

COUNCIL  
WORKING PARTY ON SHIPBUILDING

JAPANESE SHIPBUILDING POLICY SINCE 2001

(Paper by Japan)

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## JAPANESE SHIPBUILDING POLICY SINCE 2001

### 1. Direction of Shipbuilding Policy

1. The world trade mostly depends on ocean shipping and sea-borne trade, which is vital in enabling the global economy to function. The fact that Japan is an island nation makes ocean shipping absolutely essential for domestic as well as international trade. The shipbuilding industry in Japan provides the merchant vessels necessary for our ocean shipping needs and thus plays an important role in Japan.

2. The Japanese shipbuilding industry has held a top share in the world shipbuilding market for nearly half a century and we believe it has contributed to the advancement of maritime transportation and the world's economic development.

3. While most of manufacturing industries in Japan have been increasing their overseas production ratio, the shipbuilding industry remains one of few industries with a domestic production of nearly 100%. Other shipbuilding nations such as Korea and China are expected to be more competitive, and it is concerned that a downward swing of global shipbuilding demand could bring an imbalance of supply and demand up to the surface.

4. On the domestic front, a large number of skilled workers and engineers are reaching retirement age, and its negative effect on skill and expertise level is of particular concern.

5. In this difficult climate, the Japanese shipbuilding industry felt a need to redefine itself as a *challenger* and to develop a strategy to establish a sustainable competitive advantage. It was also necessary to review the current business environment and the regulatory system surrounding the industry.

6. Taking these into account, we developed a strategic guideline for shipbuilding industry policy and released it as *Recommendations by Competitive Strategy Conference for the Shipbuilding Industry* in June 2003.

7. The executive summary of the final report, *Vision and Strategy of Japanese Shipbuilding Industry: New Challenge in 21<sup>st</sup> Century*, follows.

#### ***Principle of Shipbuilding Industry***

8. Japan, as an ocean state, is to maintain a shipbuilding industry base capable of supplying vessels to satisfy its people's needs, such as trade, fishery, and maritime safety.

9. Japanese shipbuilding industry is to lead technological innovation, and to contribute to the advancement of maritime transportation and the development of an environmentally-friendly maritime transportation system.

10. Japanese shipbuilding industry is to ensure its viability to maintain domestic production base for the long term.

*(1) Vision*

11. To establish a structural foundation for the Japanese shipbuilding industry to play a central role in the global shipping and shipbuilding industries:

1. Maintenance of domestic building capacity of one third of world market demand.
2. Establishment of technical capabilities to lead the world shipping and shipbuilding industries.

Target: 2010

*(2) Basic Strategy: basic course of actions and means to realize the vision*

1. Improvement of the Competitive Environment
  - Adoption of a domestic shipbuilding policy that encourages a competitive environment.
  - Establishment of fair, competitive conditions in international market.
2. Strengthening comprehensive competitiveness, focusing on leading types of ships in the commercial market by pursuing economies of scale; advancement of production technology; shortening construction period; fostering skilled workers with necessary expertise.
3. Promotion of a new research and development approach, led by the world-class Japanese maritime cluster consisting of universities, research institutes, classification societies, shipping industry, ship machinery industry, etc.

**2. Policy to realize specific strategies**

12. To effectuate the specific strategies described above, Japan is working on various policies. One of them is an effort to support human resource development.

***Human Resource Development Support Program***

13. The Japanese shipbuilding industry has maintained a domestic production rate of almost 100% while holding a leading position in the world for half a century. In recent years it has competed for the top position with Korea. No other industry is of comparable status. One of the competitive edges of Japanese shipbuilding industry is in its excellent human resources. In actual manufacturing process, where it is difficult to fully automate production lines, highly experienced skilled workers capable of sophisticated judgment and discretions are invaluable assets.

14. During the shipbuilding downturn after the oil crisis of 1970s, shipbuilding companies held back on recruitment of skilled workers, and today nearly half of the skilled workers in the industry are over 50, while skilled workers in their 30s account for just over 10%. Age distribution of skilled workers in the industry is highly disproportionate. During the next decade, the industry is expected to see the greatest tide of generational change ever experienced. Without effective action, skill level on manufacturing floor could degrade quickly and the industry could lose its global competitiveness.

15. It is necessary to facilitate transfer of expertise of shipbuilding skills by effectively training the workforces at every phase of their career: for example, classroom lectures and skill trainings for the newly recruited; and specialized skill trainings for mid-level skilled workers. It is necessary to build a human resource database and actively utilize older skilled workers with experience as trainers.

16. In April 2004, in partnership with shipbuilding related organizations, the Shipbuilding Skill Development Center was founded within CAJS (The Cooperative Association of Japan Shipbuilders). The

center commenced to develop training material and prepare necessary equipments to support training efforts to be held at regional shipbuilding industry centers. Intensive training programs were launched in Innoshima and Imabari in FY 2004, in Higashinippon and Oita in FY 2005. In addition, a training program for trainers has started, and teaching materials for on the job training (OJT) has been developed and now are supplied to shipyards.

### **3. Policy for Creation of New Demand**

17. Sea-borne trade is essential in enabling the global economy to function and will continue to play an important role. In recent years issues such as protection of the global environment and improvement of transportation efficiency have been of significant interest in the world shipping community. It is necessary for the shipbuilding industry to respond to those concerns. Such efforts will lead to creation of new demand.

18. Japan promotes the following research and development efforts to create new demand.

- Creating replacement demand by developing environmentally friendly and safer ships.
- Development of new demand for shipbuilding industry by research and development of new technology, such as super large floating structures.

19. The following R&D programs are examples of our ongoing efforts.

20. The next generation of coastal ships—Super Eco-Ship—is an innovative ship design with a gas turbine and a contra-rotating podded propulsor driven by electric motors. Super Eco-Ship is environmentally friendly with CO<sub>2</sub> emissions three quarters of conventional coastal ships; NO<sub>x</sub> one tenth; and SO<sub>x</sub> two fifth. It also is economically improved with 20% more onboard cargo capacity and 10% greater overall efficiency. Onboard working environment will be improved with significant noise reduction and onboard maintenance-free engines. Vessel maneuverability and controllability will be significantly improved. Its ability to move laterally makes approaching to, and moving away from, the pier easy. It is expected that the development and commercialisation of Super Eco-Ship will revitalize the coastal shipping industry, help to accelerate a modal shift to coastal shipping and contribute to a reduction of environmental load imposed by transportation.

21. Embarked on in 2001, the Super Eco-Ship R&D program has already resulted in new technologies that prepare for the modal shift to support commercialization of Super Eco-Ship. Currently NMRI (National Maritime Research Institute) is developing an optimal hull form design manual and on operation manual. Prototypes of Super Marine Gas Turbine and contra-rotating podded propulsor were installed on a demonstration ship, which is now undergoing actual sea trials.

22. Mega-Float is a very large floating structure developed in Japan. It is earthquake resistant and environmentally friendly. After evaluating a floating airport model of 1,000m in length, the feasibility of constructing a floating airport using Mega-Float technology was demonstrated. Other uses for Mega-Float technology have also been assessed. Mega-Float's feasibility as a reliable and inexpensive data backup facility is also demonstrated in a joint demonstration project with the Ministry of Internal Affairs and Communications and the Ministry of Economy, Trade and Industry. In addition to airports and facilities for data backup, various applications such as port facilities, container terminals, energy facilities and leisure facilities, are under consideration. We are actively promoting commercialization of Mega-Float.

23. We believe those efforts to create new demand would benefit not only the Japanese shipbuilding industry but also the global shipbuilding industry. We will continue to create new demand by developing environmentally friendly and safer technologies through innovation.

#### 4. Policy for environmental issues and international regulations

24. As one of the major shipbuilding countries, Japan actively participates in international discussions of environmental issues and international regulations. Japan is an active participant in the discussion of Ship Recycling in the IMO.

25. Upon reaching the end of their operating lives, ships are dismantled and the materials and equipment are almost entirely recycled or re-used. Ship recycling activities are only economically viable in the area with demand for recycled materials and inexpensive labor. Therefore, in recent years the activities have shifted to countries such as Bangladesh and India.

26. In those countries, working practices and environmental standards tend to be less than optimal, and there are growing concerns about marine pollution from the facilities and the safety, health and welfare of workers. International organizations such as UNEP, IMO, and ILO have been discussing these issues.

27. IMO adopted the non-binding *Guidelines on Ship Recycling* in Dec 2003. The Guidelines provide necessary procedures at every stage of ships' life, from construction to dismantling. In December 2005 at the 25<sup>th</sup> IMO Assembly it was agreed to develop a new enforceable instrument on recycling of ships for its consideration and adoption in the 2008–2009 biennium.

28. In March 2006, at its 54<sup>th</sup> session the Marine Environment Protection Committee (MEPC) commenced discussing a new instrument. In developing a mandatory instrument, we need to take into consideration the responsibilities of stakeholders at every stage; construction, operation, and recycling. All the stakeholders, in shipbuilding, shipping, and ship recycling industries, should play their roles. Simple tightening of environmental regulations for recycling facilities could lead to reduction of recycling capacity.

29. Acceleration of the phase-out of single hull oil tankers could significantly increase the number of ships to be recycled in the short-term. As a major shipping and shipbuilding country, Japan needs to lead the international discussion for establishing a framework to maintain recycling capacity in the world, and at the same time to foster an environmentally friendly and safe ship recycling industry.

30. To this end, the Ship Recycling Review Commission was established by Ministry of Land, Infrastructure and Transport. It consists of experts on shipbuilding, shipping and the environment and is conducting a comprehensive study on ship recycling, and developing strategic approaches in international organizations to facilitate the establishment of a globally-applicable instrument.

#### 5. Conclusion

- The Japanese government is working on various issues recommended in the *Vision and Strategy of Japanese Shipbuilding Industry: New Challenge in 21st Century* released in June 2003.
- The Japanese government is actively participating in international discussions on environment and regulations.