sup>th</sup> century. During that time, the one third of the world-wide commodity were made in England. One half of the worldwide produced iron, and cotton were also made in England. England also controlled one fourth of the world trade. And, most of the finance and commerce were controlled by England. The basis of these activities was the textile-manufacturing machine which took the

main role of the industrial revolution. In other words, the technology used for the textile-manufacturing machine was the technology which guaranteed the hegemony and the security of England.

Accordingly, the smuggling of the textile machine was used as the synonym of the threatening to the security of the Nation. In other words, the security of the Nation was guaranteed by the technology. Then, the Nation could win its hegemony by securing the technology. And, at the same time, the Nation would lose its hegemony by not handling the technology properly. Therefore, all the nations are eager to steal the technology from others, and to protect the technology once obtained.

The Japanese plan of national research and production of F-2 was regarded as 〈New Zero Fighter production plan〉 by the techno-nationalism of U.S. Then, U.S. had applied the tremendous political pressure, and proposed the joint production or the introduction of U.S. produced fighter plane. This technological friction almost became a pressure which could have shaken the U.S.-Japanese alliance. Professor George Packard of John Hopkins University stated that 〈The Japan's plan of producing its own fighter plane in 1990's has given a shock to the U.S. aviation industry. Japan is eager to create the more competitive aviation industry. It is considered as a signal which will predict the forming of a military-industrial conglomerate that will greatly influence Japan's production of military hardware and its diplomatic policy.〉

## **2. U.S.-Japanese Joint Development of F-2**

F-2 is the Japanese Air Self Defense Force's next generation

Support Fighter Plane that will replace present day F-1. Its mission is mainly to use against the air intrusion and close air support, and at the same time, it is used for the purpose of air defense. In July 1982, Japanese National Defense Conference has approved 56 Mid-Term Defense Plan which had included the maintenance of 24 FSX. The reason why the maintenance of 24 FSX was needed is that F-1 fighters, which we started receiving in 1977, needed to be replaced by 1994.

The initial development process of F-2 are the followings.

- **Jan, 1985.** Start of the development. Air Staff Office has asked the Defense Agency's Research & Development Institute to study 'the possibility of development and national production of F-2'. After obtaining the affirmative answer, Air Staff Office considered to choose either the national production of the new planes or purchasing the foreign produced planes.
- **Dec, 1986.** Air Staff Office had to actually give up the plan of national development. The term <national development> was changed to <joint development>, and included the meaning of <joint development>.
- **Oct, 1987.** F-16 was decided as the modified mother plane.
- **Nov, 1988.** Memorandum of Understanding (MOU) was issued. A License of Technical Assistance Agreement (LTAA) was signed between Mitsubishi Heavy Industries and General Dynamics.
- **Jan, 1989.** Signing of LTAA caused a problem at U. S. Congress.
- **Mar, 1989.** The development plan was signed.
- **May, 1989.** LTAA was presented to the Congress, and passed.
- **Mar, 1990.** U.S.-Japanese joint team was organized. Joint development has started.

### (1) Japanese cooperation toward the development of F-2

For the technical staffs of the Defense Agency of Japan, the national development and production of F-2 has been their dream since the end of the 2nd World War. They believed that we could be regarded as the 1st rated nation when we can produce the fighter planes by our own hands. After they have developed the super sonic T-2 training plane, they have initiated the development of fighter plane. They have drastically reduced the weight of the main wing by using the compounded materials. The result of their research is now adapted for the construction of main wing of F-2. Also, their research was used as the <active phased radar> for F-2. Thus, the main part of F-2 are the result of their continuous research. For the technical staffs of the Defense Agency, their expectation for the national production of the new fighter plane was great and they could not afford to loose this opportunity for another 20 years ahead.

They could not deny the possibility of U.S. reaction against their undertakings. However, they believed that they could obtain the understanding from the U.S. side. This type of aircraft have never existed before in any other countries, and this is a type of aircraft used to fight against the air intrusion, capable of fighting against the landing vessels, together with the capability of fighting against intruding aircraft. Also, the selection of arms for the defense is the self-determining problem. The Minister of Defense Weinberg, initially, believed that <it is Japan's self-determining problem>.

Japan have explained, in every possible levels, that there is no alternative other than developing new fighter aircraft to fit the situation, that Japan can handle its development within its national

budget, that its development can benefit the Western nations, and that its development will never threaten the U.S. interest. However, these Japanese explanations could not be met with U.S. support.

U.S. has regarded Japan's development of F-2 as unreasonable. Some U.S. opinions among mass media were that the real purpose of Japan's development of F-2 was the creation of defense industries rather than its own defense. These opinions reached the center of U.S. political leaders, and not only the people within the Department of Defense but also within the U.S. Government have feared that Japan will control not only the auto-industries but also aero-industries<sup>o</sup>

In fact, the ship-building, textile, television, computer industries have disappeared one by one in U.S. The American public were beginning to feel what did U.S. gain while winning the war against Soviet?

As the result, on October 1987, the agreement was reached that F-2 fighter plane will be jointly developed, based on the improvement of F-16 fighter. Both U.S. and Japanese Governments have entered the negotiation of making MOU (Memorandum of Understanding). However, U.S. side demanded more than 40% of work-sharing at the stages of development and production, but Japanese side could not accept the offer. On November 1988, MOU was finally signed by accepting U.S. work-sharing will become 35 to 40%. Japan, initially wanted its <national production>, but has conceded. For U.S. it was an effort of the President Reagan who regarded the U.S.-Japanese relationship essentially important, He has made this agreement before the time of his retirement in January 20, 1989.

However, I must say that this project was undertaken by the

mutual determination of the wills of both U.S. and Japanese Governments. Considering the importance of mutual U.S.-Japanese relationship, it was a matter of just cause to develop a superior fighter-plane for the purpose our mutual defense. The key words we used were <work-sharing> and <technology transfer>

## **(2) U.S. perception of Japan Shock & threat to U.S. Techno-Hegemony**

Concerning about U.S. perception of Japanese threat to U.S. techno-hegemony, U.S. Department of Defense has so stated on February, 1987 that <the world wide semiconductor market is now monopolized by Japan, and U.S. arms production is now becoming to be dependent of Japanese production, and it is creating a dangerous situation for the security of U.S. Thus, the American strategy that is to keep the technical and numerical superiority against the enemy can no longer work, as stated in the report published by the Department of Defense Science and Technology Committee>.

This <Japan Shock>, which was the second shock after the <Sputonik Shock> of 30 years ago, gave a biggest echo to U.S. Government, Congress, and industries. The report compared the problem of semiconductor as the <the problem of rice among the industries>, and pointed out the fact that the U.S. products are losing their shares to the Japanese products and to the Japanese technology. The report also warned against the fact that U.S. made new arms products are either to totally use the foreign produced semiconductors or to use the 2nd rated U.S. made semiconductors. The report also pointed out that although Japan is an indispensable ally, it is not wise for us to depend on her for the production of our most important military hardware, and warned that we will become

dependent of Japanese produced semiconductors for the most of new military hardware, if we let this go on.

What we call <Sputnik Shock> was what happened in 1957 that Soviet Union successfully flew the satellite into the outer-space. In 1945, U.S. developed the nuclear weapon and used in Hiroshima and Nagasaki, and became only nuclear possessed nation of the world. However, in 1949, Soviet Union also succeeded in developing the nuclear weapon, and, as the result, America's nuclear superiority had diminished. On top of this, Soviet Union had succeeded in flying the Sputnik into the outer-space. This had meant that Soviet Union could make any nuclear attack from the air. Therefore, it meant for U.S. a disastrous shocking event in term of national security. For U.S., so-called <Japan Shock> could be well compared to the Shock of Sputnik. The fact that the U.S. military hardware had to depend on the technology of Japan, became a shocking warning sign to all Americans.

After receiving this shocking report, DARPA (Defense Advanced Research Project Agency) had started aiding 100 million dollars annually a new research project for the development of new semiconductors. This was a joint project of U.S. Government and industries. Then, U.S. Department of Defense has now shifted from the military centered technology to focus on the general technology.

### **3. U.S.'s Techno-Hegemony Strategy**

Under these circumstances, U.S. has begun to re-build her strategy in order to take back again her techno hegemony.

On January 1988, U.S. Ministry of Defense published a report of the Joint Strategic Committee, called <Selective Deterrence>. The Committee's main points of arguments were: (a) The chance of U.S.-Soviet confrontation is diminishing, instead, the chance of regional wars involving the 3rd world are increasing. (b) The high-tech weapons will be produced in the main industrial nations. (c) In the 21st century, Japan and China will possibly become military powers after their economical accomplishment. Thus, the Committee's report was to indicate the long term military strategy for the forthcoming 20 years, based on the above stated recognition. In other words, the biggest concern for the U.S. strategy, was that Japan will eventually become independent in her own pursuance.

The report has also stated that <The military strength of one nation is the reflection of its economical strength. At present, the economic strength of Japan is rated world-widely the 2nd from the best, and it will continue to grow. For some ten years in the future, the key to the strategic balance is whether Japan will pursue to become a major military nation or not. Even if Japan choose not be the one, Japan's investment strength will be able to change the strategic environment of the world. For example, Japan's economic aide to Soviet will help increase Soviet's potential military strength. On the other hand, Japan's economic aid to its allies will help the security of U.S.

The report has indicated that how the Japanese technological and economical strength will be used gives a direct influence to the interest of U.S. This new strategy has become more clear when the President Bush took the new Government Office in 1989. On March 1990, U.S. Government has published <New U.S. National Security Strategy> and said that the competitive strength of U.S. must come



from Science/Technology. In 1992, President Clinton who appealed America's <Re-birth> and <Renovation> won over President Bush. President Clinton immediately created National Economic Council (NEC) in order to establish a comprehensive economic strategy involving many parts of the world such as the National Security Council does. Also, the Vice-President was assigned to be in charge of taking a strong leadership of clear-cut U.S. techno-strategy on industries.

Clinton Administration re-organized the basic industrial foundation putting the main emphasis on general industries switching from 'spin-off' to 'spin-on', in order to keep the military and technological priorities. And, at the same time, the policy was switched to purchase relatively cheaper foreign produced devices rather than expensive U.S. produced ones. Presently, the so-called Dual Use Technology (DUT) is widely used in the area of military technology. Then, it might possibly threaten the U.S. superiority of military power which is the basis of U.S. global power. The 'bottom-up-review' has so stated that the U.S. technological supremacy must be kept while reducing its own military strength.

#### **4. U.S.-Japanese Defense Technological Cooperation's Future**

In order to promote U.S.-Japanese technological cooperation, I believe that the followings are necessary to pursue.

##### **(1) Promote U.S.-Japanese Mutual Understanding**

Japan's political priority is to firmly keep the solid U.S.-Japanese

Mutual Security System. Therefore, Japan had never intended to rub up U.S. feeling wrong way even in the case of national development of aircrafts.

However, there was a greatly different perceptions between U.S. and Japan at the time of argument over the development of F-2. The Japanese side had though that everything would go well as long as the matter would be consented by U.S. Defense Ministry, and did not pay too much attentions to the variety of opinions among the U.S. public regarding to this matter. The U.S side also had expected to much from Japan, and passed on a false judgment. We could have avoided this type of misunderstanding, if we did have a solid, reliable policy in regard to our national security and technology. We need to let U.S. side clearly know our intentions. For the purpose creating our mutual understanding, it is necessary to have face-to-face meetings represented by the responsible persons of each levels to exchange their views and opinions. For the F-2 project, U.S.-Japanese Joint Technological Administration Committee was established, represented by Department of Defense Technological Research Institute Aeronautical Development Administrator (JASDF General) from Japanese side and Ministry of Air Force Research Project Administrator (U.S. Air Force General) from U.S. side. And, they were met together bi-annually in each respective places. Also, there were sub-professional committees under them, and they were met together frequently. Also, each side exchanged their liaison officers to promote their mutual understanding. This idea of setting up these committees was proposed by the U.S. side at the initial stage, learnt from their past experience. And, it worked effectively in order to solve many problems. The most effective part was that the General Officers of each have met bi-annually. Between U.S. and Japan, there are

regular Committees already established such as U.S.-Japanese Equipment and Technology Committee. We will need to have more committees to discuss the problems frequently and widely.

## **(2) Prepare U.S.-Japanese mutual cooperative system on Defense Technology**

F-2 was not initially intended to become U.S.-Japanese Joint project. But, the was that the Japanese side intended to produce its own nationally produced new fighter plane and the U.S. side intended to sell its own aircrafts to Japan. The result was that the both sides politically agreed to develop the new plane jointly. However, this has opened up the new way for the future U.S.-Japanese relationship, and has become a symbol of 〈U.S.-Japanese Technological Mutual Dependency〉. This project was so accomplished by contributing from both sides that U.S. offered its specialized area of aircraft body and its engines, and Japan offered its specialized area of electrical and material engineering. Also, the expenditures were funded by Japan. Then, the project was developed and the product was made to fit our natural environment and to fit the need of our Nation.

There were some good merits for both sides. Through this joint project, we have learned U.S.'s superior aero-mechanical technology pertaining to the design and structure of the body, while U.S. gained Japan's vanguard technology pertaining to the consolidated use of the compound material of the wing. Also, during the process of pursuing the joint project, there were some adjustments needed to be settled sue to the difference of cultures. However, we were able increase our mutual trust, and made a significant progress in creating a close U.S.-Japanese relationship.

## 5. Conclusion

As we have already experienced during the Gulf War, the modern warfare is the war of technologies. Then, who will control the technologies, can control the world.

For Japan, U.S.-Japanese Security Agreement has been serving as the basis of our National security, and, at the same time, it served to keep the peace and security of the region of East Asia. Based on this Agreement, Japan has been receiving many helps from the United States. Especially, in the area of technologies, we have received many offers such as free technology offer and license production. And, the effect of these offers are immeasurable.

In the recent years, we are encountering some frictions in the areas of industries and economy as Japan's economical strength is gradually elevated. Now, these frictions are no longer limited in the area of economy, but coming into U.S.'s most sensitive area of Security.

For the sake of Japan, we must recognize the hegemony of U.S. as the world super power, by choosing our position of being No.2 in order to strengthen our U.S.-Japanese Security Agreement by increasing our bargaining and diplomatic power, and contribute ourselves for the sake of world stability, and I believe it is the most rational and better decision we will make.