

Section 2. Acquisition Reform, Defense Production, and Technological Bases

In order that our defense capabilities demonstrate their function sufficiently, not only are the organizational and human resource bases described in the previous section important; so too is constant review of the frameworks behind material bases (including the various types of equipment and the defense production and technological bases that support them) and the acquisition of equipment and materials that are intimately related to the efficient upgrading of defense capability.

This section will describe efforts to enhance and strengthen material bases of this kind.

1. Awareness of the Problems Relating to the Acquisition of Equipment and Materials

Appropriate and efficient acquisition of defense equipment is of extreme importance to improvement of the defense capability of Japan. It is also imperative for us as an independent state to always preserve an indispensable production and technological base for defense equipment in Japan, in order to secure the country's own security. With such a sense of purpose, the Ministry of Defense has previously addressed the consideration and implementation of important measures for the acquisition of equipment, in particular, from the perspective of streamlining and rationalizing procurement and supply of equipment and materials, as well as fairness and transparency in relation to acquisition.

Behind this is the fact that, due to recent changes in the acquisition environment in terms of increasing prices caused by the severe fiscal condition and increasing performance of equipment, we now find ourselves in a situation in which it is becoming ever more important to acquire equipment and materials with consideration to cost, and in which it is necessary to increase the suitability of procurement in order to fulfill our obligation of adequate accountability to the people with regard to the use of their taxes (as symbolized by discussions at the Government Revitalization Unit). To this end, it is vital to continue to maintain fairness and transparency in equipment acquisition, while continuing to drive acquisition reform in order to put effective measures in place to control risk and cost, and facilitate the acquisition of superior equipment.

In recent years, factors such as the trend toward restricting defense related expenditures have caused Japan's defense production and technological bases to run into a serious situation, with domestic defense-related companies having trouble securing business. It is envisioned that if such companies either withdraw from defense operations or become bankrupt in the future, there will be serious consequences to the improvement of Japan's defense capability. Hence, it is required when engaged in advancing future acquisition reform, to pay due consideration to the importance of our defense production and technological bases.

2. Main Efforts so Far Relating to Acquisition Reform

1. Strengthening Life-cycle Cost Management

The main equipment and materials are used for extended periods after procurement, so it is of extreme importance to promote efficient and rational management during the entire life cycle of such equipment, from concept, development, production, and operation (including maintenance, repair, and upgrades) through to disposal. Appropriate management of cost throughout the life cycle of equipment, beginning with decision-making based on judgment of cost effectiveness at the juncture of launching into development and production, contributes to the acquisition of effective and efficient equipment.

In March 2008, the Ministry of Defense commenced a trial of life cycle cost (LCC)²⁹ management. It established a uniform calculation standard for each class of equipment, and organized the results of estimates of

LCC for the main equipment subject to the trial³⁰ as an annual report. The results were reported to the Minister of Defense and publicly announced in August 2008 and August 2009.

From April 2010, based on the results of the trial so far, it gradually expanded the target equipment under management and implemented cost calculation and cost management, while continuing to advance the application of LCC management. The latter focused on areas such as consideration of cost comparisons for equipment selection and acquisition format, trade off studies between performance and cost, and cost reduction. Moreover, in April 2009, a life cycle cost management section was set up in the Equipment Procurement and Construction Office, and the management system within the Ministry improved in relation to LCC.

2. Expansion of Incentive Contracts System

When not enough data has been obtained relating to areas such as contract-specific production costs, during fixed price calculations performed by the Ministry of Defense for the purpose of contracting, it is not uncommon to use a contract method to decide the prices paid, after inspections have been carried out on performance figures based on the implementation of the contract. In such cases, even if cost-reduction is achieved by efficiency efforts in the contract execution process of the company, the results are not passed on to the company in question, because the contract is changed with the cost-reduced price deducted from the contracted amount. It furthermore leads to a decrease in future contracted amounts and profits, from the next contract onwards. Hence, it is difficult for the company to foster the desire to address the issue of cost reduction. On the other hand, if costs overrun, the contracted amount is not increased, which is also often displeasing to the company.

The Incentive Contracts System promotes proactive cost-reduction activities to the company, as an incentive to increase profit. It aims to decrease the procurement costs for equipment and materials. The cost-reduction activities of a company contribute to increased productivity, as well as a strengthening and promotion of low-cost operation. By extension, it is thought to lead to stronger defense production and technological bases. In European countries and the United States, cost reimbursement contracts are applied which contribute to profits in an additive manner when a company has achieved cost-reductions after having their incurred costs compensated, as are definitive contracts that expect autonomous efforts by the company.

The Ministry of Defense also introduced a price reduction proposal system in 1999, which in 2002, was enhanced, revised, and adopted as the Incentive Contracts System. However, during the nine years to 2008, it was used just twice, so one cannot say that it has achieved success in reducing the expense of procurement. Consequently, the Incentive Contracts System has been completely reviewed, the scope of targets expanded to companies' cost-reduction activities across the board, and a new system implemented to increase effectiveness, in areas including improvement of the examination procedures for business proposals. As of January 2010, it has already been used twice.

3. Efforts to Curtail Cost

In order to curtail expenditures related to the R&D, procurement, maintenance, and management of defense equipment, we are striving to apply a range of techniques including the short-term intensive procurement in an individual year, of equipment and such planned for procurement over multiple fiscal years, the lump-sum purchase of equipment for two or more Self-Defense Forces, the part commoditization and sharing of methods during development, promoting the use of commercial

Fig. III-4-2-1 Cost Reduction Conditions

FY	Cost reduction amount ¹	Cost reduction rate ²
FY2007	Approx. 170 billion yen	Approx. 8.8%
FY2008	Approx. 160 billion yen	Approx. 8.3%
FY2009	Approx. 280 billion yen	Approx. 13.9%
FY2010 (provisional value)	Approx. 150 billion yen	Approx. 7.9%

Notes: 1. Cost reduction amount = amount required at the time (theoretical value before optimization measures) – actual total amount
2. Cost reduction rate = cost reduction amount ÷ (equipment and material purchase expenses + cost reduction amount)

items, private sector outsourcing, and the streamlining of maintenance and improvement costs. Since 2007, the results of such efforts have been compiled, and the performance in reduction compared to 2006 organized and published. The situation regarding cost reduction since 2007 is as shown in Fig. III-4-2-1.

(See Part II, Chapter 2, Section 5)

4. Efforts to Increase Fairness and Transparency

The Ministry of Defense aims to increase fairness and transparency in relation to the acquisition of equipment and materials, and has thus far implemented a variety of measures from the view of making contracts more appropriate, and strengthening checking functions.

Recently, as a part of the effort to make public procurement more appropriate across the whole of government, a number of measures are being tackled in the Ministry of Defense, including the introduction and expansion of a comprehensive evaluation bidding system³¹, the increase of multiple-year contracts, making bidding procedures more efficient, and reviews of sole source contracts. Alongside these measures, in July 2006, a deputy chief in charge of auditing was established at the Equipment Procurement Office³² (as it was then named), as was an auditing division in the Internal Bureau, working toward strengthening checking functions.

In 2008, based on cases such as Yamada Corporation's falsification of estimates by foreign manufacturers in order to overcharge the Ministry of Defense, the following steps have been taken as a response to general import procurement problems.

- 1) Special contract terms newly established for general import procurement, direct reference to foreign manufacturers with regard to estimates, etc., and doubling of the size of the penalty charge for overcharging.
- 2) Introduction of import procurement surveys which examine the management and accounting systems of commercial businesses.
- 3) Increase in the number of import procurement specialist officers resident in the United States affiliated with the Equipment Procurement and Construction Office from three to ten, in order to strengthen the function of on-location price surveying.
- 4) Establishment in 2009 of an Import Procurement Division in the Equipment Procurement and Construction Office, positioned to account for import procurement matters in a specialist manner.

On the other hand, cases of irregular bidding were identified in an FY2008 defense inspection, in the procurement of office supplies, such as office furniture by the ASDF 1st Depot. Hence, in May 2009, the Ministry of Defense notified the Japan Fair Trading Commission based on the Bid-rigging Consulting and Information Manual. In June of the same year, the Japan Fair Trading Commission carried out on-site inspections of the enterprises and ASDF, and in March 2010, issued a cease-and-desist order and an order to pay charges to the companies concerned based on the Anti-Monopoly Act, while demanding that the Defense Minister take steps toward improvement.

With circumstances such as these, the Ministry of Defense set up an "Exploratory Committee for Bid-rigging Issues in the ASDF 1st Depot for Office Supplies such as Office Furniture," with Parliamentary Secretary for Defense Daizo Kusuda as chief, and is advancing the investigation of problems and consideration of important steps.

5. Other

As central procurement, the Ministry of Defense is purchasing in the Equipment Procurement and Construction Office, mainly warships, aircraft, weapons, vehicles, and other important equipment and materials, and items common to all forces. As regional procurement it is focused on purchasing mainly things closely associated with the execution of duties by units in each Self-Defense Force and other organizations.

Central and regional procurement differ in character in terms of the items dealt with and procedures. However, as part of review efforts, in order to increase the transparency of the procurement procedure further, since July 2008, the high price sole-source contracts of regional procurement (under the same criteria of 150 million yen and greater, as central procurement) became items requiring ministerial approval.

Furthermore, system-building was embarked upon in 1999 to manage data on central and regional procurement in a unified manner. Due to the referencing of similar cases of procurement, there are hopes for effects such as making it easier to see the benefits of considering bulk buying.

In addition, with a goal of enhancing and strengthening functions including the realization of efficient procurement, quality control and human resource development (all of which contribute to cost-reduction), in April 2010, the business segments of the Equipment Procurement and Construction Office were reorganized, and the Planning and Coordination Division, and Quality Control Division were abolished, to be newly replaced with the establishment of the Procurement Planning Division and Business Coordination Division.

3. Domestic Defense Production and Technological Bases that Support Defense Capability

1. Characteristics and Current Status of Defense Production and Technological Bases in Japan

Defense production and technological bases in Japan play an important role in the areas of acquisition of equipment and materials able to exhibit maximum capabilities, stable, mobile and efficient supply of acquired equipment and materials to front-line units, as well as the maintaining of these functions.

By maintaining defense production and technological bases domestically, not only does it become possible to acquire an operational concept suitable to the special characteristics of the Japanese land and its policies, and equipment and materials which possess the desired performance, but we can then secure independence in our security and demonstrate reduction effects in the form of potential defense capability, having benefits in a number of places, including effective and efficient acquisition of the above-mentioned equipment and materials in a short time, as well as maintenance and supply. Always maintaining and developing these bases has significance in areas such as ensuring bargaining power against other countries when procuring equipment and materials from abroad, and facilitating the acquisition of equipment and materials at terms beneficial to Japan. Furthermore, many cases can be observed in which the technologies cultivated in development and manufacturing of defense equipment has extended to other industries. For example, nuclear reactor turbine axles are manufactured by making use of manufacturing technology for gun barrels which increased their strength, useful life, and accuracy, resulting in a leading share in the world market. Areas such as these are significant in that they create economic and technological strength, as a part of the national strength of Japan.

On the other hand, for the main items of equipment, aircraft, warships, tanks, guided missiles and so on, the initial investment is generally large, a high degree of technical capability is required, and a great deal of time is necessary for the training of engineers; therefore the number of companies which are actually able to develop and produce defense equipment ranges domestically from just one to a handful. There is a danger that the withdrawal of even a single company would create an immediate obstacle to the acquisition and maintenance of equipment and materials. Indeed, recently, there have been some cases where subcontractors carrying out the manufacture of parts and components have withdrawn from the defense business, while in some fields, preservation of the specialist technical capability necessary for development and manufacture of defense equipment is becoming ever more difficult than it has been before.

The defense equipment and materials market in Japan is limited by domestic defense demands. Hence, due to reasons such as effectiveness measures not working, there are cases when the unit price for acquisition becomes high in comparison to similar equipment from abroad. Because of factors such as this and the severe fiscal conditions, there is a decreasing trend in the amount of main equipment procured, and it is feared that this trend may drive up the unit

price of acquisition still further, and lead to a vicious circle of ever-decreasing procurement amounts.

Moreover, with increasing levels of performance thanks to trends in the latest military science and technology, the price of equipment is on an increasing trajectory regardless of whether it is domestic or foreign. However, in many countries, European countries and the United States specifically, it is no longer the case that up-to-date equipment is developed and manufactured within a single country. Rather, the risk and cost is borne across multiple countries. International joint development and manufacturing is progressing, with more advanced equipment and materials being manufactured and developed. (See Reference 78)

2. Production and Technological Bases for Fighter Aircraft

Fighter aircraft are one of the main pieces of equipment of the SDF. Production of the F-2 fighter which has been manufactured since 1996 is going to end with the 2011 supply. After that, it is forecast that a blank period will arise in Japan, during which no fighters will be produced. The “Meeting on the Nature of Production and Technological Bases for Fighter Aircraft” was established in June 2009 in order to facilitate discussion between the government and the private sector (including experts) regarding the question of what kind of effects a period with no aircraft produced like this will have on the production and technological bases for fighter aircraft in Japan. After the 7th meeting, an interim report was published in December of the same year³³. The outline of the report is as follows.

(1) Current Situation of Fighter Aircraft Production and Technological Bases

Due to the hitherto continuous production of fighter aircraft in Japan, as well as the R&D, improvement and repair necessary to use them, domestic production and technological bases have been maintained and improved, and three elements which are absolutely vital to the use of fighter aircraft, “maintaining a high rate of operation,” “capability increase appropriate to use by Japan,” and “maintaining safety” have been secured.

(2) Effects of Suspending Production

Suspending the production of fighter aircraft will mainly cause a loss of opportunity to use the technological capabilities developed during production and manufacture, a reduction in the number of engineers trained in R&D and the improvement and repair of fighter aircraft, and other issues such as withdrawal of subcontractors due to the fall in procurement numbers for fighters and other factors. As a result, there are fears of a decline in operational support for areas such as improvement and repair of fighter aircraft, and difficulty in maintaining and improving the level of technology required for R&D relating to future fighters.

(3) Facing the Future of Production and Technological Bases for Fighter Aircraft

Due to the effects on usage and future R&D of suspending production of fighter aircraft which are necessary in demonstrating the defense capability of Japan, an extremely important challenge is maintaining and developing the production and technological bases for fighter aircraft. It is necessary for the Ministry of Defense, while steadily advancing the aircraft-related business being implemented at present, to promote procurement and R&D that will enable it to consider development of fighter aircraft as an option. Based on such thinking, the following three challenges should be addressed.



Meeting on the Nature of Production and Technological Bases for Fighter Aircraft

- 1) Close examination of the bases which must be maintained domestically in the future for the use of fighter aircraft, from the perspective of maintaining domestically the vital bases behind the three elements, “maintaining a high rate of operation,” “capability increase appropriate to use by Japan,” and “maintaining safety.”
- 2) Basing fighter aircraft-related R&D in the future on factors such as “seeds and needs,” and the current situation regarding production and technological bases in Japan, and deciding on a vision based on the medium-to long-term.
- 3) Consideration and promotion of measures including the conversion for civil use of technology cultivated during the development of SDF aircraft, as something which will maintain and vitalize the bases shared across aircraft as a whole, given that some of the production and technological bases for fighter aircraft are maintained by the development and production of other aircraft.

4. Strengthening Relations with the Commercial-off-the-shelf (COTS) Technology Field

In regard to R&D at the Ministry of Defense, the National Defense Program Guidelines state that efforts should be made “by proactively introducing advanced technology of industrial, academic, and governmental sectors.”

In order to investigate and introduce superior technologies in the private sector Technical Research & Development Institute (TRDI) has selected basic technology research themes, and introduced investigation and research projects that invite public participation by not only private corporations, but also various research organizations. Furthermore, technological information is exchanged between organizations such as the Japan Aerospace Exploration Agency (JAXA), Information Technology Promotion Agency (IPA), and National Maritime Research Institute. Utilization of such projects is intended to push forward introduction of a wide range of superior technology from research organizations and corporations.

It is also important to spread the outcome of R&D at the Ministry of Defense into the private sector. Not only will the conversion of aircraft that have been developed as SDF aircraft for civil use (which is being considered by companies in charge of development) lead to the maintenance and strengthening of defense production and technological bases, it can also be expected to reduce the procurement prices for SDF aircraft. As such, the Ministry of Defense is cooperating and collaborating with the relevant ministries and agencies and promoting its consideration. In April 2010, the “Conference on the Civilian Use of Ministry of Defense Developed Aircraft” (which included experts) was established, and following five meetings and public comment procedures, a policy was compiled regarding such issues as how corporations that use such aircraft are to pay usage fees to the national government and the disclosure and use of technology-related materials possessed by the Ministry of Defense, in aim of establishing a concrete system design for converting aircraft to civil use by August 2010³⁴.

5. Research & Development of the Technical Research & Development Institute (TRDI)



Researching advanced personal equipment

In order to introduce emerging technologies into R&D, and to conduct deeper analysis on operational needs, the Technical Research and Development Institute has adopted a number of new R&D methods³⁵. A pilot research project has been underway since FY2009 allowing individual SDF personnel to communicate with each other and share information. In order to reflect the opinions of users concerning operational performance improvements and weight reduction in the research of this system technology, a wide range

of evaluation data is being obtained based on practical operation, resulting from the use of experiments³⁶ on C4ISR (Command, Control, Communication, Computer, Intelligence, Surveillance and Reconnaissance) and cooperation between defense force units.

In view of joint operations to realize organizational combat through networking of forces, high-performance digital data link systems are being developed for loading fighter aircrafts.

From the perspective of optimizing the performance, schedule, and cost throughout the lifecycle of equipment, it is effective to thoroughly conduct comparison and analysis on a number of proposals in areas including performance and cost at the stage of concept, research, and development. Additionally, it is effective to continue with follow-up improvement after deployment of equipment.

6. Organization of Opinion Exchange Meetings by Minister of Defense Toshimi Kitazawa and Corporations Involved in Defense

Based on recognition of the recent problems pertaining to acquisition reform and defense production and technological bases, in January 2010, the Ministry of Defense, under the leadership of Defense Minister Toshimi Kitazawa, implemented a new trial in order to engage in direct opinion exchange between parties including senior Ministry of Defense officials and the chief executives of companies involved in defense. This was hoped to serve as a foundation behind the vitalization of defense production and technological bases, through information sharing and policy dialogue between the government and the private sector. From the attending companies were opinions pertaining to a review of a contract system that rewards efforts by companies to become more efficient, and the necessity for medium-to long-term defense industry strategies to increase the predictability of directions in equipment procurement and R&D, due to the severe current situation in defense production (e.g., the ability for companies themselves to maintain defense production and technological bases is approaching its limit). In addition, with the current situation regarding the promotion of joint international development by the various advanced nations, the necessity was highlighted of ensuring that the technological strength developed by Japan thus far, is not left behind by advancing international technological levels.

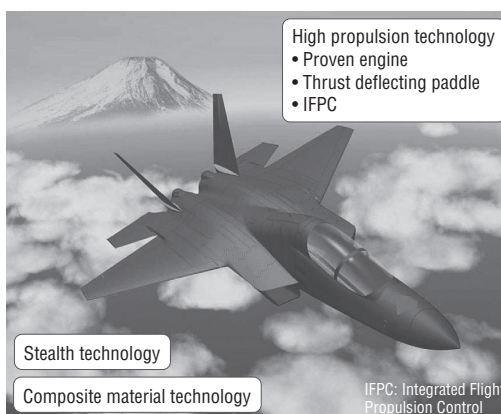


Minister of Defense Kitazawa delivering an address at a meeting for an exchange of views

Advanced Technology Demonstrator

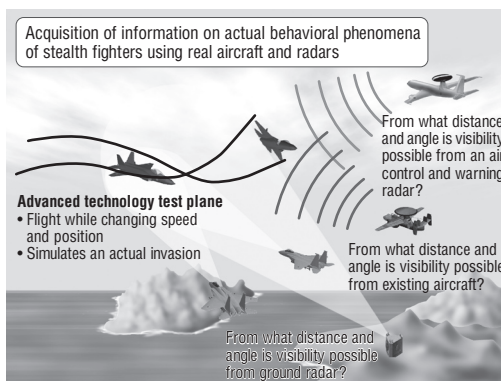
Q: What are the trends in other countries regarding fighter aircraft?

A: The current trend is for fighters to be furnished with the stealth and high maneuverability typified by the American F-22, and with high-level avionics, the so-called fifth generation jet fighters, which boast overwhelming superiority in military potential. In other countries, R&D is progressing in relation to the key technologies required by these fifth generation jet fighters, such as stealth and high maneuverability.



Q: What kind of research is being carried out using advanced technology demonstrators?

A: By conducting actual flight experiments into the various advanced technologies (such as stealth, high maneuverability, and light-weight, high-strength materials), advanced technology demonstrators are thought to play a useful role in the consideration of air defense conditions for stealth aircraft, which have the potential to be deployed near Japan in the near future. Stealth fighters have a small radar cross section (RCS), making it difficult for them to be detected by radar. However, the actual appearance on radar depends not only on the size of the RCS. It can also vary widely due to factors such as the fuselage shape, direction of travel, and method of radar signal processing. Nevertheless, since we have yet to actually observe a stealth fighter with known RCS by radar in Japan, we have no real data on how stealth fighters appear on radar. Therefore, by using radar in advanced R&D, to observe the flight conditions of an advanced technology demonstrator (whose RCS has been measured beforehand), it will be possible to gather the necessary technical data required to acquire and pursue stealth fighters.



7. Regarding the Future Nature of Acquisition and Defense Production and Technological Bases for Equipment and Materials

Regarding the acquisition of equipment and materials, the Ministry of Defense, taking into consideration all the factors such as performance and price of equipment, the simplicity of maintenance and supply, education and training, and the necessity of Japan's unique improvement on acquired equipment, has made proper judgment about the method of acquisition, specifically including internal development, licensed domestic production, and import, on the basis of thorough examinations on cost-effectiveness. However, due to the severe fiscal conditions and increasing prices of equipment and materials, the Ministry of Defense cannot envision a large-scale increase in acquired amounts anytime soon. Therefore, in order to continue to acquire superior equipment and materials in terms of performance and cost-effectiveness, and to enhance and strengthen defense production and technological bases, the Ministry of Defense must utilize measures such as LCC management for cost reduction and efficient

[COLUMN]

VOICE

Even with the Three Ds (Dangerous, Dirty, Difficult), There is also a H, "Honor" —Voices of Skilled Workers at Submarine Shipyards—

Mr. Kenji Yoshida, Kobe Shipyard, Kawasaki Shipbuilding Corporation

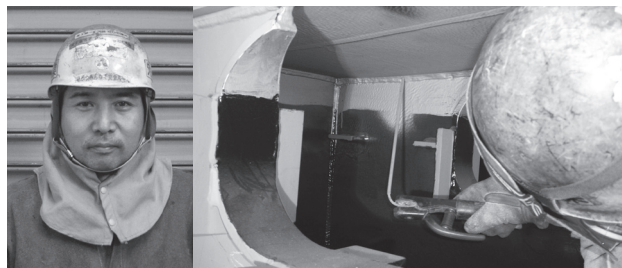
More than anything, "high-level" welding work, which is performed in an environment which more than anything is "enclosed" and "hot," supports the construction of submarines which operate more than anything, "quietly" and "deeply." It requires more than five years after joining the company to acquire the ultra high-strength steel welding technology that is used in submarines. Just as a long time is taken to attain the completion of a submarine, so too is a long time taken for new welding engineers to attain the high-level techniques required to construct a submarine.



Mr. Yoshida, a skilled welding engineer, and welding work (Kawasaki Shipbuilding)

Mr. Naoki Kuroda, Kobe Shipyard & Machinery Works, Mitsubishi Heavy Industries, Ltd.

When a newly built submarine has raised the Naval Ensign of Japan and left the dock at the shipyard to the sounds of the Warship March, I recall the faces of the new welding engineers that I have trained, and the parts of the vessel whose welding I had a hand in, and begin to well up. Once time has passed since the launch of my child



Mr. Kuroda, a skilled welding engineer, and welding work (Mitsubishi Heavy Industries)

(the submarine), and it returns back to its mother dock together with the signs of its being active on the maritime defense frontline (the damage and dirtiness), I think to myself, "you did well," and once again begin to well up.

acquisition, while at the same time, based on the principle of “selection and focus,” it must clarify the defense production and technological bases which should be developed and maintained with emphasis on the security perspective. It is similarly vital to endeavor to increase the attractiveness of the defense market, with for instance, the establishment of contractual systems which award parties who have worked at cost reduction.

Based on this awareness, the study group on contract systems³⁷ has been held since June 2010. The meeting is attended by external experts and is a venue where energetic considerations are paid to the systematic aspects of contracts made between the Ministry of Defense and corporations as well as the various systems related to procurement of equipment and other goods from a wide range of perspectives including accounts, distribution and marketing, corporate legal affairs, and public procurement, in order to be able to produce new policies.

Furthermore, in addition to the above mentioned efforts, the departments within the Ministry concerned with equipment and materials acquisition should aim for close coordination at every stage of a project (from the planning stage, through R&D, mass production, maintenance and operation), within the cross-organizational framework of the Integrated Project Team (IPT) system in order to make the pursuit for the most appropriate choice in the acquisition process for individual equipment and materials more effective. Such efforts in acquisition such as this will maximize the cost-effectiveness of individual equipment and materials and by extension, is expected to enable optimization of resource allocation across the board.

(See Reference 79)

[COLUMN]

VOICE

A Role in the Defense Production and Technological Bases that Support the Security of Japan

Mr. Shu Komatsu, Group Manager

Mr. Daisuke Hosokawa, Engineer

1st Development Section, Technology Laboratory, Special Machinery Headquarters, Komatsu Ltd.

Our company has a proven track record for the manufacture of artillery ammunition, armored vehicles, and more. In doing so, we carry out research and development primarily of armored vehicles, such as the light armored vehicles which we deliver to the GSDF and ASDF.

The development of equipment generally requires multiple years, once the stage of devising and revision of the design drawings (some of which run to thousands of pages) has passed, then from the work to construct a concept car through to deployment to the troops, due to our goal of achieving mass production which incorporates the improvements elucidated through various experiments.

In contrast to this, was the extremely special case when the SDF units were dispatched to Iraq seven years ago, at which time, modifications to vehicles such as the light armored vehicle that we manufacture had to be conducted in a mere three months.

Due to the uncertainty in the region, we found ourselves in a situation of having to grope for the answers to everything we did, beginning with measures to strengthen our defense capabilities; for instance, we had to ask ourselves what kind of modifications would be made, and to what extent. Nevertheless, the entire was full of enthusiasm, believing that “We cannot allow defects in the equipment we develop and manufacture to be the cause of any deaths.” However, in the limited time until the forces were dispatched, it was required that we solve the bare minimum necessary problems on a prioritized basis, such as the question of “How strong should we make the wire cutters used to protect troops from wire traps set across roads and similar threats?” We were immersed in a tense atmosphere, the likes of which those of us in the company had

never before felt. I feel that significant to our success in completing the modification work in around three months was our wholehearted dedication during the course of planning and development until that point. Our attention to detail went as far as analyzing the effect that each individual screw would have on the vehicle as a whole.

Accordingly, the mission was completed without a single person losing their life. This was due primarily to the exhaustive efforts of the dispatched forces. However, when viewing the success of the equipment being shown on the television, I could feel that we too, contributed to the security of Japan.

In our company at present, independent research is underway to use hybrid-electric drive technology to improve areas such as vehicle quietness, mobility, and extensibility, and vastly increase the performance of future armored vehicles. I feel that working toward the cultivation of each and every technological need like this, and enabling the swift supply of the necessary technology at the necessary time is of the utmost importance in support of the defense of Japan. With this in mind, I would like to continue to apply our past experience, and build upon this by daily study.



Group Manager Mr. Komatsu
checking a design drawing



Engineer, Mr. Hosokawa drawing up
a plan on the computer



The light armored vehicle dispatched to Iraq