



NAVY



Valentin Lyashenko, Deputy Director General of the Medium- and Small-Tonnage Shipbuilding Concern, State Prize Winner

KSMK CONCERN OFFERS ADVANCED TECHNOLOGIES FOR THE NAVY

Persistence, Power and Dependability is a motto of the Medium- and Small-Tonnage Shipbuilding Concern (the Russian acronym KSMK) involved in the implementation of state policy of reforming Russia's defense industry.

Two years ago, the Russian President, the State Council of the Russian Federation and the Russian Government set a task of beginning reforms in Russia's defense industry complex and establishing integrated research, production and financial structures capable of fulfilling the state defense order and supplying modern types of armament and military equipment in Russia's complex economic conditions.

The Medium- and Small-Tonnage Shipbuilding Concern and its enterprises give a good example of the viability of these structures. The Concern was established by the Almaz Central Marine Design Bureau (Russia's leading architect of small and medium-tonnage ships); the Khabarovsk Shipbuilding Plant; the Amur

Shipbuilding Plant; the Yantar Baltic Shipbuilding Plant; the Sredne-Nevsky Shipbuilding Plant; the Vypel Shipbuilding Plant; and the Interregional Investment Bank. The Concern closely cooperates with the Russian Shipbuilding Agency; the Ministry of Defense; the Federal Border Guard Service; the Rosoboronexport Federal State Unitary Enterprise; the Ministry of Emergency Situations; the State Customs Committee; and the State Committee for Fishing.

The Concern specializes in the development, construction and modernization of ships (boats), vessels and shipboard systems. It concentrates on optimizing the use of production capacities of shipbuilding plants; integrating their information, technological, export and intellectual potential; supporting the fulfillment of the state defense order; and providing for managerial coordination and corporate cooperation at the integrated infrastructure level.

The Concern's enterprises build a wide range of small- and medium-displacement ships (vessels) for the international and domestic markets. They offer submarines, the Projects

266M, 266ME and 10750 minesweepers, the Projects 12418, 12421 and 12300 missile-gun boats and the Projects 14310 and 12150 patrol boats. Their civil products include tugs; diving, fishing, firefighting and research vessels; dry cargo ships; tankers; oil-producing sea platforms, etc.

Much attention is paid to marketing research. The Concern has successfully taken part in Russian and international exhibitions, such as *IMDEX Asia 2001*, *Interpolitex 2001*, *Interpolitex 2002* and others.

Notably, at the sixth *Interpolitex Forum* in 2002 (*Border 2002* Exhibition), the KSMK Concern won the *National Security* contest, received a gold medal and a certificate for the development and construction of border guard ships and boats. The Concern exhibits at *Interpolitex 2002* convincingly demonstrated the advantages of integration provided by pooling the efforts of design, shipbuilding and financial companies.

The KSMK Concern also plans to present a massive exposition at the first *International Maritime Defence Show* (IMDS-2003) to be held in St. Petersburg.

In June 2002, Konstantin Totsky, Director of the Federal Border Guard Service, signed a general cooperation agreement with the KSMK Concern that summed up the long-lasting cooperative efforts of the Concern focused on the qualitative improvement of the sea fleet of the Federal Border Guard Service*. At the signing cere-

*On March 11, 2003, the Federal Border Guard Service merged with the Federal Security Service of the Russian Federation.

Project 6457s Sprut patrol ship



mony, Totsky said that choosing KSMK as the service's partner was not accidental. In Russia's complex economic conditions of the last decade, the Concern's enterprises managed to survive, retained their production potential and launched the development and construction of new advanced ships and vessels for the border guard forces.

A bright example of this mutually fruitful cooperation is the construction of modern specialized patrol ship (designed to protect national sea resources) by the Yantar Baltic Shipbuilding Plant. The ship was developed from the German Project 6457 patrol ship by the Almaz Central Marine Design Bureau to meet the Sea Navigation Register standards and special requirements of the Border Guard Service. The type ship in this series, *Sprut* (Project 6457s), was laid down on May 27, 2002 (on the Border Guard Day celebrated in Russia) and will be commissioned in 2004. It will be used to counter illegal fishing in the Russian sea economic zone.

Considering high tactical and technical characteristics of this ship, as well as the urgent need in this type of ships, the Border Guard Command has made a decision to launch series production of *Sprut*-type ships in 2003 (not less than 10 such ships will be built) at the Yantar Shipbuilding Plant to reduce overall costs and save budgetary funds allocated for the acquisition of armament and military equipment.

What makes the *Sprut* ship so attractive for the Federal Border Guard Service?

It is a new-generation vessel that has incorporated the latest technologies and advanced automation and computer systems used to optimize the ship's effectiveness and operating costs (cost-efficiency-marketability ratio). The ship has 900 t displacement, 65.5 m length, 10.6 m width and 3.48 m draft. Its endurance is at least 30 days. *Sprut's* sea-keeping ability is unlimited, and it can operate in all climatic areas. The cruising range at an economic speed is up to 12,000 miles. The ship has a complement of 15 men and can carry up to 10 passengers.

In terms of basic dimensions and lines, the *Sprut* ship has been designed as an intermediate ver-



Mikhail Kheifits, KSMK Director General, and Colonel-General Konstantin Totsky, Director of the Federal Border Guard Service, signing general cooperation agreement in June 2002

sion between a warship and a civil vessel to have the advantages of the latter (fuel efficiency) and the former (speed) to optimally accomplish assigned missions.

The *Sprut* ship is powered by a unique main propulsion system made by MTU (Germany) equipped with an automatic control system operated from the main command post. The CODAE diesel-electric propulsion system has a threefold redundancy and provides a full speed of 21.5 knots. The service life of the main propulsion plant is automatically calculated, depending on engine ratings used during operation and can amount to 36,000 hours. The diesel generator provides a 12-knot economic speed and an 8-knot patrol speed. The ship's pursuit capability is augmented by a speedboat available on board featuring a 30-knot maximum speed in sea state 5.

Active and passive ship stabilizers, an active rudder, bow and stern maneuvering rudders provide for the ship's high sea-keeping ability particularly important for patrol missions in Russia's economic zones in stormy Far-Eastern seas. The *Sprut* prototype (a type ship of the German Coast Guard) has successfully passed trials in the conditions of severe gale and 5 m high waves in the North Sea, displaying excellent sea-keeping ability and fully confirming the claimed performance.

Governmental expert agencies have completed a feasibility study of the *Sprut* ship (Project 6457s) to be built by Yantar for the Federal Border Guard Service and confirmed the correctness of this

decision. As a result, the Federal Border Guard Service will receive a modern new-generation specialized patrol ship designed for the protection of Russia's economic zone at a minimal cost (compared to Russian and foreign equivalents).

The patrol ship *Bad Bramstedt* of the German Coast Guard (*Sprut's* prototype) built by Abeking & Rasmussen, jointly with Yantar, was invited by the Russian Shipbuilding Agency to take part in Russia's first *International Maritime Defence Show* to be held in St. Petersburg on June 25-29, 2003.

The Concern pays special attention to the development and construction of small-displacement missile ships and boats armed with antiship missiles; their firepower is comparable with corvette and even frigate-class combatants. Their cost is two to four time less than that of the larger displacement ships. These small missile ships and boats draw a particular interest of Asian, African and Latin American countries.

Integrating the efforts of shipbuilding and financial companies, the Concern focuses on the development and construction of the advanced fast patrol ships and boats, including those employing new propulsion principles. One such example is the Project 14310 *Mirazh* border guard patrol ship designed to guard national sea borders, maintain territorial sea regime and protect biological sea resources in coastal areas.



**Project 14310 *Mirazh*
border guard patrol ship**

Mirazh is a fast skimming ship with a hard-bilge hull made from aluminum-magnesium alloy. It can maintain full-speed movement in sea state up to 4 and safely operate at lower engine ratings in sea state up to 7. The ship incorporates principally new design solutions: a unique complex of automatically controlled interceptors designed to increase speed by 8 to 10 knots (up to 50 knots), significantly decrease

Project 12150 *Mangust* patrol boat



pitching and rolling motions and improve a sea-keeping ability at high seas. *Mirazh's* high characteristics were confirmed in the course of type ship trials in the Caspian Sea: in sea state 4 the ship accelerated to 40 knots with virtually no pitching and rolling.

Another good example of the Concern's products is the Project 12150 *Mangust* patrol boat designed to maintain state border regime in open ports (roadsteads) and territorial seas and protect biological resources in coastal areas.

The *Mangust* boat features:

- rational combination of hull

lines (deep V) and the propulsion system (two M470 diesels with Arneson transmission gear) provides for high speed (over 50 knots), good maneuverability and controllability;

- optimal configuration of the propulsive machinery (diesel, propeller, shaft, hull) provides for a maximum range of 410 miles, a two-day endurance, a more than 50-knot speed with a displacement of slightly more than 27 tons;

- modern ergonomic design which advantageously distinguishes the boat from its Russian and foreign equivalents. Optimized internal room layout and a reduced noise and vibration level provide the ship crew and passengers with good working and living conditions.

In terms of basic tactical and technical characteristics and cost-efficiency-marketability ratio, the *Mangust* boat surpasses the best Russian analogs and is on a par with its foreign counterparts.

In addition to contracts from the Russian Navy and the Federal Border Guard Service, the Concern's enterprises are actively involved in commercial programs. KSMK takes part in a number of foreign tenders for transport tugs, ferries, tankers, multipurpose transport ships, diving and fire-fighting vessels, etc. For example, under a US\$ 140 million contract from Exxon Neftegas Limited (USA) signed on May 23, 2002, the Amur Shipbuilding Plant has reconstructed and reequipped the Orlan oil-producing sea platform.

The Medium- and Small-Tonnage Shipbuilding Concern has adapted itself to the new economic conditions and tough market competition expanding sales of products manufactured by its enterprises and consolidating its positions on the international market. The Concern is confident of its future. □



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