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CHINA TODAY: THE PEOPLE 'S NAVY

China

China Today: The People's Navy

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[This report contains translations of the table of contents and selected sections from the book *Dangdai Zhongguo Haijun* (*China Today: The People's Navy*), China Social Services Publishing House, Beijing, October 1987.]

China Today: The People's Navy

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Chapter Three. Weapons Construction During the Initial Period of the Navy's Existence

40050605A Beijing Dangdai Zhongguo Haijun (*China Today: The People's Navy*) in Chinese Oct 87 p 58

[Text] During the early stages of the Navy's existence, how to prepare for the construction of necessary weapons under the urgent pressure of the combat mission was a very important question.

At that time, the sources for PLN weapons were primarily various old equipment captured and received from the Kuomintang. Because arrangements were still being made for domestic production, at the same time as we used and made the best of old equipment, we also actively sought to buy new weapons from abroad. Our purchases from the Soviet Union were especially significant.

As the war of liberation waged on and as the Kuomintang aircraft were bombing madly, we tried very hard to preserve the weapons that had been so hard to come by, and at that time when our ability to repair them was at its weakest, we still recovered and refitted ships and repaired various aircraft. This constituted the primary mission of the weapons construction during the Navy's initial period.

Section 1. Restoring and Refitting Old Ships

40050605B Beijing Dangdai Zhongguo Haijun (*China Today: The People's Navy*) in Chinese Oct 87 pp 58-68

[Text] As events in the war of liberation developed, there were some rebellions and surrender among ships of the

Kuomintang Navy. With those captured by the PLN as well as with those abandoned in the wild retreat of the Kuomintang forces, it is estimated that we had 183 ships totaling 43,268 tons.

After the step-by-step liberation of the coastal provinces and municipalities, the PLN also received and requisitioned some commercial and fishing vessels from local units. In particular, after the liberation of Shanghai, the Fleet Survey and Modification Commission was founded under the leadership of the Military Control Commission. This commission received several ships that had been allocated to the Navy of the Huadong Military Region by the Shanghai Office of Business Solicitation[1] for refitting as military ships. Among these were the Yuanpei, the Dezhou, the Dingxianghua, the Jinxianghua, the Ziluolan, the Changzhou, the Wanshouhua, the Wanfu, the Zhong 116, the Zhong 120, the Zhong 125, the Hua 201, the Hua 209, and the Hua 212. In addition to these were one medium size tanker and three tugboats. The Navy of the Huadong Military Region used the two ships, the Ningyuan and the Minzhong, in exchange for the Zhong 121 and the Zhong 122 large landing craft of the Office of Business Solicitation. The commission also received 56 fishing boats from the Shanghai Aquatic Products Company, four different kinds of ships from the Shanghai Department of Public Use and Department of Ocean Shipping, and one repair ship, the Jiangliu, from the Shanghai General Office of Public Relief. That is a total of 79 ships. The Navy of the Zhongnan Military Region received 41 various vessels from units throughout Huanan. The Qingdao Naval Base in the Huabei Military Region also requisitioned ships from such units as the Tanggu Office of Water Security and the Shandong Aquatic Products Company. Statistics show that throughout China the Navy received 169 medium and small ships totalling 64,865 tons.

In addition to those just listed, the Navy also salvaged six ships that had been sunk in years past for a total of 1,715 tons, and they bought 48 old ships in Hong Kong, for another 25,470 tons.

Although the PLN had a significant number of vessels, the performance of these ships was quite poor, as they were obsolete. The oldest among them included the Chu, purchased from Japan during the Qing dynasty, and the Yongji, a gunboat whose construction was begun in the Jiangnan shipyard at the end of the Qing dynasty and that was launched in the first year of the Republic.[2] And there were also ships from the United States, England, Japan, France, Germany, Canada, Holland, and Australia that had been launched either before or during the Second World War. There were many different types of ships and as many as 355 types of main and auxiliary engines. The machines had been long in use, wear and tear was serious, and there was no source for many parts. The fastest speed of any of the ships was 15 knots.[3] The speed of the great majority was about 8 knots, and some could simply not sail normally at all. There was a wide variety of ship cannon, manufactured in such countries as the Soviet Union, the United States, England, Japan, and France, and there were more than 30 different types. Many ships had no cannon at all.

The Kuomintang was certainly not willing to allow these ships to remain with the people, and they sent wave after wave of aircraft in wild bombing raids, seeking to prevent the Chinese people from setting up their own navy. The anti-aircraft capabilities of the People's Army was weak at that time, but with the close cooperation of former Navy personnel and workers and fisherman, the commanders bravely launched an anti-bombing struggle. For example, after the rebellion, the cruiser Chongqing had just arrived at Yantai Harbor when the Kuomintang sent successive aircraft over for reconnaissance and bombing. The operators of the 40-mm antiaircraft guns on board bravely fought off the attack, keeping the enemy aircraft from flying low and the bombs that were dropped from hitting their targets. After the ship had docked at Hulu Island, the Kuomintang aircraft tracked it there. Every day from 18 March until the 21st, the Kuomintang sent out several sorties of American-made heavy bombers to conduct ripple bombing, and as a result, the port side of the Chongqing was hit by one heavy bomb, which blew open a large hole 3-4 meters in diameter, and some of the superstructure was damaged. At the same time, the American Navy had sent out submarines, which surfaced at Hulu Island, intent upon preventing the cruiser Chongqing from moving. During this anti-bombing effort, 22 men on the Chongqing were injured, and six sacrificed their lives to protect the ship. No one shrank from his duty during the ship-to-air warfare, and as Han Zhiming died, he was still holding onto artillery shells. To save our strength, the cruiser Chongqing was ordered to sink itself at the Hulu dock on the evening of 20 March. After the rebellion on the escort vessel Changzhi, although it was camouflaged as a civilian ship as it sailed on the Changjiang to Nanjing, it was discovered by Kuomintang aircraft and subjected to ripple bombing. Without regard for their own safety, ship personnel did battle with the enemy, and after sustained combat and with their artillery shells nearly depleted, the men were completely exhausted. The Changjiang was narrow at that point, making evasion difficult, and on orders from above, they opened their bottom ports and sank the ship in the river. The Kuomintang aircraft still wouldn't stop, however, and they kept looking as far as Hankou, finally sinking the Andong and Yongsui, two ships similar to the Changzhi that were docked at Wufu and Digang, respectively. At that time, all ships able to sail to the middle and upper reaches of the Changjiang did their best to do so. Even so, among those evacuating, 6 of the navy's 9 ships that had been involved in the rebellion of the Kuomintang's Second Fleet were sunk. Many boats had to use fishing nets sent along by fisherman, in which they inserted pine branches and wheat stalks as camouflage, in order to evade the enemy planes. The military ship Huangan has been preserved intact to this day because it used camouflage to hide, thus evading the enemy aircraft.

Ships in yards for repair and those tied up near factories were even more the targets of Kuomintang air raids. During one month, July 1949, the ship repair yards and docks at Shanghai were hit more than 27 times. On one bombing raid on 25 January 1950, 26 ships were damaged or destroyed, including the Changzhou and the Wanshouhua.

As the air defense strength of the PLA continued to increase, the security of the majority of ships was ensured. To enable these old ships to recover their combat power, the Huadong Military Region organize a great deal of effort for their repair and refitting. At the same time, they also arranged for ship salvage efforts. Beginning in September 1949, over 6 months time they salvaged 7 ships from the middle and upper reaches of the Changjiang that had been either sunk by enemy bombs or scuttled. It was a great deal of work, and there were many difficulties, all of which exceeded expectations. In particular, there were problems with the ships that had been sunk on their sides in the middle of the river, which increased the difficulty for salvage efforts. For example, the Changzhi required three months time before it could be salvaged. Salvage efforts for the Chongqing were undertaken with the aid of Soviet specialists, and preparations were begun in February 1950. Work formally began in April 1951, and the salvage project was completed in early June, with the middle of the month spent moving the ship into the shipyards for repair. Later, because the repair costs were deemed excessive, it was decided to use the ship for other purposes.

Our ability to repair ships at that time was quite weak. There were 8 ship repair yards of various sizes that were taken over or requisitioned by the Navy in the Huadong Military Region, among which the largest was the Shanghai Jiangnan Shipyard, but this yard had sustained serious damage. Before their wild retreat, the Naval Commander of the Kuomintang forces, Gui Yongqing [2710 3057 3237], called a hurried meeting, where he ordered engineers to use explosives to blow up such equipment as the power plant and the shipyard lock gates of the Jiangnan Shipyards. He also threatened that "we cannot leave these for the Communists, but must leave them with a pile of scrap metal." When the PLN eventually took over, the majority of important machines in the yards had been taken away, and the yard director, chief engineer, and more than 200 technicians and workers had been taken to Taiwan. According to statistics, more than 5,000 tons, totalling 80,000 pieces, of machines and equipment and tools and materials were lost. After the liberation of Shanghai, Kuomintang aircraft continued their wanton and indiscriminate bombing against this yard. On 3 August 1949 alone, 9 heavy bombers hurled 34 500-lb and larger bombs at this yard. 27 areas within the yard were blown up, and 3 workers were killed.

The entire staff of the Jiangnan Shipyards worked to repair the plant buildings and equipment while repairing and refitting ships, which fully exhibited the enthusiasm, creativity, and high quality of the working class. In a few days they had repaired the generating plant, and in a month and a half they had repaired the No 3 dock lock gates. These workers also contributed the valuable equipment, precision instruments, and blueprints they had stored away on the eve of the liberation to keep them from being destroyed and stolen by the enemy. The former head of the design office, Wang Rongbin [3769 2837 unavailable], brought out a large volume of technical materials, and worker Shen Changxin [3088 2490 0207] came up with 6,000 machine tool blades. On 23 July 1949, the Jiangnan Shipyards held a victory celebration, at which they commended those who were either meritorious during the protection of the yard and rush repairs or who had contributed materials. The Huadong Party civil and military leaders Chen Yi [7115 3015] and Zeng Shan [2582 1472], and Huadong Military Region Naval Commander and member of the political commission, Zhang Aiping [1728 1947 5493], all spoke at the meeting, extending their comfort and encouragement.

To solve the problem of insufficient materials and fittings, the Jiangnan Shipyards got all the workers at the yard actively involved in inventory efforts. The Machinery Repair Plant discovered planer blades, band saw blades, and dozens of cannon as well as enough wood screws and split pins to last the yard 2-3 years. The Hull Plant uncovered more than 1,000 kg of perfect welding electrodes, and they also found motors, acetylene, searchlight bulbs, welding solder, and navigation compasses. Workers, technicians, and engineers thought up ways to transform and use old, discarded materials to meet the urgent demand. In their roles as the new masters, they fought to repair and refit a large number of ships under arduous conditions. According to statistics, between September 1949 and May 1950 they repaired and refitted more than 130 ships, ensuring the needs for units in combat or training.

Aside from shipyard repairs, the Huadong Military Region Navy also arranged for mobile repair. After the liberation of the Zhoushan Islands, the battle lines moved gradually south, and to carry on repair efforts in those locations, they organized a temporary repair platoon. Platoon Leader Chen Songshan [7115 2646 1472] led a few dozen technical workers and military personnel on a small landing craft laden with lathes, drills, and welding equipment as well as stocked with a small quantity of parts and did a brisk business in the Zhoushan area. This mobile repair played an important role in improving the proportion of ships in the area that were able to sail. The Jiangliu repair vessel (later changed to the Luliangshan) was manned by 100 technicians and had an outstanding effect on the repair of ships scattered throughout this area.

The ship refitting effort was another complex and arduous task. Refitting requisitioned and allocated ships into warships required fitting them with cannon of various caliber and other relevant equipment. According to statistics, among the 123 ships in the Navy of the

Huadong Military Region in 1950, there were only 799 guns on-board. When exchanging cannon at that time, they ran into a glaring problem: firing accuracy was seriously affected by difficulties in leveling the cannon bases. The Shanghai Ship Repair Yard set many minds to work on coming up with ways to trial-produce a boring-out tool to do planar stock removal with a specially made steel frame blade set mounted on an electric motor. Although this equipment did not work quickly, it succeeded in solving the problem. Incomplete ship blueprints were a common problem encountered during refitting. Because there were no contour drawings for some ships (drawings of the hull shapes), there was no way to carry out dry-docking projects [which required the building of scaffolding from contour drawings], and all they could do was send divers down to work underwater. After they had clarified the situation, then the dry dock timbers could be arranged, and the ship positioned. This problem was only gradually solved later by having technicians do surveys and gather materials.

In May 1950, to break up the Kuomintang mine blockade of the mouth of the Changjiang and to restore shipping as soon as possible, the Jiangnan Shipyard had to refit 4 landing ships as minesweepers. The staff worked day and night without regard for themselves to complete in only 6 days and nights what had been planned for a month and a half.

Guaranteeing the continuation of repair and refitting work under combat conditions was even more tense and complex. For example, to protect the victory won in the battle liberating Yijiangshan Island, the Navy Shanghai Ship Repair Yard alone did crash repairs on 108 small landing craft, 2 infantry landing craft, and 1 medium landing craft. They also installed M-13 (Katusha) rocket launchers on 6 fishing boats as well as repaired 4 escort vessels, 10 large landing craft, and 2 gunboats. 437 vessels totalling 99,949 tons were repaired or refitted during this struggle by the various repair yards in the Huadong Military Region.

Navy ship repair capacity at that time was more or less concentrated in the Huadong area and was rather weak in the Zhongnan area. Before liberation, ship repair in that region depended primarily on Hong Kong, as the city of Guangzhou was only able to repair small inland river boats. During the Second World War, a Japanese-built escort vessel, the "Haifang 7," lost a section of its bow to American bombs. At the time, the Japanese towed the ship to Huangpu Harbor. In 1952, the Navy Ship Repair Department sent people to the site for a detailed survey, which concluded that it was worth restoring and also provided the specific plans for the restoration. But because repair capacities in that area were insufficient, it was several years before the restoration could be finished, and the restoration was undertaken with the support of the Jiangnan Shipyards. Even though the ship repair capacity for the Zhongnan area was so weak, the ship repair yard staff made an outstanding contribution to the struggle to free Hainan Island and the Wanshan Islands as well as in repairing and refitting small to medium sized ships.

The largest shipyard in the Qingdao area was the Qingdao Ship Repair Yard. When the Kuomintang troops withdrew, they took with them the floating dry dock, blew up the only ship dock lock gate, and dismantled 80 percent of the machinery. In October 1950, after this yard had been officially allocated to the Navy, the dry dock locks were rebuilt, the suspension frame was restored, and equipment was gradually added. In the beginning, they could only take on the repair of small ships. Not until 1952 were they able to repair landing ships, and in 1955, they began to take on the dry dock repair of destroyers and submarines.

When the Navy was first founded, the greatest difficulties for ship repair and refitting were in the serious shortages of materials and parts. Without parts, even though workers were willing to do crash repair work, there was no way for them to do so. For the lack of a few steel plates, some ships could only languish within the dry dock. After some machines had been taken apart, reassembly would be put off again and again for lack of one spare part. Such landing ships as the Qionglin and the Fulin went without repair for 2 years while they waited for test machining of parts. The gunboats Handan and Yancheng sat in the shipyard for 5-6 months because parts could not be supplied promptly. Although each yard took what measures it could, as for example cannibalizing and substituting parts, to meet the demand, the fundamental problem could not be solved. To do the best job possible in the trial production of parts, in December 1954 the Navy specifically set up the Commission on Trial Production of Spare Parts, with offices in Shanghai, to unify spare parts trial production and manufacturing efforts. By the end of 1955, pertinent factories throughout China and Navy ship repair yards were successfully trial producing 94 different machine parts, and 235 different parts for 13 machines were entering the trial production stage. At that time, the Soviet Union was also continually providing certain parts and metal materials. In this way the tight supply situation for spare parts was gradually being alleviated.

From the point of view of long-term naval reconstruction, as the Navy was restoring and refitting old ships, it was using the very weak technology base of the shipbuilding industry at that time in beginning to design our own motorized junks, small picket ships, landing ships, and tankers. From the perspective of scales of construction or product quality, although these things were nearly trivial in themselves, they were a very valuable beginning. And they exhibited the revolutionary spirit of self-reliance and working hard for the prosperity of the country. In 1950 after the War To Resist U.S. Aggression and Aid Korea had begun and with an eye toward the fact that the naval combat mission was steadily growing, the original 25-ton river patrol boats were less and less up to the need, and preparations were made to build our own 40-ton patrol boats. In the winter of 1950, the Huadong Military Region Naval Headquarters turned

this task over to the Jiangnan Shipyard. Construction began after a short period of hasty design. When the first ship was launched in March 1951, the ship unexpectedly overturned and sank. In reviewing what they had done, the Navy Ship Building Department had yard director Chen Jun [7115 7486], engineer Jiang Maiji [3068 6701 1015], and others design and build four 43-ton patrol boats. In September 1952, the Navy established the Department of Ship Construction. On the basis of a review of experience at the Jiangnan and Qingdao yards and under the direction of Senior Designer Xu Zhenqi [1776 2182 7496], they redesigned these into 50-ton patrol boats. Construction of these was to be done by the Jiangnan Shipyard. Through the concerted effort of the military and the workers, the first ship attained the tactical technical requirements and was capable of 11.5 knots. From the beginning of batch production in 1952 through 1955, a total of 82 of these ships were built. This was the first generation of 50-ton patrol boats designed and built by China's Navy, and it was given the code name "Class 53."

At that time, the Navy was in urgent need of patrol boats in the Zhongnan Military Region, but this area lacked the technical capability for shipbuilding, and it was difficult to carry out that mission. The Navy Ship Repair and Construction Department had designers revise the Class 53 blueprints to suit the climate of the Nanhai Naval Region. Ways were found to accomplish construction. The hulls were made in Shanghai, after which all parts and equipment were moved to Guangzhou where the Jiangnan Shipyard sent technicians to assemble the parts. Sixteen Class 53 boats were built using this technique, and they were all completed and put into use during 1954. The boats played an important part in the protection of the mouth of the Zhujiang, in controlling the Qiongzhou Straits, and in guaranteeing the safety of navigation routes in the Huanan coastal region.

Concurrent with all this, with the help of Soviet specialists, the Design Office of the Navy Ship Repair and Construction Department used a torpedo boat turned over to it to design a 75-ton wooden-hulled patrol boat. The wooden hull was changed to an iron hull in 1955, and a total of 75 were built. This was the Navy's second generation of patrol boats, code named "Class 55," and capable of 22.5 knots.

By the end of 1955, the Navy had designed and built on its own some 236 ships of such type as patrol boats, landing ships, tankers, and self-propelled barges, totaling 12,556 tons. But the main engines and cannon were still imported from the Soviet Union.

During the ship design efforts, Xu Zhenqi made significant contributions. Xu Zhenqi had long before graduated from the Kuomintang Navy Fujian Mawei Aviation and Submarine School. In the 1930s, the Kuomintang Navy had ordered two military ships built abroad and had sent Xu Zhenqi to monitor the construction. When the Second World War broke out, he returned home on orders. In 1952 he was appointed head of the Design Office of the Navy Ship Repair and Construction Department and later appointed Senior Designer. He was in charge of the preliminary and program designs for the Class 53 and 55 patrol boats, the model 62 escort ship, and the model 037 hunter-killer ship, and he carefully created excellent hull contours that suited conditions in China's ocean areas. When the Marine Institute founded Institute No. 701 during the 1960s, he was appointed its adviser, and he helped and guided the design of medium and large surface combat vessels, working there until his death in 1982.

With the continued development of ship repair and construction efforts, Navy ship repair and construction organizations began to be established and perfected. Before 1952, the repair and refitting of Navy ships was basically in the hands of the particular Military Regions, and more particularly in the hands of the organizations and leaders. Ship repair mechanisms and organizational structures in each region were not entirely similar. Although preparations for the founding of the Navy Ship Construction Department had been made in the winter of 1950, it had yet to become a system with ship repair structures in the Military Region navies, and the relations among them all were not yet clear. On 28 September 1951, it was first proposed by the Navy Chief of Staff, Luo Shun [5012 5293], that the Navy "build a repair and construction system from top to bottom to better unify ship repair and construction efforts and define the professional, technical, and leadership relations throughout the system." In December of that year, the Navy held a meeting with naval leadership in the military regions, which came up with the "Recommendation Regarding Effective Management of the Naval Repair and Construction Effort and the Strengthening of that Effort." The "Recommendation" required the reassignment and training of technical cadre and the rapid establishment of ship repair and construction departments at all levels. In 1952, the Navy changed the Ship Construction Department into the Ship Repair and Construction Department, with Lin Zhen [2651 4176] as Department head and Yu Xiaohong [0060 4562 5725] as political commissar. Later, Xue Zonghua [5641 1350 5478] and Ren Xiusheng [0117 4423 3932] became assistant department heads, and Liu Qian [2692 6197] became deputy political commissar. Establishing various levels of the Navy ship repair and construction departments had an important role in unifying the organization and leadership of the ship repair and construction effort throughout the Navy and in ensuring the smooth accomplishment of the naval ship repair mission. Navy ship repair and construction conferences were held in both 1952 and 1954. Based on the principles and policies pertaining to the construction of relevant equipment, the conference formulated standards, plans, procedures, and paperwork for ship repair as well as drew up growth principles and operations management laws to impel the naval ship repair effort rapidly on the course of unified plans, unified procedures, and unified standards.

Footnotes

1. The "Office of Commercial Solicitation" is short for the "Office of Steamship Commercial Solicitation," which was the largest steamship shipping enterprise established in the later Qing years. It was formally set up in 1873 with its main office in Shanghai. In 1877 it bought a number of old ships and equipment at a high price from the American firm Russell and Company, which greatly expanded its scope of operations. In 1930 the Kuomintang found excuses to nationalize the company, and in 1932 it became part of the Ministry of Transportation, from which it became a mechanism for the monopoly shipping business run by the four families of the Kuomintang. During the War of Resistance Against Japan, the main office was first moved to Hong Kong, then to Chongqing; after the war, it was returned to Shanghai. By November 1947 it had a total of 460 ships totaling 330,000 tons. After liberation, when it returned to the hands of the people, it had been seriously damaged.

2. The Chu and Yongji were both coal-fired.

3. A 'knot' is the international unit of ocean navigation speed. One knot equals one nautical mile per hour. One nautical mile equals 1,852 meters.

Section 2. Buying Abroad

40050605C Beijing Dangdai Zhongguo Haijun (*China Today: The People's Navy*) in Chinese Oct 87 pp 68-73

[Text] At an August 1950 conference on building the military, the Navy made clear the following idea: in building a navy, consideration must be given to cooperation among the different service branches regarding combat needs; no one branch can go it alone. As far as types of vessels are concerned, not only are there such combat ships as destroyers, frigates, submarines, minesweepers, hunter-killer ships, landing ships, seaward defense boats, and torpedo boats, but there are also such service ships as submarine depot boats, training ships, repair ships, surveying ships, buoy tenders, emergency life-saving ships, stores ships, and hospital ships. The varieties and models of weapons and mechanical equipment have become quite varied, which has posed an arduous and complex task for equipment construction. It is quite obvious that sole reliance on restoring old ships and refitting commercial vessels or fishing boats will never be able to satisfy the demand. But development and production on our own was too immature under the conditions at that time. For these reasons, the Navy bought from abroad during its formative years, and this constituted another important source for weapons and equipment.

In early 1950, the Navy was able to buy ships, equipment, and materials from the West through Hong Kong, as well as from the Soviet Union. According to the records, we imported 48 overage ships manufactured in the USA, England, and Japan. After the latter half of 1950, when the imperialist countries instituted a blockade and embargo policy toward the new China, the situation changed. In June of that year, we were able to buy 4 frigates and 4 minesweepers in Hong Kong, but the deal could not be consummated because the British government instructed British businesses to postpone sales to China. In early 1951, Hong Kong firms had 3 steel-hulled minesweepers and 4 frigates for sale, but then, too, they could not be sailed inland because of the blockade. For these reasons, the Hong Kong channel for purchase of ships and parts and materials was basically cut off.

The Navy placed orders with the Soviet Union at the founding of the new China. China at that time was in a period of economic recovery and that, coupled with the outbreak of the War to Resist U.S. Aggression and Aid Korea, caused great difficulties in state finances. All we could do was use limited funds to buy some of the needed equipment and supplies.

On 14 February 1952, when Chairman Mao Zedong made his first inspection of naval leadership and organizations, he required that the Navy use the foreign exchange earmarked for buying ships to buy aircraft needed for the War to Resist U.S. Aggression and Aid Korea instead in order to alleviate problems for the Air Force. In keeping with the overall situation, Commander Xiao Jinguang [5618 0513 0342], Deputy Commissar Liu Daosheng [0491 6670 3932], and Chief of Staff Luo Shunchu expressed their support of this idea.

In 1953, China began to implement the first five-year economic construction plan, and the state's primary wealth was concentrated on industrial construction. It was under just such conditions that the state continued to allocate a certain amount of money to the Navy. During the period 1953-55, the Navy bought some weapons and equipment from the Soviet Union, chief among which were combat ships (including end products and semi-finished products), service ships, various aircraft, special naval artillery, weapons for use in water, ammunition, and special vehicles, equipment, and parts.

There were both old and new end products among the imports, but old predominated. For example, 4 destroyers were launched from 1937 through 1941, and they had been refitted and repaired before arriving in China. There were two types of submarines, the C and the M-15. In June 1954, we received firsthand at Lushun 2 C-type submarines that had been built in 1943; they had been in service a full 10 years when we got them. Other C-types were launched in 1948. First launch dates for the M-types were 1950 and 1951. The minesweepers were built in 1948. The hunter-killer ships had been launched in 1952. Some of the torpedo boats were World War II vintage, and the main engines were largely American-made gasoline engines. This kind of main engine needed overhauling after 500 hours of operations, after which the repaired engines could only be used another 250-300 hours. An inspection of the main engine records of the 18 torpedo boats being imported in 1951 showed clearly the state of those boats. 13 had not been

overhauled by the Soviet Union, and the life left before rebuild was a maximum of 116 hours and a minimum of only 64 hours. 7 boats had less than 100 hours life remaining in the engines. The Soviet Union had rebuilt 5 of the ships, but there were only some 200 hours left in the engines.

A considerable number of the cannon were 76.2-mm as well as of World War II vintage. The condition of some of the aircraft was similar to that of the torpedo boats. Regarding the question of ordering weapons from the Soviet Union, in 1953 Navy Commander Xiao Jinguang wrote in a reply to Deputy Commander Luo Shunchu (who was at that time in Moscow), "It is probable that the finished and semi-finished products we have sought so hard to get from them have been used, but as long as they are still capable of warfare and training purposes, it's better than not having any at all. China will be incapable of resolving this problem itself for several more years. Naval combat conditions are getting more and more complex at present, and cadre need equipment for training. Japan and Taiwan are currently taking overage things from the US to tighten the blockade with which to strike at us. And you should know that the Soviet Union cannot give us many new things at present...." This points out that even though much of the equipment was old and backward, it had to be purchased to alleviate the urgent need. It was precisely because of this equipment that the Navy was able to continue building up its destroyers, submarines, hunter-killer ships, and torpedo boat units, and how it was able to both organize a naval anti-aircraft unit and strengthen coastal artillery units.

Buying weapons from abroad was restricted by the national financial situation as well as by the possible limitations of the seller. Within the few short years since the creation of the Navy, we can see the following point in the ups and downs of formulating plans for naval construction. In keeping with the overall national defense construction ideas as conceived by the Military Commission of the Central Committee, early on in 1950 the Navy had drawn up a 3-year plan for naval construction, which was then changed to a 5-year plan. The plan provided for either buying from the Soviet Union or domestically making 205 combat ships (55,300 tons), 420 aircraft, and 36 shore batteries. The Soviet Union later proposed expanding its provision of weapons and equipment to the Chinese. After studying the proposal, the Chinese sent Navy Commander Xiao Jinguang and Deputy Commander Luo Shunchu to the Soviet Union in April 1952 to negotiate with the Ministry of the Navy, and a new expanded 5-year construction plan was drawn up as a result. Because the Soviet Union would not agree to military loans as a means to solving the economic difficulties, the 5-year plan was later changed to a 3-year (1953-1955) product ordering plan after repeated negotiations, which greatly reduced the quantities of the original plan. This product ordering plan called for the purchase of 81 combat ships (27,234 tons), 148 aircraft, and 22 shore batteries. The total value was more than 900 million old rubles. Obviously, the various elements of the selling nation—the Soviet Union, had a large effect on China's naval construction. In another aspect, the naval construction plan was also restricted by several factors within China. 1953 was the first year that China entered into a 5-year economic construction plan. To suit the national 5-year economic construction plan, in October 1953 the Navy proposed a 5-year construction plan based on the 3-year product ordering plan with the Soviet Union. This plan received much support from the CPC Central Committee and the State Council. In April 1954, Premier Zhou Enlai gathered together the following persons for an exclusive study session: Peng Dehuai [1756 1795 2037], Liu Bocheng [0491 0130 2110], Deng Xiaoping, He Long [6320 7893], Chen Yi [7115 3015], Nie Rongzhen [5119 2837 5271], Tan Zheng [6223 2398], Huang Kecheng [7806 0344 6134], Xiao Jinguang, Luo Shunchu, Fang Qiang [2455 1730], Zhou Xihan [0719 1585 3352], Huang Jing [7806 2417], Zhao Erlu [6392 1422 7120], Wang Heshou [3769 7729 1108], Wan Yi [8001 3015], and Xiao Xiangrong [5135 0686 2837]. At that meeting Deputy Minister of National Defense and Navy Commander Xiao Jinguang first detailed the requirements of the naval 5-year construction plan. He explained that during the 5-year period the Navy would need more than 1.3 billion rubles, equivalent to 126 quadrillion (old) RMB, for orders from abroad. During the discussions, State Council Vice-Premier Deng Xiaoping stated that, "the Chairman (Mao Zedong) has indicated that within the first 5-year plan, funds for national structures will in the end account for no more than 30 percent of national expenditures. According to this principle, future military expenses can only rise 4 quadrillion (old) yuan annually. Whatever anyone thinks, this is all the money that would be available; otherwise, the only thing that can be done is to change the 30 percent proportion." State Council Vice Premier and Minister of National Defense Peng Dehuai went on to say that, "this principle cannot be altered and must become the standard in working out balanced growth plans for all service branches." The Minister of the first Ministry of Machine-Building Industry, Huang Jing, reported on the situation regarding the shipbuilding industry of the time. He said that during the first 5-year plan, in addition to the 30,000 tons of military ships and 6,000 tons of service ships needed by the Navy, the civilian sector would need to build ships totalling 480,000 tons. From the point of view of the shipbuilding industry's growth rate, there was no way to meet the new demands. The existing shipyards had only assembly capabilities and no machines for ship manufacturing nor technology and equipment for steel products. Further, there was a shortage of technical cadre. If new demands were not made, basic construction funding for the ship building industry during the first 5-year plan would be about 51 quadrillion (old) yuan. State Council Vice Premiers Chen Yi and He Long, Vice Chairman of the National Defense Commission Liu Bocheng, and Vice Premier and concurrently Minister of the State Planning Commission Li Fuchun [2621 0479 2504] unanimously advocated concentrating the bulk of the

state financial resources on building heavy industry, reducing funding for the service branches as much as possible. In summarizing that position, Premier Zhou Enlai said that, "if we look at the rate at which China's shipbuilding industry can grow, at our national financial capabilities, and at the 3-year naval product ordering agreement we have signed with the Soviet Union, the navy 5-year construction plan should implement the Sino-Soviet 3-year naval product ordering agreement spread over the 5-year period. In other words, we should use the naval weapons and equipment provided by the Soviet Union in accordance with the agreement as the outline for our navy 5-year construction plan, and we cannot allow another two years of orders to be added to it."

In view of this situation, it is stated in the working report of the first CPC Navy Congress held in 1956 that, "since China is in a state of economic recovery and has become involved in the War to Resist U.S. Aggression and Aid Korea, government finances are extremely tight. Since we have begun to implement the first 5-year plan, the primary financial resources of the state must be used in industrial construction. In spite of this, the state has still allocated an enormous sum of money to the Navy; however, we cannot use all of this money to buy equipment from abroad, nor can we depend upon the purchase of equipment from abroad to build up our Navy. That construction must be based upon China's industrial growth. Without that growth, development of the Navy is impossible. We cannot depart from industrial efforts to simply independently carry out naval construction. For these reasons, Navy efforts must be in compliance with industrial efforts."

Chapter Nine. Directions for Weapons and Equipment Development

40050606A Beijing Dangdai Zhongguo Haijun (*China Today: The People's Navy*) in Chinese Oct 87 p 228

[Text] As regards the particular principles and directions for development of naval ship and equipment construction, in 1954 the Navy Commander Xiao Jinguang issued a rather comprehensive statement: to build ships and equipment for the Navy, we must develop the national shipbuilding industry, establishing a complete shipbuilding industrial system. In the development process three important steps must be taken: the first step is to seek out foreign aid for acquiring complete sets of material, equipment, and technology, and to assemble them within China to provide a distinct base for shipbuilding. The second step is to absorb and assimilate foreign technology, to copy it, and to gradually reach the point where the materials and equipment can be domestically provided. This is half the manufacturing process. The third step is to rely on ourselves and to design on our own using domestically produced materials and parts to accomplish the research and development of the first generation of weapons and equipment for the Navy. The three steps of which Xiao Jinguang spoke are permeated throughout by the principles: "act independently keeping initiative in our own hands and have a foothold in China" and "concentrate on self-reliance while seeking out help from outside as a supplement." In the more than 20 years from the mid-1950s through the 1970s, naval weapons and equipment construction has undergone countless difficulties and setbacks brought about by external blockades and the pressures associated with them as well as by encountering national economic difficulties and disturbance from the 10-year turmoil of the Cultural Revolution, but it has basically proceeded in accordance with the three steps just mentioned and has made major advances.

Section 1. Contract Manufacturing

40050606B Beijing Dangdai Zhongguo Haijun (*China Today: The People's Navy*) in Chinese Oct 87 pp 228-233

[Text] In the early days after the founding of the People's Republic, the national industrial base was quite weak, and the People's Navy's ship and equipment construction received a significant boost from abroad. China negotiated to buy from the Soviet Union sets of materials and equipment for certain combat ships in order to assemble them at domestic shipbuilding factories. After repeated negotiations, the Soviet government agreed to transfer some manufacture rights for certain ships to China as compensation and agreed that within the scope of the transferred rights, the Chinese government would annually make orders for military goods and buy semifinished products and technical data of relevant materials and equipment. The Chinese shipbuilding factories would handle assembly. Beginning in 1953, China bought all the technical blueprints and some materials and equipment for five kinds of ships from the Soviet Union, including frigates, submarines, minesweepers, large hunter-killer ships, and torpedo boats. The PLN and state shipbuilding industrial sectors became accustomed to referring to some naval ships that were assembled in China using foreign materials and equipment as "contract manufactured" ships. These contract manufactured ships were an important source for combat ships during the initial period of the People's Navy. This contract manufacturing also stimulated an overall technological transformation of the affected shipbuilding factories.

In accordance with the situation of the time, accomplishing contract manufacture first required selection of shipbuilding plants within China suitable for assembly of the contracted goods. To this end, the Navy and pertinent industrial departments did an implementation survey of coastal and lower Changjiang ship repair facilities. On the pretext of clarifying conditions, the State Planning Commission and the first Ministry of Machine-Building selected 5 factories, the Jiangnan, Hudong, Qiuxin, Wuhu, and Wuchang Shipyards, and steps were immediately taken to expand and technologically transform these plants. At the same time, they decided to build a new shipyard in Guangzhou to assume some of the contract manufacturing tasking. In April

1954, the Soviet government sent experts to provide assistance. Beginning in the latter half of 1954, materials and equipment for the five types of ships were sent in batches over separate periods of time to the various factories, and some of the factories began the assemblies while they were still in the process of expanding and transforming their plants.

The manufacture by assembly method that was used for these various combat ships has been seldom seen in the history of China's shipbuilding industry. The many complex production technology problems and the complex organization work during this assembly process were new to the naval units and to the local industrial sectors. On 23 August 1954, Xiao Jinguang and Huang Jing, Minister of the first Ministry of Machine-Building Industry, undertook thorough discussions of problems pertinent to contract ship manufacture. They jointly drew up plans for problems having to do with the quantities, progress, and funding for ship manufacture; with the transfer and receipt of materials, equipment, and technical materials purchased from abroad; as well as with a series of problems that had arisen regarding the scale of plant production, the long-range planning for the growth of the shipbuilding industry, and the construction of each yard. There was a great deal of understanding and support between the military and industry, which ensured the rapid and smooth development of contract ship manufacture. This established an excellent beginning for the development of the state shipbuilding industry "by integration of the military with the civilian, where the military is in charge."

To coordinate contract manufacturing efforts for the 5 types of ships at the various shipyards, the Navy determined to station resident military representatives at each plant to monitor, inspect, and handle as needed all technical problems that occurred during construction. At that time when technical personnel were in such short supply, the state gave priority to college students graduating in the shipbuilding profession and assigned them to the Navy as resident military affairs representatives at the yards. The Navy Ship Repair and Construction Department selected some technical cadre and workers to staff the plant military representatives' offices from among ship crews and Navy ship repair yards. Some 130 persons were assigned as resident military representatives at the various yards.

As the contract manufactured ships were produced one after the other, shakedown missions were placed on the agenda. Beginning in the first half of 1956, the Navy did a great deal of prepatory work for the trial cruises of the first batch of contract manufactured ships. For example, in the beginning, the trial cruise sea area for the newly made submarines was an area near the Zhoushan Islands, for which all kinds of preparations were made. Then, to prevent enemy ships from interfering and ruining the tests, another submarine trial cruise area was opened up near Lushun. The Lushun base did such prepatory work as depth measurement and clearing the area. Over a 2-month period they made 21 excursions with minesweepers, 16 sorties with hunter-killer ships, and 12 trips by surveying ships for a total range of more than 2,000 nautical miles. This shows that just providing a test cruise sea area can be a rather strenuous task.

The navigation test for the first frigate was held in January 1957 in the Zhoushan sea area under the specific leadership of East Sea Fleet Deputy Commander Peng Deqing [1756 1795 3237] and the Trial Cruise Sea Area Working Group. At some time during the trial, they carried out speed and inertial ship navigation performance tests and rotation precision tests on such instruments as gyrocompasses. They also carried out such tests as torpedo launching, cannon firing, and radar and sonar tracking of targets. All of the tests were conducted on 22 ocean outings. During the trials, the frigate acceptance commission made a full investigation of the quality of the assembly manufacture in accordance with the tests' outline requirements, and they concluded that the tests met the requirements. They then went on to test the hunter-killer ships and the minesweepers.

On 12 February 1957, the first group of 2 submarines manufactured at Jiangnan Shipyard made a long-range voyage into the Lushun sea area for trial runs. During the mid-winter season in the northeast, the climate is extremely cold, and the crew and shipbuilding workers overcame many obstacles to carry out several underwater trials and to smoothly accomplish dozens of particular tests, such as emergency submersion, sitting on the ocean floor, launching torpedos, and charging storage batteries. After multiple trials of the first batch of contract manufactured submarines and other ships, the Navy trained a group of cadre forces familiar with the performance of the newly built ships and able to operate the technology. This was not eight years after the founding of the People's Navy. The military and worker personnel participating in the trials saw with their own eyes that the combat ships assembled by China itself were sailing on the ocean, and none could escape a feeling of pride.

At the beginning of contract manufacture, assembly took place in strict accordance with the imported materials, equipment, and blueprints. It was later discovered that some of the assembly techniques, technical standards, and measurement and test means as stipulated in the technical documents imported from abroad were in many instances not suited to the technical level of our domestic shipyards. It was particularly discovered during the trial runs for the first batch of ships that these ships were designed by the Soviets for the climatic conditions in the sea areas of their own country and that there were great differences between those and the conditions of the natural environment in China's sea areas. During the summer, for example, the high temperatures in the East China Sea Region exceeded the temperature standards of the original design of many instruments and much equipment on board, and this affected their normal operation. The temperatures in the magazine areas greatly exceeded the prescribed standards. With the East China Sea Region such as this, there is no need

to speak of the subtropical South China Sea Region. In addition, there were many other problems in the original designs that were inappropriate to China's coastal conditions and to traditional Chinese life styles. For example, because the temperatures and salinity of all of China's seas are rather high, components in many instruments failed quickly, which reduced the life of the instruments. Ship hulls that have been floating in the ocean get deposits, making such things as the tail shafts and propellers corrode easily, and they then do not meet original design requirements. The traditional eating habit of the southern Chinese is to eat rice and fry vegetables, but the original cooking range and cold storage capacities did not meet our need. For example, the cabins and control and observation locations, as well as the dimensions or positions of tables and chairs for everyday life, were all designed for the average height of Soviet sailors and were not particularly adapted to the Chinese sailors with their shorter average height. All these things brought an unexpected complexity to the modification efforts of the contract manufacturing.

To revise the original design blueprints for some ships, the Navy and the Bureau of Shipping Industry coordinated research on several occasions. The more important problems were studied repeatedly by factory design personnel and ship crews before being adopted, and some underwent necessary testing first. Through a series of design revisions, valuable experience was gained for later improvements on copies and our own designs of combat ships.

Experience has shown that using domestic materials and equipment as much as possible is an important link in quickening the pace of shipbuilding. After China's shipbuilding industry underwent the preliminary construction of the first 5-year plan, beginning in the late 1950s there was a degree of initial use of domestically produced materials and equipment in assembling the contracted ships. From February 1955 through May 1959, the Wuhu Shipyard made 51 "contract manufactured" torpedo boats. After the first batch of more than 20 torpedo boats was manufactured with imported materials and equipment, difficulties were encountered in buying the ship hull lumber from abroad, and if a way could not be found quickly to use domestically produced lumber, future progress in ship manufacturing would inevitably be affected. Although there are considerable forest resources within the borders of China, it is not a simple matter to select suitable timber from among those resources. Lumber used to construct torpedo boat hulls must not only be from a special tree (larch) grown in particular locations, but each piece of lumber used must be classified as from root, trunk or top as well as to the sun-orientation of those locations. Testing is done for various technical specifications. If somewhat out of the specification, the hull that is manufactured will lose its strength and ability to withstand sea water corrosion. The requirements of the lumber milling process are also quite strict, especially for the lumber gluing techniques, which was a new problem at that time for the Chinese shipyards. Through careful study and countless tests by yard engineers, technicians, and resident military representatives, each problem was finally solved in turn, ensuring the construction quality of the torpedo boats. In early 1958, the first torpedo boat manufactured using domestically produced lumber underwent testing, where it was found that all performance specifications had been met.

In 1957, after completion of China's first 5-year plan, the level of national industrial technology had improved, and some of the materials and equipment needed for shipbuilding had begun to be manufactured domestically using copying techniques. For example, aside from some important equipment that had to be purchased from abroad, other ordinary materials for a cruiser that had been designed and manufactured by the Navy, including the steel used for the hull, had begun to use domestic products. Beginning in September 1956, the Wufu Shipyard began work on the material and equipment for manufacturing the second batch of more than 10 torpedo boats, in which domestically provided items comprised 75 percent of the total. In the third batch that went into construction in 1958, that proportion was 88 percent. Improvement in the self-provided proportion not only shortened the construction period, but also economically saved the state a great deal of foreign exchange. Further, it was beneficial to stimulating the development of domestic industrial production. Through the contract manufacture of naval ships, the state shipbuilding industry quickened the pace of technology transformation, e.g., the manual riveting method that had long been in use as a shipbuilding technique was replaced with universal use of new welding techniques. The development of production technologies in the shipbuilding industry created the conditions for naval shipbuilding to move from simple assemblies to the stage of partial self-construction.

A total of 116 ships, totaling 43,000 tons, were made under the contract manufacture of the five types of ships. The combat performance of these ships was approximately at a international level from the late 1940s to the early 1950s. Ship's crews used this equipment to accomplish various tasks in combat, daily service, and training.

Section 3. Self-Directed Research and Development

40050607A Beijing Dangdai Zhongguo Haijun (*China Today: The People's Navy*) in Chinese Oct 87 pp 239-249

[Text] During the early period of the 1950s, the PLN began to design and manufacture on its own class 53 and class 55 patrol boats, which had played such important roles in every action to liberate the coastal islands. As higher speeds and greater fire power came to be demanded in combat, the various crews designed and built patrol boats in several models. In February 1959, on the basis of patrol boats they designed, the Navy Ship Repair and Manufacture Department adopted the strong

points of several models designed by various crews and the naval academy, and they unified these revisions into a new model patrol boat. Construction began on this new model in May 1960 at the Dalian Shipyard, and after 2 years of test production and trials, the design was finalized in November 1962. It was given the official designation model 62 and went into batch production. This was the third patrol boat (the name was later changed to "seaward defense boat") designed by the Navy, and it was capable of speeds up to 30 knots.

During the more than 10 years from the mid-1960s to the mid-1970s, more than 300 model 62 seaward defense boats were built. Patrol boats like this, displacing no more than about 100 tons, have been successful time and again in naval warfare; they once coordinated with torpedo boats to sink the medium-size warships of the Guomindang (KMT). They made an important contribution to securing naval defense.

In view of the many shortcomings discovered during usage of the hunter-killer ships to which China had gained the right to manufacture, particularly in problems regarding seaworthiness in stormy seas, the Navy organized its efforts to begin design of 300-ton-class hunter-killer ships in 1959. After the founding of the Fleet Academy in 1961, all work came under the leadership of the Navy, and responsibility for the hunter-killer ship design effort was given to Institute No. 701 of that Academy.

From the point of view of the strategic situation at that time, since the South China Sea Fleet was in urgent need of resupply warships, it would have been best if the hunter-killer ships had been turned over to a shipyard in the Huanan area. But those shipyards were not capable of that task. Had the ships been transferred to the South China Sea after being built at northern shipyards, it would have been hard to pass through the KMT Navy-blockaded Taiwan Strait. In the end, they used the method that had been used to build patrol boats for the South China Sea crews; that is, components were machined at the northern Dalian Shipyard and shipped by train to the south for assembly. The first hunter-killer ship began assembly at a Huangpu work site in August 1962, was launched in December 1963, and began sea trials in March 1964. After completion of several important tests, it was put into service in November. In January 1966, the South China Sea Fleet organized a simultaneous test for two ships, which was better for checking the design and construction quality of the hunter-killer ships. Not only did this test prove the better high-speed performance of this model of the hunter-killer (its highest speed was 30 knots), but it also showed that China had reached an advanced level in the design and manufacture of small surface ships. Beginning in 1966, batch production of the hunter-killer ships was begun simultaneously at two sites in Shanghai and Guangzhou, respectively.

In the process of building the hunter-killer ships, new technical difficulties were encountered. Success in overcoming the difficulties with welding technology for the thin alloy-steel plating used on the hulls was only reached after repeated tests. For example, at the beginning, the anchor port for the anchor on the ship's hull did not fit snugly, and the anchor could not be brought tight against the hull. To fix this problem of inappropriate anchor port shape, more than a hundred experiments were conducted in the shipyard berth on dropping and pulling up the anchor before the necessary improvements could be made.

The design and construction of the hunter-killer ship were realizations of the principles of "independence and initiative" and "self-reliance." Even as they began, the design personnel had taken into consideration the particular characteristics of China's sea areas and the conditions of state industrial production. The general arrangement plan was in accordance with the combat ships then being used by naval units, and it paid attention to long-established operational habits and experiences of naval commanders. Although some of the on-board materials and equipment for the first and second ships were imported, all that for the later ships was made in China. Not only was this true, but the quality of this hunter-killer ship was also worthy of pride by its developers. In August 1973, a hunter-killer ship in the North China Sea Fleet braved force-9 and stronger winds to rescue people who had fallen overboard from a North Korean fishing vessel. Struggling through the high waves for more than 10 hours, the ship's bow would often rise high or be buried in a wave, while the metal between the cabins rang with vibrations. But inspection after the return trip showed that aside from some dents in places along the hull and a few twisted ribs, there was no other damage. In 1976 two hunter-killer ships built with foreign assistance sailed through the Straits of Malacca to the Indian Ocean. They safely reached their destination and gained international acclaim for China.

With the growth of national economic strength as well as with the development of ocean navigation, fishery production, marine scientific surveys, and ocean oil exploration, the role of naval ships became steadily more complex. The obsolete assemblage of seaward defense ships originally in the Navy could less often meet demands. In the early 1960s, Institute No. 701 of the Fleet Academy designed a seaward defense gunboat of more than 1,000 tons displacement. This was the first 1,000-ton surface ship to be designed in China. The ship was fitted with a diesel engine of original design and used AC- driven electrical equipment. The new-design gunboats were tested in a typhoon of force-12 winds, went on long-distance trips of various sorts, and safely sailed more than 100,000 nautical miles. Their furthest destination was to the vicinity of the Zengmu Reef in the Nansha islands. This showed that the development of China's surface ships had made the transition from small to medium-sized ships.

In 1965, the Navy drafted the third 5-year plan for naval equipment research, in which was proposed the development of such important objectives as advanced medium-sized surface ships, medium-sized submarines, and nuclear submarines. Due to the effects of the Cultural Revolution, it was not until the 64th meeting of the Standing Committee of the Central Military Commission in April 1967 that this plan was discussed and

approved. With that action, developments of new seaward defense boats, destroyers, and medium-sized submarines, as well as various associated new equipment, was included in work schedules.

China's own research and development efforts for a new missile seaward defense boat began in 1968. For various reasons, chief among them the disturbance of the Cultural Revolution, this effort was delayed indefinitely. To meet the urgent force needs, it was later decided to adopt a transitional method, that is, to make full use of much of the equipment on old ships and to use the successful experience in refitting the missile ships to begin construction of an ocean-going (053H) missile seaward defense ship. Construction on the first model 053H began in February 1975, it was launched on 28 June, and was turned over for active duty in December. After the breakup of the Gang of Four in 1976, construction of several of these new missile ships was accomplished in just a few years, and they have become part of the combat arsenal, adding fresh input to Navy surface ship units.

Among medium-sized surface ships, the destroyer is one that serves many purposes, and foreign navies generally have them in considerable numbers. Their on-board weaponry has grown from torpedoes and cannon to focus on antiship and antiair missiles. The size of the ship has also steadily increased. The full-scale design and manufacture by China of destroyers began rather late. In 1960, a conference chaired by Navy Admiral Xiao Jinguang arranged for the missile destroyer development effort, but progress was delayed by temporary setbacks in the national economy. Only some of the development projects could be retained, as for example the reproduction of steam power facilities. In 1965 to meet the demand for convoy screening during long-range missile tests, development of the missile destroyer was once again begun. This action was implemented through conferences of various industrial sectors convened on several occasions by the National Defense S&T Commission Vice Minister Liu Huaqing, et al. Construction began on the first medium-sized missile destroyer in December 1968, and the ship was officially adopted into the ranks of warships in December 1971 under the designation model 051. It was continually improved through repeated scientific testing, which provided an important basis for the advancement of later missile destroyers.

The model 051 was the first medium-sized surface ship designed and built by China in which all materials and equipment came from China. Its displacement was more than 3,000 tons, and the ship was the accomplishment of coordinated and complementary development by more than 20 provinces and municipalities throughout China as well as of a dozen or more industrial sectors. More than 1,000 associated pieces of major equipment and several hundred metallic and non-metallic materials were developed and provided by several hundred factories and research units. Various fields of industrial production and scientific research, including such sectors as shipbuilding, machinery, missiles, armaments, electronics, metallurgy, petroleum, chemical engineering, textiles, light industry, and construction materials, all made contributions to the construction of the destroyers, and this can be seen as an epitome of Chinese industrial development.

To advance batch production of the model 051 missile destroyer, the Navy started preparations for finalization of the missile destroyer design in accordance with the requirement that "design for products must be finalized, equipment must be prescribed, and production must be made linear." A design finalization group, formed in 1972, did a great deal of land and sea-based testing for much of the important newly developed equipment, finished the appraisals or design finalization, and arranged the locations for production. This created the conditions for the sustained production of this missile destroyer and laid the foundations by which the Navy could build a contingent of medium-sized missile destroyers.

After conventionally-powered submarine construction had gone through a stage of diligent reproduction, it began full-scale incorporation of domestically-produced materials and equipment in May 1965. After constant improvement, manufacture quantities were gradually expanded in order to create conditions favorable to the building of a submarine contingent capable of long-range activity. From this bais, the Navy later designed and test-produced a new conventionally-powered submarine.

As soon as research began on nuclear submarines, it received a great deal of attention from the CPC Central Committee, the State Council, and the Central Military Commission. In 1959, Chairman Mao Zedong categorically stated: "Even if it takes 10,000 years, we must make a nuclear submarine!" Premier Zhou Enlai gave particular support to this effort throughout its life. Following achievements in China's peaceful research on nuclear reactors, the CPC Central Committee approved Nie Rongzhen's [5119 2837 5271] "Report on the Initiation of Nuclear-Powered Submarine Development." To this report, General Secretary Deng Xiaoping added a note confirming that it would be "a good thing" to hasten the development process. Afterward, the Navy and the Second Ministry of Machine Building Industry began to arrange for personnel to carry out research on nuclear power facilities for use in submarines.

By the first half of 1962, a large number of engineering projects had to be abandoned due to temporary difficulties with the national economy, as well as to such factors as insufficient technical strength and lack of research facilities. Thus, it became difficult to carry out the development work on the nuclear submarine. Several meetings were held by naval leaders and the Fleet Academy party committee on this subject, and Fleet Academy Director Liu Huaqing and political commission member Dai Runsheng [2071 3387 3932] also reported to Nie Rongzhen. The central theme of their report was that from the long-term view, the nuclear submarine research and development effort should not

be entirely dropped. This would not only lead to economic losses, but also to the dispersion of the technical contingent, which would generate even greater difficulties when the project was again taken up.

Based upon reports by the Navy and the Second Ministry of Machine Building Industry, the special commission of the CPC Central Committee chaired by Premier Zhou Enlai determined during the latter half of 1962 that despite the national economic difficulties of the time, a small number of nuclear submarine research personnel would be retained to continue theoretical research and experiments on nuclear power facilities and to prepare the technology for the design and test production of nuclear submarines. In 1965, Premier Zhou Enlai proclaimed that research on nuclear submarines would restart. At that time, a report was drafted by Deputy Minister Liu Huaqing, et al, of the Sixth Ministry of Machine Building Industry, who were in charge of the research effort. The report pertained to the research and manufacture of nuclear submarines and was written in the name of the ministry leading cadre group on behalf of the CPC Central Committee Special Commission. In August, that committee approved the first step of preliminary research on a nuclear attack submarine as well as the second step of drawing up plans for a missile nuclear submarine, and it also requested that the nuclear attack submarine be launched for trials in 1972. It also went ahead with the construction of a nuclear submarine land-based power reactor and naval nuclear submarine docking base.

In 1966, Institute No. 719 of the Fleet Academy undertook design of overall plans for the first nuclear submarine. Development of nuclear submarines is a very complex and enormous project, which involves all industrial sectors and scientific research fields in a nation, and it requires great cooperation among thousands of units for its success. The arrangements for several important tasks were handled personally by Premier Zhou Enlai, and decisions were made through discussions by the CPC Central Committee Special Commission. Chairman Mao Zedong wrote many times about some of the major problems of the project. During the Cultural Revolution, factories and research units fell into disorder, and the nuclear submarine development effort was faced with the danger of being cut off. In one article[1] Lin Huaqing described the predicament of that time in great detail: this "outstanding project that has been personally approved by Comrade Mao Zedong and handled by Comrade Zhou Enlai involves 27 provinces and municipalities and thousands of research and production units. Just as we were gathering our strength to make a breakthrough, some factories closed down because of the disorder of the Cultural Revolution, and although we have had several coordinating sessions, it has not been possible to begin several of the projects. After General Secretary Nie [meaning Nie Rongzhen] had heard the situation reports from these projects, he agreed to convene a coordination session in Beijing with the participation of several hundred factory directors, party secretaries, and technical leaders in charge of the major portions of the project. It was ruled that all would attend who could be notified, even those who were being criticized.[2] That kind of session was risky at that time because it would have been easy for the likes of Lin Biao and Jiang Qing to criticize the project as 'supressing revolution with production.' I chaired that meeting, and Secretary Nie spoke in person regardless of his advanced age, ill health, and difficult circumstances." After this coordination session, all units returned to work, but were faced with serious difficulties. On 28 August 1967, the Central Committee Military Commission issued its first "special letter" since the founding of the new China, in which all units and personnel having responsibility for the nuclear submarine development project were requested to pool their wisdom, to work closely together, to overcome all difficulties, and to accomplish their respective missions while maintaining both quality and quantity. After receiving the "special letter" from the Central Committee Military Commission, pertinent industrial sectors dispatched people to the factories and institutes involved in various provinces and cities to give thorough briefings. At these briefings it was repeatedly emphasized that this project had the approval of Chairman Mao Zedong and that it was vital to national security. No one permitted any attacks on the production workshops, and production could not be stopped for any reason. The widespread publicity and education was definitely effective. Cadre and workers treated nuclear submarine development as an order to be obeyed from the highest authorities, and this avoided all kinds of interference and insured the development mission against interruption. For example, during that time when armed fighting was serious and when people were scattered everywhere, technicians and workers engaged exclusively in development of the nuclear power facilities at more than 60 factories kept to their jobs and completed on time the construction of the land-based simulated power reactor. This spirit of sacrifice that risked danger on behalf of national security is worthy of our praise.

The Nuclear Submarine Project Office was set up in February 1968 under the National Defense Science and Technology Commission. It comprised people from the Navy, the National Defense S&T Commission, the Office of National Defense Industry, and the Sixth Ministry of Machine-Building Industry. The office was headed by Chen Youming [7115 0671 6900] and was responsible for handling the day-to-day affairs of nuclear submarine development.

In November 1968, construction began on the first nuclear submarine. Chaired by Navy Admiral Xiao Jinguang, a joint administrative conference was convened on 9 October 1969 to survey the progress of the project. Participants included leaders from the State Planning Commission, the Office of National Defense Industry, the National Defense S&T Commission, and pertinent industrial departments and research institutes. It was resolved by the State Council and the Central Committee Military Commission that the Nuclear Submarine Project Leading Group would be established to

organize and coordinate efforts in all areas; this was done in October 1969. In the beginning, the head of that leading group was the first political commissar of the Navy, Li Zuopeng [2621 0155 7720].[3] He was later replaced by Su Zhenhua [5685 2182 5478]. Important members included: Yu Qiuli [0151 4428 6849], Minister of the State Planning Commission; Vice Ministers of the National Defense S&T Commission, Qian Xuesen [6929 1331 2773], Luo Shunchu [5012 5293 0443], and Zhao Qimin [6392 0796 3046]; Navy Deputy Commander Zhou Xihan [0719 1585 3352]; Deputy Minister of the First Ministry of Machine Building Industry Zhou Zijian [0719 1311 0256]; Deputy Minister of the Second Ministry of Machine Building Industry Liu Wei [0491 0251]; Deputy Minister of the Sixth Ministry of Machine Building Industry Bian Jiang [6708 3984]; Group Leader of the Military Affairs Administration Group of the Office of National Defense Industry Zhang Yuanpei [1728 0337 1014]; Deputy Director of the Office of National Defense Industry Li Ruhong [2621 1172 3163]; Deputy Director of the Navy Equipment Department Hou Xiangzhi [0186 0686 0037]; and Deputy Director of the Fleet Academy Chen Youming. The Nuclear Submarine Project Office was under this leading group, and it later honored the directive by Premier Zhou Enlai that from 1970 until 1978 it be under the organizational leadership of the Navy.

The great deal of thermal energy generated during the atomic fission process in the nuclear submarine power unit is converted by a steam turbine into mechanical energy to drive the submarine propeller. This allows the submarine to stay underwater for long periods. Building the nuclear power unit land-based simulator experimental reactor was a necessary intermediate test before installing the nuclear power unit in a submarine. In July 1970 when the land-based experimental reactor of the first nuclear power unit was about to undergo rotation initiation testing, Xiao Jinguang and Luo Shunchu chaired and held a meeting of the nuclear submarine project leading group to go over the preparations for initiating operations. Following that, the Central Committee Special Committee chaired by Premier Zhou Enlai discussed and approved that grand action and further directed that "complete preparations and scrupulous detail will ensure that there will be no cause for failure and that success will come on the first try." Through the meticulous operations of all the technical personnel and workers, after testing in stages, full-power tests were finally begun, and the goal of first-time success was met. This laid the foundation for the installation of nuclear power in submarines.

The first nuclear attack submarine was launched on 26 December 1970, and the dockside installation of equipment began. The installation of each system and piece of equipment in the nuclear submarine was quite a bit more complex than for other submarines. There were tens of thousands of instruments, more than 100 km of various electrical cable and conduit, and hundreds of engineering items in all sizes. In April 1971, dockside testing of all systems was completed, and the submarine was ready for fueling and the first active integrated test of the entire ship. On 25 June under the direction of Zhou Enlai and Ye Jianying, the Central Committee Special Commission heard the report, and Zhou Enlai again issued a directive: "On this, our first nuclear submarine trial, we must proceed cautiously, take the work a step at a time, and use as much time as needed for full testing so that we may learn all the more." Premier Zhou Enlai repeatedly gave instructions for the gathering of various scientific data and information throughout this test in order that experience could be gained. He also specifically pointed out that the sea trial was to be in four stages: dockside, on the surface, in shallow water, and in deep water. The units and departments carefully followed these instructions from Premier Zhou and smoothly carried out the four-stage trials. They went out to sea more than 20 times, did nearly 200 tests, and accumulated travel of more than 6,000 nautical miles. On 1 August 1974, the Central Committee Military Commission issued orders christening this first nuclear submarine the "Long March-1" and incorporating it among naval combat ships, as well as conducted a ceremony for the granting of a stately military banner. With this, the People's Navy entered a new stage characterized by possession of nuclear submarines.

This first nuclear submarine designed and built by China was of comparable technical performance with similar submarines built in early periods of some foreign arsenals, while certain technical specifications were somewhat more advanced.

In China with its weak industrial base and somewhat backward science and technology, the ability to develop this outstanding weapon of complex technology fully indicates the superiority of the extensive cooperation within socialism. In December 1964 at the 3d National People's Congress, Premier Zhou Enlai once remarked: "We cannot take the path that other countries have taken toward technological development, to scramble along step by step behind others. We must instead break with convention and use advanced technology to our utmost so that over a not too long period of history, we might build a modern socialist world power." The successful development of the nuclear submarine eloquently proved the validity of that sentiment.

After Ye Jianying, Vice-Chairman of the Central Committee Military Commission, had seen the documentary film of the nuclear submarine development process, he was moved to say: "For this feat, the people thank you." Premier Zhou Enlai kept a deep concern for Navy construction through the days of the turmoil of the Cultural Revolution, and he greatly exerted himself for each step of progress in the nuclear submarine development effort. The people of China will never forget him.

China began designing and developing aircraft equipment in the 1950s, and by the 1970s the Navy had significant quantities of supersonic ground attack aircraft, fighters, and bombers at coastal bases that were

shared with the Air Force. Development of aircraft for the exclusive use of the Navy began in 1960 when the Navy established sea-use aircraft research organizations. Institute No 605 began designs in 1969 and Plant No 122 handled trial manufacture; later on, trial manufacture shifted to Plant No 322. The Naval Air Force of the North China Sea Fleet sent representatives to join in the development effort. After years of hard work, the Shuihong-5 over-water patrol bomber was developed preliminarily using a domestically made engine, customized instrumentation, and electrical equipment. This aircraft reflected the characteristics of the Chinese marine environment and provided important experience for the further development of all sorts of specialized aircraft for the Navy.

In addition to the major naval weapons just described, there were also corresponding developments in landing craft and other supplementary ships during this time. Beginning in the 1960s, a large number of 5-ton small scale tank landing craft was designed and produced, from which were derived other multi-purpose working craft. By the 1970s, a large landing ship of an advanced technical level was designed by Institute 708.

Beginning in 1969 in order to meet the demand for long-range booster rocket scientific testing, trans-oceanic survey ships were developed, along with associated ships. Among these were included the main survey ship, marine survey ships, and three types of supplementary ships (search and rescue ships, recovery tugboats, and integrated supply ships), all displacing more than 10,000 tons. It was necessary to set up large-scale equipment and systems on-board and to solve several new problems in engineering technology. To enhance organizational leadership for this project, the CPC Central Committee Special Commission set up the "718" project leading group and office. Along with his other posts, Chen Youming concurrently served as head of this office. Several major technical problems were overcome during the developmental process. For example, the problem of supply facilities for ship-to-ship provision of fuel, water, and materiel was initially supposed to be dealt with by using imports, but negotiations broke down several times. After repeated probing and testing, engineers at the Dalian Shipyard finally came up with China's first apparatus that could transversely supply dry goods (foodstuffs, ammunition, etc.) and liquids (fuel and fresh water) while in transit. Several trials during the first trip to the South Pacific proved that use of this transverse supply apparatus was convenient and reliable. Technically advanced measuring and test equipment developed in China was installed on different types of ships for trans-oceanic survey crews, and this equipment represented new scientific achievements appearing in the several new fields in China of electronics, precision machinery, and new materials.

Certain other ships and weapons, as for example, torpedo boats and missile ships; ships for use in laying and sweeping mines; various ships on sea-duty for use in ocean rescue, engineering, reconnaissance, shipping, repair, and medical purposes; and shore batteries and shore-to-ship missiles used for coastal defense, have all developed steadily first by reproduction and then by our own designs and manufacture. They are playing an important role in guarding ocean defenses and in the struggle for protecting ocean rights.

Footnotes

1. Liu Huaqing: "Weapons and Equipment Modernization Must Take Its Own Path" and "Comrade Nie Rongzhen and Science and Technology Work," GUANGMING RIBAO Publishing House, page 149.

2. Some leading cadre and technical personnel who were undergoing criticism and struggle.

3. In June 1962 Li Zuopeng took over as Navy Deputy Commander, and in June 1967 he became the Navy's first political commissar. During the Cultural Revolution he sank to become a principal criminal in the Lin Biao Anti-Revolutionary Group.

Chapter Sixteen. Speeding Up the Arms Development Process

Section 4. Strengthening Research

40050608A Beijing Dangdai Zhongguo Haijun (*China Today: The People's Navy*) in Chinese Oct 87 pp 459-465

[Text] In 1980, the Deputy Minister of the Central Committee Military Commission, Nie Rongzhen, stated that "weapons problems of tomorrow will involve scientific research, and we must bring the utmost capacity of our armed services to bear on them." This was a far-sighted directive, rich with substance. The reasons are as follows: first, for a long period before anti-aggression warfare breaks out, the major strategic effort is not the manifestation of weapons in large quantities, but rather the research and verification of new weapons. The emphasis must be on research over production and on the addition of technical resources. Second, we can see from the situation in the militaries of developed nations that new technologies are unending, that weapons and armaments will continue to change, and that competition in this area will be unprecedentedly intense. The key to whether we can beat the competition will lie in strengthening our research, which will become an important factor in determining our success in future warfare. Third, it is military people who best understand and who are most involved in the development of armaments. In keeping with demand and with what is possible, military units can promptly and effectively arrange for and initiate research efforts, as well as make decisions regarding each important problem. The military role in managing research would be to propose tasking, to handle verification, to take charge of testing and design finalization, and to strengthen control over each link in the process of new weapons development.

The research effort for Navy weapons has followed a tortuous path, and the lessons learned from experience are deeply ingrained. In 1957, the Navy created a succession of six institutes, as it began to have its own research capability. It established a Department of Science and Technology Research in 1958, which later merged with the local ship research forces to form the Fleet Academy and to constitute a scientific research arm. Although the Soviet Union had reneged on contracts and withdrawn its experts, creating many difficulties for the development of Navy weapons, with this new technical research contingent, many weapons came to be reproduced and developed. In 1969 and 1970, after the Fleet Academy and the Naval Defense Missile Institute had gone back under the leadership of the Navy, an Assessment Department was set up at the Fleet Academy as the Navy weapons research mechanisms moved toward completion. But after 1975, the two institutes just mentioned were taken completely under the leadership of the industrial sector, a move that greatly weakened the development and assessment of Navy weapons. In 1977, the Navy again tried to set up a weapons assessment institute, but was unable to see this fully implemented. Only with the establishment of the Navy Weapons Assessment Research Center in 1983 was the Navy assessment and research strength gradually recovered and expanded.

The Navy Weapons Assessment Research Center (NWARC) was established with the great determination of the Navy during the restructuring and streamlining of structures in all People's Liberation Army service branches. The Navy leadership was deeply aware that this was an urgent need for the modernization of the Navy and that it established a foundation for the challenge of the new technological revolution. When NWARC was founded, people came to it from many different places, but neither the organization nor most of its institutes had their own housing facilities, and there was no alternative but to use mobile housing to begin work. There was an incomplete presence of S&T cadre with different expertises, knowledge structures were not reasonable, and technical capability was quite weak. But the assessment research task as ordered by the higher authorities was extremely urgent and onerous. To this end, Navy Admiral Liu Huaqing explained the situation to the S&T personnel to encourage them. He said, "As far as gaining weapons is concerned, in the past the Navy has lacked systematic assessment research, which has led to losses and many ups and downs, a lesson that has made an impression. Naval weapons construction is a complex systems project, where assessment research is the first process in armament research. In reviewing projects, only by thorough assessments can we be resolute. Assessment mechanisms are essential for the modernization of the Navy." He also said, "Although NWARC is currently in a period of difficulty, if we determine to begin work on something, we will do so whether or not appropriate conditions exist. The key to whether China's naval construction can make much progress lies in whether we can get on with research and education." Relying on a spirit for both preparation and work, all personnel at NWARC have striven to overcome difficulties in actively initiating research efforts. As far as weapons assessments are concerned, the major item of responsibility for NWARC itself is to use unified leadership, shared cooperation, and collective problem solving to implement the Senior Engineer responsibility system. For all projects that would be difficult to accomplish with the capabilities of NWARC alone, broad participation by S&T personnel both inside and outside the military is sought by such means as employing experts, commissioning particular projects, and cooperative research. By 1986, the second generation of 18 advanced series of weapons had come into being, which encompassed more than 360 items for NWARC of such weapons as combat ships, special Navy aircraft, and electronics systems.

Regarding applied research, S&T personnel at NWARC have actively initiated improvement efforts for weapons in current use, in which they have made significant results, as for example with the development of a set of new self-guiding devices for gas torpedoes. By 1985, 5 research projects at NWARC had won state prizes for advancement in science and technology, and 17 had won S&T achievement prizes from the General Staff and the Navy. Prospects look good for work at NWARC, which is currently intensifying and broadening.

As far as the Navy is concerned, if we are to strengthen efforts at weapons research, there is the problem of how to marshall forces inside and outside the military to handle relations among all elements involved. The key to this will be exciting the enthusiasm of the national defense industrial sector, research departments, local institutions, and S&T forces within the Navy itself, that all might work toward naval weapons construction. With the transformation of the research system and the appearance of the new circumstances involving the commercialization of technology and changes in the allocation method for research funds, the Navy will both control primary authority for weapons research and oversee operations and will also pay attention to industrial and scientific research sectors. It will both foster coordination among economic cadre and seek to bring Navy weapons development into its rightful position in accordance with state directives and planning. Beginning in 1983, the Navy has experimented with an economic contrast system, a diverse responsibility system, and a commodity bidding system. It has accumulated a significant amount of experience from this, preliminarily achieving the excellent effect of improvements in weapons quality and economic results. To motivate the enthusiasm of S&T personnel within the Navy, there must yet be a facilitation of relations. In January 1984, the Navy proposed that the Navy Weapons Technology Department should enhance its uniform management and organizational coordination of weapons technology efforts. This would serve to organize Navy technological forces in the areas of research units, testing bases, schools, troop S&T departments, and representation of

military affairs and to weave them into a rope, working hard together, closely complementing each other, and diligently opening up new prospects for efforts in Navy weapons technology. The goal as proclaimed by the Navy regarding "The tasking of navy weapons technology efforts and the sharing of management duties" is, in fact, to further clarify the tasking share for each unit, to strengthen coordination, to facilitate working relations, and to concentrate the strengths of technical units and specialists at all levels toward this goal of building up the Navy, thereby continually advancing the rate of growth for the modernization of Navy weapons.

We want to hasten the modernization of Navy weapons, especially emphasizing prepatory research. Navy weapons are characterized by complex combinations, many special requirements, and long periods of development. When foreign navies develop new weapons, it is generally some 10-15 years before they are actually manufactured. China's national defense industry and science and technology got a late start, and we do not have much in the way of technology reserves, so we must all the more adhere to the principle of occupying the front ranks of scientific research. Nie Rongzhen, Deputy Minister of the Central Committee Military Commission, has clearly presented "the three moves" that are preliminary research, development of specifications, and batch production, and these accurately incorporate the objective rules of weapons development. But when specifically following these rules, one must proceed from reality when arranging just how to accomplish the "preliminary." The Navy learned from its experiences in this area. The nation encountered temporary economic difficulties during the early 1960s, when development of missile destroyers and nuclear submarines halted for awhile. In accordance with the requirements of the "three moves," the Navy continued with the development of certain pieces of key equipment for those two ships, to which it gave preferential treatment. This was because the development period for certain kinds of equipment was especially long due to its nature, the technical difficulties involved were rather great, and work could not be stopped just because ship development itself had stopped. Otherwise, there would be a problem with equipment lag when the ship work began again. Because the Navy went ahead with the reproduction of and preliminary research on some large-scale equipment when development on those two ships had been stopped (equipment such as steam turbine power facilities), this served to ensure the unimpeded production of missile destroyers and nuclear submarines during the 1970s. This was a successful experience. During the period of the Cultural Revolution, when the "three moves" method encountered damaging conditions, one type of missile vessel was not fully assessed, but was pressed into service with design and testing going on at the same time. The result was that equipment quality was not up to standard, the development effort was extended for several years, and in the end there was no choice but to abandon the project. That was a lesson in defeat. These completely opposite experiences show that the development of equipment must stay at the forefront of scientific research and that only when the relations between preliminary research and specifications development are handled well can new equipment be developed quickly and in a balanced way.

Attention should also be paid to predictions when keeping research at the forefront, for production is a prerequisite of decision making. In order to keep up with the levels of foreign weapons and with development trends, the Navy began to send leading cadre and technical specialists abroad for observation in 1980. The Navy also held international academic conferences and invited foreign ships to visit China. From all of this, they learned and expanded their horizons, initiating strategic research on naval weapons development and predictions regarding the development of new technologies. Efforts at research on foreign military materials was also intensified. At NWARC alone, more than 5 million words from foreign naval materials were gathered and translated in a 2-year period, 8 anthologies were published, and 66 investigative reports on foreign vessels were finished, all of which provided the basis for analyzing and predicting trends for new technologies and equipment in the world. The Navy also promptly communicated ideas for weapons development to industrial and research sectors, in order to seek support for them and to aid these sectors in understanding long-term development directions for naval weapons, to take charge of making arrangements, to do preliminary research, and to increase technology reserves.

Keeping research in the forefront also depends upon science plans. Planning is a part of strategic tasking, for only with long-range planning for science can we ensure scientific, far-sighted, continuous, and stable naval weapons research and development. During the Cultural Revolution, there was a great deal of confusion for weapons development, one important factor for which was a lack of scientifically-planned assessment. After 1980, as naval weapons were improving and designs were being finalized, advanced, and improved, the Navy actively initiated research on weapons development planning. Together with pertinent industrial and research sectors, the Navy Weapons Technology Department arranged for research on and drafting of weapons research and development planning on three occasions by industrial category, and it deployed assessment and research efforts on certain relevant electronics, weapons, and power systems. These plans set the capacity for assessments deepening according to the principles of limited goals, points of focus, balanced development, campaign systems, and step-wise procedures. Not only was there individual assessment for some equipment, but there was also analysis and assessment of entire series. There was not only qualitative assessment of some equipment, but also preliminary quantitative calculations and assessment. There were not only preferential programs for technical channels, but also an emphasis on and an overall evaluation of integrating combat technologies in such areas as warfare objectives,

goal analysis, and combat effectiveness. Economic feasibility assessments also had a good start, which gave a realistic basis to formulation planning. In June 1985, there was a readjustment of weapons development planning, which both brought planning into line with reality and also kept an eye on the future and growth.

Naval weapons are just now in a period of renewal, and according to the strategic change in the guiding ideology of military construction and to the strategic principle of "active defense, coastal waters warfare," the Navy weapons effort will pay close attention to development work for the new generation of missile destroyers, multipurpose seaward defense ships, new models of nuclear and conventionally-powered submarines, naval aircraft, missiles, torpedoes, and electronic warfare systems in order to meet the demands of future warfare. Among the major indications of the new generation of weapons, one is good usability and quality, as well as standardization, serialization, universality, and modularity, while another is the trend toward lightness in weight, possession of missiles, use of electronics, and automation.

Over the past 36 years, as China's economy has grown, a more complete naval weapons research and production system has been tentatively established. The building of weapons has gone from buying the rights of manufacture to research and development on our own and from the development of small ships to that of missile destroyers, missile seaward defense boats, and nuclear submarines. All of this was achieved in a nation that had a weak industrial base and a late developing science and technology and that had also gone through the terrible disruption of the 10 years of turmoil. Were it not for the disturbances of the Cultural Revolution, our accomplishments could be even greater, and our pace even faster. As our national economy evidences sustained stability and coordinated development, the industrial base will not cease to strengthen, the national defense S&T capacity will grow more powerful, and the prospects for weapon efforts for the PLN will naturally look even better.

Chapter 20. Navigational Security Construction

40050609A Beijing Dangdai Zhongguo Haijun (*China Today: The People's Navy*) in Chinese Oct 87 pp 564-565

[Text] As early as the Tang and Song dynasties, China had created a world-renowned navigational enterprise, and in such areas as navigation, observation and calculation of marine hydrometeorology, and navigation instruments, there had been many inventions and creations. But in more recent times, after China had reverted to a semi-feudal, semi-colonial society, ocean sovereignty largely fell into the hands of foreign aggressors due to the reactionary decadence of successive governments. Some navigation aids along waterways and in ports were under the near total control of foreigners; China's oceans, rivers, and lakes were arbitrarily surveyed by foreigners; ocean charts of China's sea regions were sold to foreigners; and ocean safety and rescue were even more powerless. This pitiful situation lasted until the founding of the new China in 1949.

The task of navigation security provides necessary safeguards for naval units in such on-sea activities as warfare and training, and it is an important component of preparations for naval battles. Items it encompasses include ocean navigation, marine surveys, ocean hydrometeorology, and sea safety and rescue. The establishment and development of navigation security efforts are important indicators in evaluating naval reconstruction efforts. During the 36 years since the founding of the People's Navy, there have been great advances in the navigation security enterprise. By the mid-1980s, we had set up navigation facilities throughout the coastal area of China, had undertaken surveys and measurements of sea areas, maritime space, and coastlines, had published a large number of ocean charts and navigation materials for use both inside and outside China, and had completed much of the mission regarding hydrometeorology safeguards and on-sea emergency rescue. From both arduous and common working positions, the many navigation security personnel in the Navy have made important contributions toward solidifying and safeguarding China's naval defense, toward protecting China's maritime sovereignty, and toward supporting ocean shipping, aquatic produce harvesting, construction of ports, development of marine resources, ocean salvage, and ocean scientific experimentation activities.

Section 1. Ocean Navigation

40050609B Beijing Dangdai Zhongguo Haijun (*China Today: The People's Navy*) in Chinese Oct 87 pp 565-575

[Text] Ocean navigation is an important means by which ships ensure their on-sea positions, avoid obstacles, and achieve safe progress. China has three kinds of coastal navigation facilities: one, navigation aid markers (or "navaids," for short), such as beacons, light standards, buoys, and navigation markers. Their function is to delineate navigation channel dimensions, to determine channel directions, to indicate underwater obstacles in a channel, and to guide ships along a safe route. The second kind of navaid is radio navigation equipment, which uses a special signal transmitted by radio transmitters placed along the shore that ships on the sea can use to determine their own positions. By the mid-1980s, we had set up radio range beacons, midrange navigation systems, and close-range navigation systems, with long-range navigation systems still under construction. The third type of navaid is navigation instrumentation, which includes instruments installed on ships for use in providing direction and speed as well as for determining on-shore and celestial goals. Among navigation instruments used on ships in the 1980s are the magnetic compass, gyro compass, sextant, patent log, depth-finder, and position finder, as well as such equipment as

inertial navigation, platform compass, and combined navigation devices, all designed and manufactured in China.

In mentioning contemporary ocean navigation facilities, we must follow the coming into existence of those things in China. The many laboring people in China have long used prominently placed shoreline buildings and temples, rock mounds, and rock formations as navigation aids. In 1311, navigation aid ships were placed in a strategic channel in Liujia harbor near Taicang in Jiangsu because of a hidden sandbar. The ships erected banners to guide other ships through the danger. An earlier version of the Longshan Temple had been built of soil, which in the day time rose high with banners and at night was illuminated with lamps, serving as a navigation aid. Later, simple light standards were built in Taiwan and Fujian for the use of passing ships. Beginning in the mid-19th century, each after the other, foreign aggressors controlled management of China's navigation aids to serve the needs of their shipping. Not only were there few coastal navigation markers in old China, but they were irrationally placed, they increased unevenly, and there were many voids. There were only some 323 stationary navigation markers along the extended coastline of China, spread among more than 30 harbors and nearby sea areas, and tragedies for ships were unavoidable as many areas lacked any navigation markers. Before the KMT withdrew from the mainland, they largely destroyed shore and harbor navigation facilities in an attempt to stop the PLA from liberating the coastal islands. The beacons and buoys of such harbors as Qingdao, Weihai, and Longkou were nearly empty of any illumination. Navigation aids in more than 50 areas along the channel from the mouth of the Changjiang to Jiangyin were damaged to varying degrees.

In the early period of the founding of the New China, navigation efforts were primarily the responsibility of the Office of Navigation Markers of the General Office of Navigation Engineering in the Ministry of Transportation. That office became part of the Navy in July 1953, which established the Office of Navigation Markers for the Department of Navigation Surveys at Navy Headquarters. Work at the time was primarily organized around a small number of navigation marker personnel who repaired and restored coastal navigation markers.

To break through the KMT ocean blockade of the mainland, the Government Administration Council of the PRC determined on the basis of the combat situation at the time to first open up and clear the ocean navigation line north of the mouth of the Changjiang so that goods and materials from north China might be transported south more easily. In the winter of 1950, the General Office of Navigation Engineering of the Ministry of Transportation joined with the Navy to study and arrange for the "Liuxing" navigation marker work ship to set out north from Shanghai for full scale inspection and resupply of all navigation markers along that route at the same time as they repaired all harbor navigation markers along the coast. Under the leadership of Ship's Captain Tan Guanfa [6223 0385 3127] and First Mate Chen Shuhui [7115 2885 1798], the crew of the Liuxing braved the aerial threat of the enemy and overcame the difficulties caused by the severe cold of the northern climate to victoriously accomplish their mission. They repaired and rebuilt 7 lighthouses, more than 20 light standards, and more than 10 buoys, as well as did depth sounding and regional minesweeping in the harbors of Yantai and Longkou and in the vicinity of the port of Dagu near Tianjin.

In the process of clearing the navigation lanes north of the mouth of the Changjiang, one of the more treacherous tasks was the rebuilding of the Caofeidian light beacon. The Caofeidian shoal is situated more than 30 nautical miles (nm) away from the port of Dagu near Tianjin, and it is a sandbar that is submerged at high tide. Ships entering the Tianjin harbor must be careful or they run the danger of grounding. The swells there are quite large, and as soon as a ship is grounded it will be struck furiously by the ocean waves until all is lost. Locals call the sandbar "the disassembly shipyard." Before the founding of New China, the KMT had build a light beacon on its surface. Because of the complex terrain, which can lead to difficulties, on one occasion, after supply and maintenance people had been sent to the beacon, a ship could not be landed because of weather problems, and all there froze or died of starvation. The light beacon had been deteriorating for years, and by 1949 it was seriously damaged. It was determined in 1950 to repair it. Design was the responsibility of Engineer Zhou Shouchun [0719 1108 2797], and construction personnel took great risks in that work. In order to save time and take advantage of the season, construction personnel got soaked while bringing in materials, driving piles, and installing the piles and lamp tools. This first large light beacon built since the founding of the New China was finally finished just before the arrival of the winter of 1951.

To safeguard activities of Navy ships in the eastern regions and to make good on preparations for ocean combat, with the support of local navigation marker departments, beginning in 1952 the Navy gathered men and materials to build navaids in the Zhoushan area. There are many islands and ports in that area, and it was an important base for Navy ships and units, as well as a water-based forces massing area for liberating the enemy-occupied islands off the eastern coast of Zhejiang, so there was an urgent need to build new navigation facilities. Over nearly 3 years, the navaid units built 72 navigation markers of various types in such areas as Dinghai, Shenjiamen, Cengang, Ningbo, Chuanshan, Changtu, Niu'e, and Shipu. The completion of these navigation facilities created extremely beneficial conditions in which the navigation channel from Shanghai to the Zhoushan Islands was opened up and in which opportunities for combat training and mooring for the ship forces were ensured.

As the force of the PLN extended southward, in early 1954 the Department of Navigation Channel Measurement again arranged for navigation marker units to

become involved with marker placement efforts in navigation channels along the coasts of Zhejiang and Fujian. The Navy at that time was still at an early stage of formation, many areas were still unable to provide ships for the navigation marker workers, and to accomplish the reconnaissance and marker-laying process just mentioned, the only alternative was to borrow local motorized junks to site and place the markers. During the at-sea construction, crews regularly encountered strafing by KMT aircraft and were sometimes threatened by enemy gunships. But all the people who were involved in the placing of markers were tenaciously combative, and in the end, they managed to place more than 200 navigation markers in such regions as the mouth of the Minjiang and the Dadeng watercourse outside Xiamen harbor. Some of the navigation routes were hidden nighttime routes opened near islands occupied by the enemy, and much skill was needed when placing the markers, as the effort ensured that small craft could safely pass at night right in front of the enemy. This activity fully exhibited the knowledge and intelligence of the navigation marker personnel.

After the reopening of the coastal navigation routes of Zhejiang and Fujian, in the latter half of 1954, marker placing operations were begun again, this time to open the navigation route around Hainan Island. Before 1949, navigation markers had never been placed around that island, and the eastern mouth of the Qiongzhou Strait on the north side of the island was the site of minelaying during WWII and was still a mine danger area. To ensure that ships could safely pass through this channel, the State Council requested that the Navy accomplish the navigation marker placement mission around Hainan Island and the Qiongzhou Strait within a short period of time. During the construction work, because the locations where markers were to be placed had incomplete materials regarding water depths and the navaid boats could not easily get nearby, the construction crews rowed to the locations in sampans. When even the sampans could not dock, they would jump into the waist-deep water, carrying their materials onto shore. Once upon shore, they still had to scramble up mountains and cross mountain ranges, carrying out their construction and installation at predetermined marker placement sites. After a taxing struggle, the mission to construct 40 light beacons was completed on time. At the same time, they did ocean minesweeping and measurement in the middle waterway within the Qiongzhou Strait, clearing a mile-wide safe navigation channel. Radio guidance marker stations were additionally built at both sides of the eastern mouth of this waterway in 1958, which increased safety and convenience for ship navigation.

To ensure the needs of warfare, navaid personnel would sometimes directly open routes and guide warships. During a battle to liberate Yijiangshan Island in January 1955, navaid crews added a number of navigation markers at marshalling sites and crossing locations for ships in the battle, as called for by battle plans. When the Army landed, the captain of the navigation unit, Ge Xinda [5514 2450 1129], led his troops in a landing on the island with the first echelon. Navigator Li Enxi [2621 1869 3556] joined Captain Ge in setting up temporary navigation markers on a sandbar, which guided later echelons in safe landings. On the eve of the sea battle east of Chongwu, the navigation markers unit finished their work on navaid safeguards at provisional marshalling sites, as needed by troops joining in the battle. After the battle was over, a torpedo boat got lost on its way back, unable to find its shore goal in the dark, so the navaid unit turned on searchlights to guide it, which brought the torpedo boat safely back to base.

From the late 1950s through the early 1960s, navigation guarantee departments undertook efforts at replenishing sets of equipment, adjusting densities, and filling vacancies regarding problems existing in the deployment of navigation markers in some ports and main lines. They also refitted and replaced, in batches and by regions, navigation markers built during the early 1950s. Altogether, they accomplished their mission of refitting navigation markers in more than 30 medium and small harbors.

In more than 20 harbor and island regions in the Bohai, Yellow Sea, East China Sea, and South China Sea, the ship crew navigation protection offices set up speed measurement markers and magnetic deviation correction markers for ships to determine their sailing speeds and to eliminate compass deviation. In addition, they also reopened the Laotieshan waterway in the Bohai Strait, the Wailuomen waterway in the Zhanjiang-Qiongzhou route, and the Haitan Strait waterway along the central Fujian coastline, as well as set up navigation markers there as safety measures for both domestic and foreign shipping.

A submerged reef is a great danger to the safe progress of ships. The navigation marker personnel set navigation marker placement at the top of their priorities in those areas where such incidents occurred most often. They set out navigation markers in such areas as 7-Star Reef and Rizhuang Reef at the mouth of the Minjiang; the Xia Laotaipo Reef in Ningbo Harbor; the Zhongsha Reef in Qingdao Harbor; Jinshanzui near Qinhuangdao; Wenweizhou at the mouth of the Zhujiang; the Sea Reef at the mouth of the Changjiang; and the Bitou Reef, Fengchaoyan, Sijiaoshi, Paoloujiao, and Yezhujiao along the southern coast navigation route. These actions greatly reduced navigation incidents.

Building lighthouses at Langhua Reef and North Reef in the Xisha Islands was a major undertaking. The sea areas near these locations must be sailed through by both military and commercial ships in the South China Sea region. Because the reefs themselves are submerged during high tide, they have historically been problem areas, and the area has been called "Ghost Gate Pass." According to statistics, during 1973-79, ten 10,000-ton and larger commercial vessels, such as China's Xinhui steamship, the GDR Ningbao, the Panamanian Mali, and the Japanese Daigoko Maru, had run aground on

those reefs. Not only did this cause serious economic loss, but it also harmed the reputation of China. Maritime personnel both within China and outside strongly demanded building a lighthouse at this spot. Beginning in 1974, the Navy tried several times to draw up plans for building the marker, and they even made surveys for that purpose, but because the environment was too harsh, the construction period too short, and the underwater construction too complex, it was not built. After the 3d Plenary Session of the 11th CPC Central Committee, with the rapid rise of the national economy, there was even more shipping to and from China. Under the guiding spirit of the State Council and the Central Committee Military Commission, the Navy did much research until it decided to ready the construction of a lighthouse. Prepatory efforts began in November 1979 toward actual exploratory drilling, design, and construction of the lighthouse itself. In March 1980, Fleet Vice Admiral Liu Moqing [0491 1075 0615] led the organization of more than 20 craft of various sorts and more than 100 construction personnel in a race against time and tides. Working through the night, after a struggle of 2 ½ months, they had excavated 170,000 square meters, finally completing the lighthouses on Langhua Reef and North Reef. Both lighthouses are buildings 20 meters high of steel-reinforced concrete, and can withstand a force-12 wind. They use advanced silicon solar energy as a power source, and the lamp base has an automatic lamp exchanging device. Since the completion of these two lighthouses, there has not been an accident involving ships passing through the area.

Since the 1970s, even though the focus of navigation efforts has shifted toward the development of radio navigation equipment, there have also been new developments in work on navigation markers. First, there was a further adjustment of the deployment of sea area navigation markers, and in the areas of the Yellow Sea and Bohai, lighthouses were built or renovated at such locations as Cheniushan, Qianliyan, Sushan Island, Haimaozi, Jingzitou, Dazhushan, Beihuangcheng Island, Kongtong Island, Mt. Yantai, Mt. Laobei, and Mt. Beichang, and in some places the range of lighthouse lamps was strengthened. In the East China Sea, travel conditions along the Taiwan Strait navigation line were improved, and some lighthouses and light beacons at turning points at both ends of the Strait had the ranges of their lamps increased. Navigation markers at important locations along the Taiwan Straits navigation channel were linked together, ensuring safe travel for ships navigating that waterway.

To maintain unity with the international ocean buoy system, floating markers were employed more in the role of navigation aids, and the Chinese government decided to adopt the ocean floating marker system (region A) as recommended by the International Navigation Marker Association. They unified the system with the particular conditions in China's sea areas and drew up the national standard entitled "Sea Area On-Water Navigation Aid Markers." Beginning in August 1985, a full-scale restructuring of the China sea areas on-water markers was carried out. The new navaids are noteworthy because of their simple type, clear functions, obvious specifications, and ease by which they are understood and remembered.

After the 1970s, lamps and light sources on the navaids along China's coast gradually came to use new materials and new technologies. In the aspect of equipment, they were fitted with new lamps, which were upgraded with strobes, bulb changes, and solar valves. Incandescent tungsten, neon, Bromine tungsten, xenon, and sodium-thallium-indium lamps were used to increase the range of the lamp markers. As far as light sources are concerned, the air dry cells and zinc-alkaline air cells were replaced by bulk acetylene gas, which both extended the life of the lamp marker illumination and also lessened the labor burden of the navaid personnel. Since the 1980s, there has also been development and application of silicon solar energy, wind power, and wave action electrical generation. Aside from this, the facilities have been fitted with radar responders, radar direction markers, and navaid radio remote sensing equipment.

Over the past 30 years, Navy navigation marker efforts have led to great accomplishments. By the end of 1985, the total number of coastal navigation markers throughout China had increased to more than 3,000, and the scope of distribution had expanded to cover all sea areas in China. Training navaid and radio guidance navigation professionals and technical personnel numbered more than 500. Navigation marker ships also expanded to include 34 ships of 90-ton, 1,200-ton, and 1,700-ton displacements.

Navigation marker personnel, especially the many soldiers who spend the year on isolated islands or dangerous shoals, battle adversity and bravely struggle on, and they are an important reason why the Chinese navigation mission can grow and strengthen. The poet Qiao Yan once wrote lovingly of the navigation marker troops:

Are those Heaven's lamps, lit by fairies, or are they stars fallen from the skies? For that light shines through rain and fog, illuminating the long, long ocean routes. No, they are not Heaven's lamps lit by fairies, but rather the radiant eyes of the ocean. That radiant, resplendent expression is the youthful fire from navaid soldiers.

This poem symbolizes the spirit carved out by navigation aid troops. From among those contributing themselves to the mission of navigation markers for their motherland come many moving stories. After joining the Army in 1945, one Chen Yi, a management worker at the Zhanjiang Naozhou Island lighthouse, fought with his unit from the foothills of Changbai [in Jilin Province] to Hainan Island, during which time he won four commendations for merit. In 1954 he initiated a request to go to Naozhou Island as an administrative person. From that time on, he lit the lamps on time each day, regardless of the time of year or the weather conditions, and he regularly maintained the equipment. He died of an illness in 1985, having been on the island for more than

30 years, always standing fast to this arduous but common position. People called him "the old man of the lighthouse." Navigation marker unit commander Liang Tao led his unit in year-long marker construction and repair efforts along a very long seaward defense line. In the winter of 1965, he joined other navigation marker troops in braving the danger of being swallowed by wind-swept waves as they worked continuously for more than 40 hours to repair a lighthouse at Wenweizhou that had been destroyed by fire decades previously, thus providing safety and assurance by their action to seafarers. In another situation, four navigation marker troops, Xu Yunzhan, Wang Xiaowu, Kong Dechao, and Li Jingao, were all Communist Youth League members who during their active duty remained on the lonely island of Luojiashan in charge of the lighthouse there. It suddenly began hailing one summer in 1978, and the four men were hammered black and blue as they shielded the light cover. The shining bright lightstand of the lighthouse poured into the night and through the hail, illuminating the vast dark sea and guiding military and fishing vessels safely to port, one after the other. This was certainly a case of using "youthful fire" to illuminate endless ocean routes.

As the scope of ship activities extends further out from coasts, sole reliance on coastal navigation markers cannot satisfy the demands of navigation positioning, whether regarding distance or precision. The Navy began in 1954 to set up radio direction marker stations along China's coastal routes, having placed these in 16 locations by 1965. During the day time, the navigation distance of this kind of equipment can be as far as 200 nm, and it is not affected by climatic conditions.

To further erect mid-range navigation systems for use at distances from 500 to 600 nm, in June 1965 the Navy and Ministries of Transportation and the Fourth Ministry of Machine-Building Industry set to work on construction of the first installation in the first period of this system. This installation was first determined to be placed on Chengshantou [in Shandong], the mouth of the Sheyang River, and on Gouqi Island. After hard work in all three locations, the tasks of civil engineering and construction and of equipment production and installation were finally finished in 1966, resulting in two pairs of towers. After experiments and testing, it was found that the area from the mouth of the Changjiang north to the Yellow River coastal region by Chengshantou was in the range of these towers and that the precision of position fixing was 0.5-1 nm, which complied with specifications for functional distances of similar systems internationally. The first installation was in use by 1 June 1969. In August of that year, the second installation of the first period was begun, which added 7 towers. For the most part, this is how China's coastal mid-range navigation network was created. Second period construction began from the Northeast to Hainan Island, with many towers and broad distribution. It was completely finished in 1975, officially opened for use on 1 October 1976.

During the more than 10-year construction process for the mid-range navigation system, many navigation personnel made important contributions. Senior Engineer Lu Xichan of the Office of Navigation of the East China Sea Fleet Headquarters committed himself to the task of navigation markers during the early period of the New China, all the time in charge of navaid and radio navigation in the East China Sea area. He worked on location, regardless of danger, and once when making an ocean crossing to inspect construction quality on Gouqi Island, he was killed when his ferry overturned and sank. He sacrificed his valuable life to the cause of navigation in China.

At the same time as it was building the mid-range radio navigation system, the Navy joined with Institute No 707 to develop high precision near-range navigation equipment. After design verification and dozens of improvements from testing, construction of a tower was finally completed in 1979, when it then went into use. This equipment can promptly provide a ship's precise position and has been welcomed by ship crews and the scientific experimental sector.

To satisfy the higher demands of modern ships for navigation safeguards, achievements of even more distant functional distances and greater coverages will require the building of a long-range navigation system. That kind of system would offer navigation positions within a range of 1,300 nm. China has been building towers since 1979 and has plans to construct 6 towers arranged in groups of three. The first 3 are to be built in the South China area, where capital construction has begun and use of which is planned to begin in 1988. Another 3 will then be built in eastern and northern China.

China's navigation instruments have developed greatly during the 36-year period. Before the founding of New China, all the various navigation instruments used on ships had to be imported. In 1953, Factory No 102, affiliated with the Navy Waterway Surveys Department, did test production of such navigation instruments as sextants and revolving logs with local factories. During the late 1950s, the Navy Headquarters Navigation Security Department (in November 1959, the name of the Waterway Surveys Department was changed to the Navigation Security Department) joined with local research organizations and industrial sectors to successfully create by emulation the Hanghai-I gyrocompass, the Lasi Model 7 echo depth sounder, the Naier Model 5 echo depth sounder, and the Hongqi Models I and II azimuth finder and ship clock. By the mid-1960s, Chinese navigation instruments entered the stage of domestic design and development, as for example with the four models of the magnetic compass series designed and manufactured by the Tianjin Navigation Instruments Plant. During the 1970s, Plants 441, 442, 612, and 765 developed and produced an electronically controlled compass, an electromagnetic logging instrument, a radio position finder, and an automatic steering instrument. In the 1980s, the Navy and Institute No 707 joined to develop an inertial

navigator and a platform compass. Institute No 717 developed such advanced instrumentation as a starlight navigator. Institute No 20 successfully developed an integrated navigation system, which centers on an inertial navigator and uses a computer to integrate celestial navigation, star navigation, and omega and inertial navigation systems. When in 1980 China conducted a launch test of a long-range booster rocket into the South Pacific, the kind of equipment just described fully met the tasks of measurement and position finding.

Chapter 22. Accomplishing the Major Tasking Assigned by the State

40050610A Beijing Dangdai Zhongguo Haijun (China Today: The People's Navy) in Chinese Oct 87 p 635

[Text] With the constant development of top-notch national defense science and technology and the steadily strengthening relations with friendly countries, the major tasks assigned by the state to the People's Navy have also continued to increase. After the 3d Plenary of the 11th CPC Central Committee, in 1980 the Navy made its first voyage to the South Pacific for flight tests of a long-range booster rocket, and in 1982 the Navy first carried out a test underwater launch of a booster rocket. In 1984 the Navy joined in a launch test of a communications satellite and took part in Antarctic explorations, and in late 1985, Navy ships were sent for the first time on a special mission to three countries in Southeast Asia.

Carrying out the missions just mentioned was a comprehensive full-scale verification of Navy fighting power, and those activities were great stimuli to efforts in all aspects of naval organization and command, technology and equipment, education and training, and logistics areas. Many of the accomplishments obtained therefrom show that modernization of the People's Navy has attained new levels.

Section 1. Taking Part in a Flight Test of a Long-Range Booster Rocket

40050610B Beijing Dangdai Zhongguo Haijun (China Today: The People's Navy) in Chinese Oct 87 pp 635-648

[Text] On 18 May 1980, China carried out its first successful launch test of a long-range booster rocket, sending it from native soil to an area centered at 7'0" south latitude and 171'33" east longitude, a sea area in a circle of radius 70 nm (700 km NW of Fiji).

The occasion of this flight test was a large-scale test that was a comprehensive verification of tactical and technical performance of weapons systems that was carried out after several successful flight tests done within China. It indicated that China's long-range booster rockets had achieved new levels and had important strategic significance for quickening the modernization of China's national defense.

The firing range of long-range rockets is generally more than 8,000 km, so because of limits in the area of national territory, all countries carry out the entire length of the flight test over open seas. In addition to building numerous measurement stations and large measurement systems on the ground, for flight tests over distances this long, there must be escort and lookout ships as well as auxiliary ships during the test procedures. There must also be a full complement of measurement ships in the sea area where the rocket nose splashes down. When the rocket does splash down, the data compartments holding the various data recorded during the flight test must be promptly recovered. On that occasion, the mission given the Navy by the state was to organize the escort mission, to protect the safety of ocean navigation, and to handle naval business and foreign affairs; to be responsible for alerting the test area; and to salvage the data compartments.

Carrying out this major a test mission in the South Pacific was monumental for the Navy. For one reason, the distance to be covered was long, and the sea area was new. The task force had to cross more than 50 degrees of longitude east and west encompassing four time zones, to pass through 40 degrees of latitude south and north, to traverse four wind belts and typhoon generation areas, and to go back and forth over a more than 8,000 nm sea course, never docking during the trip. This not only required various ships that could carry out the mission for the cross-ocean testing, including such auxiliary ships as those conducting ocean-based supply, life-saving, and towing, but also brought about a series of new problems in navigation, meteorological, communications, and logistical support. A second reason was that the formation was large, with many people involved. Eighteen ships were involved in the test, including escort, survey, and support ships, with a total tonnage of 174,000. The performance of these ships differed, the test personnel came from 8 major systems throughout China, and there were more than 400 cooperating units, which brought much complexity to the naval organization and command. A third reason was that the equipment was complex, with a high demand on technology. On one survey ship alone, there were 1,137 pieces (or sets) of precision instruments and equipment of different sorts, and if any piece were to break from being jostled, that could affect the success of the entire mission. For this reason, not only did the ships have to travel smoothly, but the supply and handling of external matters at sea during the long trip, especially the salvage of the data compartments, also had to be done without a slip. In short, as far as the Navy was concerned, carrying out this mission involved a number of "firsts:" it was the first time we organized and commanded a special composition this large to cross the equator into the South Pacific; it was the first time we used the first generation of large consolidated support ships for support on the Pacific; and it was the first time we used ship-based helicopters for salvage missions on the Pacific.

Prepatory efforts by the Navy before its participation in the flight testing of the long-range booster rocket began at the end of the 1960s. With the approval of Premier

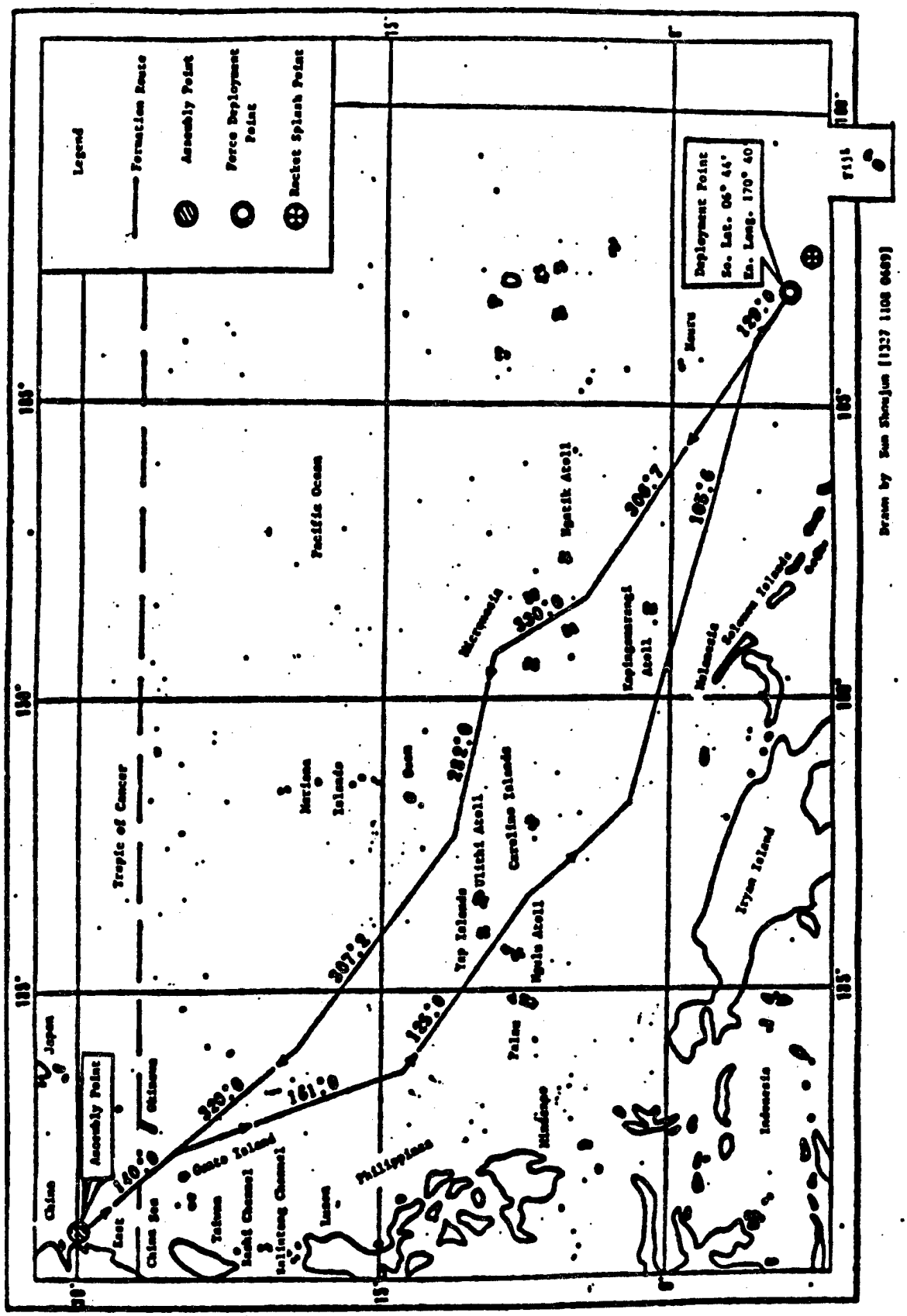

Figure 141 SKETCH MAP OF TASK FORMATION ROUTE AND LONG-RANGE BOOSTER ROCKET'S SPLASH AREA

Zhou Enlai, in 1969 the Navy requisitioned the "Changning" ocean-going cargo ship from the Ministry of Transportation and refitted it as the ocean-going intelligence ship, the "Xiangyanghong No 5." In accordance with the CPC Special Commission's instructions, in 1970 the State Council and the Central Committee Military Commission set up the "718" project leadership group as well as the "718" Office, specifically under the responsibility of such units as the Navy Logistics Department and the Sixth Ministry of Machine-Building Industry. They were to organize and facilitate the confirmation, design, test production, and construction efforts for five types of support ships (a primary survey ship, a consolidated support ship, a rescue and towing ship, a salvage and life-saving ship, and an ocean-going intelligence ship). Beginning in 1977, the Navy coordinated a refitting of four helicopters of the Third and Sixth Ministries of Machine Building Industry. In accordance with the demands of the long-range rocket test on assurances from ocean hydrometeorology, during the period from 30 March 1976 through 21 October 1978, the Navy arranged for a total of 4 excursions by the ocean-going intelligence ship Xiangyanghong No 5 to Pacific areas for surveys. During these 4 missions, at-sea operations went on a total of 265 days, and the ship traveled more than 70,000 nm. They obtained more than 100,000 ocean weather factors and various atmospheric materials and data, and 27,000 pieces of hydrometeorological factors and data. They measured ocean depths over more than 31,000 nm, gravity over 27,000 nm, and geomagnetism over 3,100 nm. All of the aforementioned corrected a number of incorrect records on ocean charts both from China and abroad. And the Navy carried out over-sea communications testing, deep-water underwater acoustic propagation testing, acoustic velocity testing, and at-sea food storage testing in order to select and determine accurate ocean environmental data for the rocket splash-down area. During the surveys, marine scientists and technicians also successfully obtained geologic samples and manganese nodules from the ocean floor at 4,784 meters, and for the first time gathered 150 samples of ocean plankton, which supplemented voids in China's ocean sedimentary mineralogy and ocean biology. The Navy and other pertinent units translated some 6 million characters from English and Japanese materials, collating and publishing 826 volumes of special charts of the test sea areas and 826,000 charts as well as various books and reference materials, all of which were promptly provided to units taking part in the test.

The direct preparations efforts of the Navy began in July 1977. All pertinent sectors and units taking part in the test undertook numerous tasks in five areas.

A. Arrangements and Preparations

The special at-sea composite groups joining in the tests were made up of 4 helicopters and 18 ships, including six destroyers (106, 107, 108, 131, 132, and 162), two consolidated supply ships (X615 and X950), two ocean salvage and life-saving ships (J302 and J506), two ocean intelligence ships (Xiangyanghong No 5 and Xiangyanghong No 10), four ocean towing ships (T154, T710, T830, and the Deyue steamship of the Ministry of Transportation), and two National Defense Science and Technology Commission primary measurement ships (Yuanwang 1 and Yuanwang 2), all formed into measurement flotilla and escort formations. These escort formations were then further divided into two ship groups.

The position of At-Sea Task Force Director and concurrently Political Commissar was assumed by the Navy's First Deputy Commander, Liu Daosheng [0491 6670 3932], while Navy Deputy Commander Yang Guoyu [2799 0948 1342] acted as Deputy Director. Tian Zhenhuan [3944 7201 3883], Commander of the Survey Unit attached to the National Defense Science and Technology Commission, and Zhang Dianzhong [1728 3013 1813], Political Commissar, were appointed as Deputy Director of the At-Sea Task Force and Deputy Commissar, respectively, and they were also concurrently made Director and Political Commissar of the Survey Flotilla. Deputy Commander of the East China Sea Fleet, Gao Xizeng [7559 1585 2582], and Commander of the South China Sea Fleet Yulin Base, Nie Kuiju [5119 1145 5112], were At-Sea Task Force Deputy Directors, positioned with the Survey Flotilla and the Escort Formation, respectively. Chief-of-Staff of the At-Sea Task Force was held by Navy Chief-of-Staff Zhang Xusan [1728 1645 0005], Director of the Political Department was assumed by Deputy Director of Political Department Yang Baoxiang [2799 1405 7013], the Director of the Logistics Department went to Navy Logistics Department Deputy Director Hou Xiangzhi [0186 0686 0037], and Deputy Chief-of-Staff positions went to Deputy Director of Navy Headquarters Operations Department Chen Dehong [7115 1795 7703] and State Oceanography Bureau, South China Sea Branch Chief, Zhang Ruixi [1728 3843 4406]. The task force headquarters group was small but energetic, with only 19 persons, including the director and office workers. Headquarters was set up on the Xiangyanghong No 5.

B. Ship Equipment Preparations

Aside from the Xiangyanghong No 5 and the tugboat Deyue of the Ministry of Transportation, although designs for the remaining 16 of the 18 ships taking part in the test had begun as early as 1970, the disturbance and damages of the Cultural Revolution kept much of the construction projects from completion as late as the end of 1978. Even the small number that had come out of the factories kept going back for replacements, refitting, and repairs. From 1979 until just before the trip in 1980, more than 1,100 projects were completed that involved rush repairs, modifications, replacements, and supplementary fittings. Just to come up with spare parts on these ships, rush contracts for goods were signed with 164 factories affiliated with 5 industrial sectors, and more than 180 people were sent to 22 provinces (and municipalities) to expedite goods and request aid. Deputy Commanders Liu Daosheng and Yang Guoyu

led such officers as Xue Zonghua, Zhao Jiadi, Yao Xiwen, and Li Haiting of the Navy Department of Armaments and Technology and Cheng Xin of the Sixth Ministry of Machine-Building Industry, on several occasions to jointly involve themselves in a particular factory to resolve major problems in production and technology and to quicken the pace of ship construction.

C. Logistics Support Preparations

Keeping in mind such characteristics of this voyage as the large fleet, the numerous personnel, the large quantities of goods and materials, the long duration, and the hot weather, logistics workers paid close attention to three things. First was the preparation and provision of goods and materials, which encompassed nearly 3,000 different items the likes of military necessities; petroleum, oils, and lubricants; medicines; armaments; and riggings, all weighing about 300,000 tons. To the greatest extent possible, the primary and secondary foodstuffs that had been gathered covered the whole range of products, were in sufficient quantity, were of good quality, were clean and hygienic, were labor and water conserving, were strongly packaged, and were convenient to store and use. For example, the rice did not have to be pre-rinsed before cooking, meat had been cut into pieces, and chicken, duck, and fish had all been de-feathered, scaled, gutted, wing-trimmed, washed, and quick-frozen. Not only was this more convenient for the units to cook, but it also conserved potable water. When it came to the provision of this large a quantity of goods and materials, such flexible methods were adopted as dockside supply and anchored supply. Further, the goods were separated by weight and priorities and were arranged rationally on the docks and in vehicles. Within prescribed times, prompt and secure provision was achieved, which ensured that the ships taking part in the test would leave on time. Second was assurance of medical services. A three-tiered medical protection system was arranged (single-ship, flotilla, and task force). Radio diagnosis would be done for serious unknown illness, for which was created the "Abbreviated Medical Language for On-Sea Communications." To achieve rapid, appropriate handling of illness and incidents of accidental injury that can happen at sea, seven contingency plans were drawn up: "The Handling of Injury from Ship-Board Accidents," "The Prevention of Infectious Disease," "Oceangoing Epidemic Prevention," "The Prevention of Underwater Accidents," "Helicopter Crew Rescue," "The Treatment of Injured on Destroyers," and "The Medical Handling of Corpses at Sea." All personnel involved in the testing were given physicals so that those sick with infectious diseases and easily recurring chronic diseases and with seasickness, would not set out to sea. Medical researchers developed anti-seasickness remedies, shark repellent, chemical ice bags, ship-board operating tables, and operating lamps. Thirdly, they resolved the problems of ship-to-ship provision of goods and materials and of destroyers creating their own potable water.

D. Trip Preparations

The CPC Central Committee requested that the test ships "proceed safely and return victoriously," so the Navy carefully drew up plans for the trip as well as various pertinent measures and programs. To select the optimum navigation route, one both secure and also economical, navigation personnel pored over nearly 100 ocean charts and other related materials as published by 4 countries, researching and comparing over and over again. First with a view toward ensuring the security of the route, they made a detailed selection of each segment of the voyage in accordance with the performance of the ships and equipment and with the geographic, hydrometeorologic, and weather conditions in the sea areas along the route, and they also avoided island reef areas, shoals, hidden reefs, and typhoons. Under the precondition of ensuring security, they were aware of the need to keep the route short and to conserve fuel and time. For example, the route back to China made use of the trade-wind zones on either side of the equator and of the northern equatorial currents. There were tail winds and favorable currents from the assembly point to the Gunto waterway base, which would add 0.6 knots per hour to the average ship speed. That is equivalent to shortening the trip by 43 hours, and because of this, 18 ships could conserve more than 400 tons of fuel.

E. Training Before the Voyage Started

To allow personnel to become familiar with handling the weapons and the newly installed instruments and equipment and to allow the departments, ships, and the entire task force to work closely together, under the leadership of the At-Sea Task Force headquarters, strict professional testing, chart exercises, and coordination training were arranged. In addition, 45 specialty training classes were held, more than 900 people took part in education and training, and ships took part in more than 100 off-shore exercises. During the period 1-11 April 1980, 17 large-scale coordinated exercises were carried out in the Qingdao and Lushun sea areas.

The mission of recovering the data compartment after the flight test of a long-range rocket was primarily accomplished by helicopters. The data recorded in the data compartment during the flight of the missile head was crucial to the success of the test, and for this reason, the safe recovery of the data compartment became the focus of training for the helicopter crews and relevant personnel. Because the helicopters responsible for the recovery task had never taken off or landed on ships before, the 172 crew members taking part in the test adopted a sequentially-stepped process training method: in the first step, they outlined circles on airfield runways the size of flight decks on ships for practice taking off and landing at fixed points. For the second step, they practiced fixed point take-offs and landings from 4-meter high concrete platforms, and all around the platforms were set up obstacles similar to structures surrounding flight decks. During the third step, they practiced fixed point take-offs and landings on small islands (where there were no topographic features for reference). Only finally did they practice fixed-point take-offs and landings under such conditions as when the ship was moored, when it was under power, and when it

was rocking. In addition, there was strict training and intensive preparations for such problems as how to discover the point of splash-down for the data compartment and how to drop divers from the helicopters into the sea for salvage efforts.

Test personnel finished their pre-voyage preparations by 25 April 1980. With the approval of the Central Committee, the task force headquarters issued mobilization orders on 26 April 1980 and additionally called for all officers and men to fill themselves with the spirit of revolutionary heroism, to be resolute in their mission, and to bring glory to the nation!

On the morning of 27 April, the National Defense Science and Technology Commission and the Navy at Wusongkou in Shanghai jointly sponsored a celebration to see off the task force on its voyage. Vice Premiers Wang Zhen and Geng Biao made a special trip from Beijing to Shanghai. Vice Premier Wang Zhen was representing the CPC Central Committee, the State Council, and the Central Committee Military Commission in expressing his farewell statement to those participating in the test. Deputy Chief-of-Staff Zhang Aiping recited a poem, "Imparting Heartfelt Emotions," written especially for the task force as it sets off: "...the fine day arrives, the speedy ships set sail, and the long voyage begins. Catching the wind, you push through the waves, trying to reach the edge of Heaven, to bring glory to the motherland." This raised passions to a high point. In the afternoon, Wang Zhen, Geng Biao, and Zhang Aiping, together with such Party, government, and military leaders as Shanghai Municipality Party committee first secretary Chen Guodong [7115 0948 2767], Navy Commander Ye Fei [0673 7378], National Defense S&T and Political Commission member Li Yaowen [2621 5069 2429], all accompanied Liu Daosheng by boat to the task force mooring point for an inspection and to convey their regards. On 28 April and 1 May, 18 ships set sail for the Pacific in three waves.

The Director Liu Daosheng and Deputy Director Yang Guoyu, at ages beyond 60, were both battle-seasoned Red Army Long March cadre and founders of the People's Navy. During the turmoil of the "Cultural Revolution," Yang Guoyu was a leading worker in booster rocket research at the Seventh Ministry of Machine-Building Industry, which made this test especially significant to him. During the days when he was being unjustly criticized, Premier Zhou Enlai once personally exhorted him: "You must persevere, not give up hope, and must draw everyone together in continuing development of the new weapons." With tears in his eyes, Yang Guoyu gave his assurances to the Premier. On yet another occasion, Commissioner Zhu De inspected one of the factories, and pointing to the booster rocket then being developed, he said: "This is a fine weapon! Make it available as soon as you can so that it might stand firm watch for your fatherland." He will always be remembered for that. When it came time to select a Director and Deputy Director for the task force, Liu Daosheng and Yang Guoyu did not excuse their own ages and health as they repeatedly made their request to the leadership. After receiving approval, the two happily took up their pens to express their joy in poems. One said, "It is not rare to find those over 60, but when that life has been loyal throughout, its determination cannot be deflected." The other said, "On the oceans for 3 generations, I've delighted in challenges, so devising strategies for continents will be all the more grand." Once they were at sea on the Pacific, they looked like they were back in battle yet again, making plans at the control tower where they resolutely handled all situations in a timely manner. On 3 May, the task force had just sailed past the first island chain when the weather fendui on the command ship discovered a thermal low pressure area NE of the task force; by 5 May it had begun to shift slowly. As they watched it develop, they saw that it could either gradually dissipate or continue to build into a typhoon. To guarantee the security of the precision instruments on-board, Liu Daosheng decisively ordered that the task force "move to the south and escape the typhoon!" On 7 May, that thermal low pressure area rapidly became a force-12 typhoon, but it had long been left behind by the task force.

Sailing on the ocean seems without boundaries, and although there is no transportation course that is wider, keeping ships on a steady course while under the influence of such factors as wind and current, and especially knowing your own precise position at any time, is no simple matter. Navigation personnel throughout the task force all used various navigation instrumentation to calculate countless data in the fulfillment of their mission.

To guarantee clear channels for the task force communications network, signal personnel operated their machines diligently day and night. During the more than 30 days, there were more than 5,400 contacts over the short-wave radio network, and the success rate for communications contact at the scheduled times reached 98.2 percent. No serious errors were encountered during the transmission and reception of large amounts of messages, as this traffic moved speedily along.

On the Pacific in May near the equator, temperatures can reach 34 degrees Celsius, and the deck temperatures were as high as 39.5 degrees. In the inner spaces of the smaller destroyers, the air was even more hot and suffocating, as cabin temperatures were generally in the range of 44-46 degrees. At the highest, they reached 58 degrees, and the engine crews used great amounts of energy as they worked in the engine rooms. At these times, the sea water conversion, cooling, and air conditioning machinery that had been installed on-board before setting off proved to be just the right thing. Three cleansing agents developed by the Institute of Naval Medicine allowing for the use of sea water to bathe, to wash clothes, and to wash eating utensils, as well as allowing for the "mineralized taste additive" needed for the potable water created by the drinking water equipment, all solved big problems.

Hygiene technicians in the task force were present on all ships, and in accordance with a predetermined plan, they adapted to the particular conditions at sea, maintaining strict control of everything from drinking water and food to personal hygiene. Each day they would go often into the cabins and combat stations to do their prevention work. The average daily rate of sickness in the task force was kept below 10 percent, and they attained such goals as no deaths from injury or illness, no infectious disease, no serious external injuries, no medical accidents, no large group of repeated illness, no dangerously or seriously ill patients who had to be sent back, and no food that proved to be poisonous. Ten emergency patients during the trip were treated successfully. Two emergency appendicitis patients has successful operations while in the Pacific. And during this time, more than 20 medical findings regarding the voyage provided much valuable research material.

While on the Pacific, the first ocean-going comprehensive supply ship designed and manufactured in China and the first self-developed lateral supply facility were successfully used 58 times for lateral provision by the destroyers. This provisioning included the transfer of 14,000 tons of fuel, more than 700,000 tons of primary and secondary foodstuffs, and 3 million tons of potable water. Experience was gained in such areas as at-sea supply command, communications contacts, operations facilitation, safety control, and the storage of goods and materials. The at-sea provisioning during navigation had important significance for the improvement of the vitality and combat capacity of ocean-going ships. Several countries have been quite interested in this experience. Nearly every time the X650 and X950 ships facilitated at-sea supply, there were foreign aircraft and ships around to observe and photograph. In the morning of 3 May, an American Navy reconnaissance plane circled over the ships for more than a half-hour. On 22 May, the New Zealand intelligence ship "Monuowei" signaled the message: "We are very interested in your 'drill' and would appreciate sailing along your starboard side to watch."

During this long-duration task force trip, the distance between each ship was greater than the eye could see, and there was never an opportunity for them all to be together. But the political, ideological efforts and cultural activities available in education and recreation on each ship proved quite lively. They listened to broadcasts; issued navigation bulletins; arranged the viewing of films; held literary and artistic meetings in the evenings, where they sang and recited poems; and they held competitions in singing and gymnastics, weight lifting, and tugs-of-war. To increase understanding of the Pacific, many ships helped crews read relevant materials on this subject and introduced them to the islands on both sides of their route and the politics, economies, and nationalities and customs of the countries they passed, as well as their relations with China. They also described to them some important battles in the Pacific, which attracted great interest from the ship's crews.

Since Xinhuashe had been allowed to announce that from 12 May through 10 June China would be testing the launch of a booster rocket, countries had been continuously sending aircraft and ships to track and observe the task force. During the period 12-22 May alone, while the task force was active in the test area, 41 foreign aircraft were observed, among which 17 were around on just one day, the 17th. How to handle this sort of diplomatic affair was an entirely new problem for the Navy commanders. Following the orders of the task force headquarters, the escort flotilla correctly carried out the principles and policies of China regarding foreign relations and flexibly applied the "Preliminary Plan for Handling Situations At Sea" that had been prepared beforehand; they completely fulfilled their mission of warning the area where the rocket was to splash down. For example, on 18 May when the rocket was about to be launched, the New Zealand Monuowei intelligence ship kept getting near the operations area. Considering the friendly relations between China and New Zealand and also the safety of the Monuowei, the commander of ship 108 decided to gain the understanding of the Monuowei in a friendly manner. The Chinese ship told them: "China and New Zealand have friendly relations between our peoples, so in consideration of your safety, please do not enter our operations area." The Monuowei responded with its appreciation and simultaneously sent over the ship's second mate via two rubber rafts, carrying a ship's banner, a seaman's cap, and a user manual for the ship that detailed its organization, gear, and performance, as well as an invitation to the captain of ship 108 to be a guest on that ship. At that time, the rocket splashdown time was less than an hour away, so the commander of ship 108 decided to invite the captain of the Monuowei to be a guest on his ship. The second mate of the Monuowei, representing the captain, was warmly welcomed when he boarded ship 108. The Chinese repeatedly drank toasts to the friendship of the two nations' people and presented such gifts as a shell-carving picture of Qingdao and Qingdao beer. On the afternoon of 19 May, New Zealand Premier Maerdeng [phonetic] mentioned this event while meeting with representatives of the press when he remarked that "we could say that relations between the two ships are quite close." Ship No. 106 had a similar encounter with the Australian training ship GT203. When the exercise had concluded and the task force was preparing for the return trip, these ships from China and Australia exchanged the message: "We wish you a pleasant trip." The captain of the Australian boat sent over an executive officer to present the captain of ship 106 with beer and a personal letter, in which he said, "I am honored to have made your acquaintance, and yours is a naval vessel that is both highly efficient and also very well run. Here is wishing you the very best!" Ship 106 also returned the favor of gifts. Picking up on this practice, the escort flotilla relayed sentiments of friendship to friendly countries, and they also ensured the safety of the operations area, from which was gained the experience of exchanges with foreign navies on the open sea.

18 May will be a hard day to forget, as ship after escort ship deployed in formation in the test area, as one 5-star red flag after the other unfurled in the breeze, and as helicopter after helicopter circled continuously around the area. Each department on the ships was busily at work, radar antenna of all sorts were rotating endlessly, and excited reports came one after the other: "Remote sensing has come up with a signal!" "Radar has found an object!" "Target tracking is on schedule!" The first long-range booster rocket developed by China crossed the southern and northern hemispheres and fell from the sky toward its predetermined splash-down point. The data compartment hit the ocean surface at 10:30, and as the dye of the compartment turned the surrounding ocean surface a deep emerald green, the surrounding destroyers and the working speed boats immediately rushed forward to guard it closely. After the aerial survey helicopter No 179, piloted by Wang Yun [3769 1926], had discovered the target from an altitude of 2,000 meters, it quickly photographed the rocket head drop site and, at the same time, ascertained the location of the data compartment and guided helicopter No 172, piloted by Guo Wencai [6753 2429 2088], toward that location. A thick cumulus cloud lay directly across his bow, but penetration would have been dangerous and skirting it would have cost precious time. With courage and skill, Guo Wencai decisively dropped from 1,000 to 500 meters and flew off below the cloud in the rain to hover steadily over the site of the data compartment. It only took 5 minutes 20 seconds from the time diver Liu Zhiyou [0491 1807 0645] was dropped into the water until the data compartment had been recovered, and it had been only 20 minutes from discovery of the target until that recovery. As the recovery effort was underway, two foreign aircraft circled low overhead and also dropped two sonar buoys, picking up some of the sea water that had been dyed. Deputy Commander Yang Guoyu, who had long been looking forward to this victory, joyously wrote a poem in celebration: "One can see to the horizon from the air above the vast ocean, as they struggled to see the magic rocket, dancing on blossoming waves; where the precious parachute opened, the golden casket dropped, where the helicopters pulled in their nets."

On the morning of 19 May, the Central People's Broadcasting Station announced the news from Xinhuashe regarding the success of the flight test of the long-range booster rocket. On 21 May, the CPC Central Committee, the State Council, and the Central Committee Military Commission issued a congratulatory telegram to the entire body of persons involved in the development and testing efforts. Countries throughout the world issued statements about the activity, which they considered a major event and an idication that China had made major advances in perfecting control and guidance and in lengthening the distance of launch. The militaries of the United States, England, France, and West Germany sent congratulations one after the other, while such Third World countries as Thailand, Egypt, Peru, and Mexico expressed their excitement and inspiration. The United States ambassador in China met with headquarters leaders of the Chinese Navy force stationed in Shanghai, and presenting them with a photograph taken by US aircraft in the Pacific of the Chinese Navy at-sea supply operation, said: "Now that you have solved the problem of at-sea supply, the crews of the Chinese Navy can visit our country."

At the rocket splash-down site, ocean survey ships held a sea burial ceremony for Yu Xiaohong [0060 4562 5725], Director of the Coastal Defense Guided Missile Institute. Yu Xiaohong joined the 8th Route Army in 1937, and since entering the Navy, he had long been involved in development efforts for naval ships. Although tormented by persecution from the Gang of Four and from illness, he endured that humiliation in order to carry on his mission, at which he worked hard. Near death in 1973, he requested that when Chinese-developed ocean ships had finally sailed into the Pacific, his remains be deposited at the rocket splash-down site. And now the South Pacific opened wide its heart to take in the heroic spirit who had been so intent upon the sea and so concerned about building China's Navy.

On 24 May, the task force crossed the equator on the way back to the northern hemisphere, returning safely to the port of Shanghai on 1 and 2 June. They had been at sea for 35 days, sailing time to and from comprising 23 of those days, and they had covered a total of 8,733 nautical miles.

On the morning of 3 June, a grand welcoming celebration was held at the outside moorage of Shanghai's Wusongkou. On 4 June, the National Defense S&T Commission and the Navy Auditorium of the Navy in Wusongkou jointly sponsored another welcoming celebration. Vice Premier Ye Jianying of the Central Committee Political Commission came personally to Wusongkou to call on everyone. In a good mood, he said to them: "The success of this test has greatly strengthened our capacity for peace,...and it has enriched the Chinese people, as well as other peoples of the world. I hope that you, comrades, will continue to do your utmost."

On 10 June, a great celebration was held in the Great Hall of the People in Beijing. General Secretary Hu Yaobang represented the CPC Central Committee, the State Council, and the Central Committee Military Commission in issuing warm congratulations. He said that "this successful launch of a long-range booster rocket indicates that the Chinese people have taken an important step forward on the road to gaining access to modern precision science and technology, and it shows that China's real national defense power has been newly improved and strengthened....We determined to implement the four modernizations and also determined to protect them; We can build up our glorious motherland as well as protect it!"

Section 2. Submarine Underwater Booster Rocket Launch Test

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[Text] On 12 October 1982, China carried out its first successful flight test of a booster rocket launched from a

submerged submarine. It was launched from a northern sea area toward a circular sea area of 35 nm radius centered at 28 degrees 13 minutes northern latitude and 123 degrees 53 minutes eastern longitude (about 325 km east of Wenzhou). The Chinese-developed first generation solid-fuel booster rocket capable of underwater-to-surface launch passed through a flight composed of in-water, controlled, and free-flight stages to accurately fall into the predetermined sea area. Measurement equipment in the first and final zones promptly captured and tracked the entire process of the rocket flight, gathering a great deal of data. This was yet another major new achievement in the most advanced branches of science and technology, following upon China's successful tests of an atomic bomb, a hydrogen bomb, and a long-range booster rocket, as well as the launch of satellites. It showed a new development for the modernization of the People's Navy, that the real power in national defense had been strengthened, and that with one jump, China had leaped into being the fifth nation in the world to have the capability of launching a strategic missile from underwater.

Using submarines as launch platforms, that is, launching a booster rocket from underwater, is an important component of the "tripartite entity" (intercontinental guided missiles, strategic bombers, missiles launched from submarines) of strategic nuclear weapons systems in the modern world. The obvious benefits of launching a booster rocket from a submerged submarine are a broad range of mobility, low visibility, high strike capacity, and powerful survivibility. It differs from launches at land-based launch silos that can only be at fixed sites, and it can be used to attack any enemy land-based strategic target from locations difficult for that enemy to discover. To launch a booster rocket from a submarine moving under water is certainly not simply a case of moving a land-based missile over to a submarine, but rather it is necessary, in light of the limited space and maneuverability characteristics of a submarine, to resolve a series of new problems such as the rocket propulsion system, rocket miniaturization, and underwater launch technologies, for which must be undertaken a series of individual tests, large-scale comprehensive tests, and flight tests.

China's first generation research on submarine underwater rocket launches began in 1967. It was made one of the important missions in sophisticated technology after the 3d Plenum of the 11th CPC Central Committee, which quickened the pace of research. Under the direct concern of the CPC Central Committee, the State Council, and the Central Committee Military Commission, units from the National Defense Science, Technology, and Industry Commission, the Ministries of the Navy and Astronautics Industry, the Ship Industrial Corporation, the Ministry of Nuclear Industry, the Ministry of Electronics Industry, and the Chinese Academy of Sciences all worked closely together. In all, more than 2,000 units from the provinces, municipalities, autonomous regions, and the military system participated in the development, production, and testing. During the development process, scientists and technicians made full use of advanced foreign technology and were also bold in innovation and in going their own way. The test procedures eliminated the stage of full-dimension model missile pool tests, instead taking it directly from land to the ship. After launch, the model missile used during the test process was recovered and used again. These were achievements made by giving full rein to the intelligence and skill of the many engineers and technicians, and of Navy personnel taking part.

The mission to test an underwater launch of a booster rocket saw the Navy in charge of organization and facilitation, toward which the Navy did a great deal of preparatory work. The first thing was to provide a submarine for use in the launch. Beginning in 1968, under the leadership of the Navy Munitions Department, a "931" office was set up, exclusively to arrange and coordinate the refitting of the launch submarine. Various tests on the missile weapons system to be placed on the submarine were first done on land, and once up to specifications, it was then taken on board for individual debugging. The system was debugged in conjunction with other elements, including static and dynamic testing. Tests were conducted after the refitting, which not only checked out the reasonableness and coordination of the launch facilities, the launch power systems, and the complete weapons system, as well as the quality of the refitting, but at the same time served to train the first group of test personnel and operators who would launch the booster rocket from the submerged submarine.

Before the flight test, the Navy also joined relevant research units in conducting several land, water surface, and underwater launch tests with a full dimensional model. The goal of this kind of test was to verify the accuracy of the launch power system and the launch facility design, as well as to resolve technical problems with the submerged submarine launch.

On the basis of efforts just described, the necessary conditions were created for the test of a submerged submarine launch of a booster rocket. In March 1982, all preparatory work had been done prior to the underwater launch test.

To strengthen the unified leadership of the launch test, under the guidance of the National Defense Science, Technology, and Industry Commission and the Navy, First Zone (launch zone) and Final Zone (splash-down zone) Headquarters and a provisional party committee were established. The director of the First Zone Headquarters was Navy Test Base Commander Tian Zuocheng [3944 0155 2052]; the provisional party secretary was Navy Test Base Political Commissar Deng Yifei [6772 2496 7236]; and the deputy directors were Navy Lushun Base Deputy Commander Ma Lixin [7456 4539 2450], Navy Test Base Deputy Commander Zhou Cheng [0719 6134], Ministry of Astronautics Industry Chief Designer for Underwater-to-Surface Booster

Rockets Huang Weilu [7806 4885 4389], China Ship Industrial Corporation Chief Designer for Nuclear-Powered Submarines Huang Xuhua [7806 2485 5478], Navy Test Base Second Test Zone Commander Yang Honggui [2799 3163 6311], and North China Sea Fleet Submarine Flotilla Captain Li Wenfa [2621 2429 4099]. First Zone Headquarters were established in the Navy Test Base's Second Test Zone. Final Zone Headquarters were set up on the Yuanwang 1. Commander of the Final Zone was Tian Zhenhuan [3944 7201 3883] of the Survey Unit affiliated with the National Defense S&T and Industry Commission; the political commissar of the same survey unit, Zhang Dianzhong [1728 3013 1813], also became political commissar of the new unit; and the deputy directors were East China Sea Fleet Deputy Chief-of-Staff Jing Demin [2529 1795 2404], Zhoushan Base Deputy Commander Liu Honglu [0491 3163 7120], and Deputy Chief-of-Staff Meng Xiancheng [1322 2009 6134] of the Survey Unit affiliated with the National Defense S&T and Industry Commission. Under them were the Survey Group, the Convoy Screening Group, the Support Covering Group, and the Aerial Support Group.

Preparatory efforts for the Navy developed according to the four primary fronts of technical position; launch submarine; survey and control communications system; and surveillance, defense, and rescue strength.

When the booster rocket entered the target range after being jostled in shipment, it had to undergo various checks and comprehensive testing before installation on the ship. The task of the technical position was to take care of technology issues, allowing each part of the rocket to be placed in an excellent state. This work was largely the responsibility of a technology office in the Navy Test Base's Second Test Zone. Under the leadership of the office party committee and the office head, Zhou Ganlin [0719 3227 2651], the technicians satisfactorily completed 701 component tests, 39 comprehensive verifications, and 15 at-sea integrated exercises. There were no major operational errors, as 74 problems remaining after work at the factory were fixed. Safety requirements, schedule adherence, and high quality were achieved.

The task of the launch submarine was in accordance with working procedures of the launch position, and it conducted pre-launch checks on the rocket and launch preparation work. Within the allotted time, they punctually and accurately entered the launch sea area and also maintained communications contact with headquarters. They accurately operated the vessel and satisfied the launch conditions, and while underway below water, they promptly launched the rocket safely and reliably with one command. The technology involved with the job of launching from the submarine is rather complex, and the technical requirements for operating a vessel underwater are quite high. There were more than 140 instruments of all sorts newly installed by the rocket launch department alone, and more than 1,000 control items were added. Each action had to be completely accurate, for even the slightest mistake could cause unimaginable consequences. The submarine tasked with the underwater launching, under the leadership of Ship's Captain Shi Zongli [4258 1350 4409] and Political Commissar Qin Zhiqi [4440 3112 7871], displayed a revolutionary spirit that did not fear difficulties nor danger, as it carried out arduous training. From 15 January through 7 September, the ship went to sea 37 times, all together completing 5 comprehensive trips carrying the rocket. They also completed 10 at-sea exercises involving opening the cover of the launch tube, 5 collective exercises involving coordination and matching, and 6 at-sea launch drills, as well as underwater escape training. In all, they were at sea for 256 hours, traveling 1,547 nm. In order to guarantee the success of the launch, during the period 1968-1982, there were 20 cadre and soldiers among the crew who did not return home, even when there was illness in the family or when they themselves were ill; 15 lost out on chances to go on with schooling, or even for timely promotion, because they could not leave their assigned work stations; 131 postponed marriage and leave; and 43 delayed their retirement. The self-sacrificing revolutionary spirit of this strenuous training lifestyle has been captured in art, in the film *The Blue Whale Was Anxious To Get Going.*

The primary task of the survey and control communications system was to gather various data through such means as flash ranging, radar altimetry, remote sensing, and computers, as well as to process that data. If it was discovered that the rocket was not flying normally and that it threatened the safety of important objects in the navigation zone, it would be necessary to reliably issue commands causing it to self-destruct in mid-air. Two measurement regiments, two technology offices, and one communications unit in the second test zone of the Navy Test Base assigned to this mission first installed, debugged, and conducted operational training on the various measurement and communications equipment. All together, they completed 40 comprehensive training exercises and 16 dynamic check-out flights, and 131 tests of submarine communications interference, which brought all equipment to a state of readiness. Li Fucai [2621 4395 2088], head of Office 230, led everyone in more than 4 years of effort, during which time they wrote more than 36,000 lines of computer programs, comprising a total of 28 projects, and selected nearly 1,000 operational formulae. With this set of programs and plans they had designed, when the rocket was launched, people would be able to see the position, attitude, and speed of the rocket flight at different times on a large display board. This, in effect, amounted to "operations within a hall, remote sensing of the vast beyond." To commend Li's contributions, higher authorities presented him with a 2nd degree citation and a general reward.

The occasion of this test required alerting three areas: the first region, the first-level landing area, and the final area, which were under the jurisdiction of the two fleets. It just happened that during the test period, it was peak

shrimping season in the first and first-level landing areas, and there were many fishing boats, which complicated matters. Under uniform deployment by the Navy, the North China Sea Fleet utilized a total of 58 ships of different sorts (including 11 ships of the reserves), and the East China Sea Fleet employed 15 ships and 19 aircraft. The prevention and rescue unit in the First Zone sent out rescue ships on 17 occasions to conduct prevention and rescue exercises and to conduct three aid exercises with submarine and diving units for a total of 47 days. Divers made 552 dives in 608 hours of difficult diving exercises. The survey and escort carried out nearly a month of coastal exercises, and helicopters flew on 20 days, doing 1,081 ship-board landings. During the test period, 29 Navy ships and 9 fishing boats persuaded 359 fishing boats, 13 commercial vessels, and 2 ships of other classes, from both China and other countries, to leave the three zones, which guaranteed the safety of the test.

Weather assurances were crucial to the test. The General Staff Weather Bureau sent people to the First Zone to directly offer guidance. Centering on the Navy Test Base and the Second Test Zone, they formed a weather forecasting network, where a dozen or more local, Navy, and Air Force weather stations and sites were tightly integrated to fulfill this mission satisfactorily.

To best accomplish all the preparatory work needed for this first underwater launch of a booster rocket, unit leaders from the National Defense S&T and Industry Commission, the Navy, the Ministry of Astronautics Industry, and the Navy Department of Munitions Technology stayed long periods with their units, where they gained first-hand knowledge and paid close attention to ideology, working spirit, progress-making, and quality. The General Bureau of Civilian Aviation provided reserve navigation equipment to the launch submarine. The Ministry of Electronics Industry sent technical personnel to work with Navy personnel on quality verifications for more than 400 pieces or sets of electronic equipment, which brought each piece of electronic equipment to a state of technical excellence. The local railway offices rushed the construction of special lines, ensuring that the rocket would be delivered on time.

By the end of August 1982, the preparatory efforts had entered a key stage. Deputy Secretary of the Central Committee Military Commission Zhang Aiping, commissioned by the State Council and the Military Commission, personally visited the First Zone to hear situation reports. He traveled widely to various tactical positions in the launch zone, where he reviewed conditions for survey and control systems check-out flights, viewed the technical position and the launch submarine, and under stormy conditions, watched the entire process of the submarine submerged rocket launch exercise. Finally, Zhang Aiping quite excitedly took up his pen to write the following words on behalf of the Navy Second Test Zone: "The test has had to overcome a thousand crucial steps, and the operations exercises have been the work of experts." On the launch submarine, he wrote: "Riding a whale over the seas, the waves kicked up will reach to Heaven." These lines were both inspirational to everyone and also a summation of the test preparation efforts.

During 21-22 September 1982, a joint meeting was held by the National Defense S&T and Industry Commission and the Navy in Beijing to review the test preparation work and to discuss work plans for the implementation stage. The group requested that all systems complete preparations by 30 September. Deputy General Secretary Zhang Aiping requested that everyone immediately enter a "combat-ready state" and that work proceed in a cool, steady, and unhurried way. He then encouraged those present with the words of Chairman Deng Xiaoping, "Any success is yours, but failure is mine."

From 09:30 until 17:00 on 23 September, the first combined exercise was held involving all participating forces in all zones, and the first time was successful. Work from all systems was normal as well as safe and without incident.

On 1 October, the New China News Agency was authorized to issue the announcement that China would launch a booster rocket into the open seas and that testing had entered the implementation stage.

At 15:14:01 on 7 October, the first booster rocket was launched according to plan. The rocket was launched, exited the water, and ignited normally, but after ignition it suddenly lost control and began to tumble, self-destructing in mid-air. Zhang Aiping promptly directed: "tell our comrades in the First Zone, and especially the technicians, to take an appropriate rest. We don't want to get too tired and let one tendency conceal another, for all problems must be discovered." On 9 October, Central Committee Military Commission Deputy Chairmen Nie Rongzhen and Xu Xiangqian directed: "in any test there is the possibility of either success or failure. This is just like with the victory of the women's volleyball team: in victory, don't be arrogant; in loss, don't be dispirited. Let us not be disappointed, even less be angry, for the most important thing is to learn from our experience to better carry out our technological experiment. We will search out the problem and will fight again for victory, when we will certainly be successful." The personal concern and hope of the Military Commission members allowed the test participants to release the burden of their disappointment and reinvigorated their thinking and strengthened their confidence.

First Zone Headquarters studied the reasons for the failure of the first rocket, taking appropriate measures for the second. At 15:00:01 on 12 October, the submerged submarine launched the second rocket. The rocket launched, exited the water, ignited, flew, separated, and splashed down; it was tracked and measured normally. The test was a complete success. At the time of this unforgettable victory, everyone was joyous and greatly moved. At headquarters, everyone started offering congratulations and shaking the hand of Chief

Rocket Design Huang Weilu all at once. This venerable scientist, who had made such a special contribution to the astronautic mission, was crying uncontrollably, saying as he did so: "the glory goes to China, to the Party leadership, and to the joint efforts of so many comrades over the years." That afternoon, the launch submarine returned victoriously to port. Navy Deputy Commander Yang Guoyu excitedly ignited a piece of solid fuel he had been treasuring for a long time, and suddenly, there were sparks everywhere, just like at a fireworks celebration.

On 16 October, the CPC Central Committee, the State Council, and the Central Committee Military Commission joined to issue a congratulatory telegram to all those who had participated in the rocket development and launch test. Also on that day, China released news of the conclusion of its test, and navigation in the test zones was restored to normal.

The success of China's first test launching of a booster rocket from a submerged submarine created quite a stir throughout the world, with all countries offering comment. A commentary in the American JOURNAL OF THE NAVAL SOCIETY said, "With China's announcement that it has successfully test-launched a guided missile from a submarine, the situation has become quite clear: the PRC has become the 5th nuclear nation in the world to have a sea-based nuclear threat...That it has that threat complicates not only the strategic force estimates of the Soviet Union, but also those of the United States."

On 22 and 25 October, the National Defense S&T and Industry Commission and the Navy in the First and Final Zones each held congratulatory celebrations, and the Final Zone even held a grand naval troop review. Those speaking included Zhang Aiping, as well as Chairman of the National Defense S&T and Industry Commission Chen Bin [7115 1755], Political Commissar Liu Youguang [0491 2589 0342], Navy Commander Liu Huaqing, and Political Commissar Li Yaowen [2621 5069 2429]. In a speech at the Final Zone, Zhang Aiping concluded excitedly, saying: "In honor of this victory, I present the poem *We Look at Each Other with Joy*: 'Let us show off our heroes of the sea, who fought the savage waves. Their magic swords came out flying, whose thunder broke up the clouds. Heaven displayed its radiance, sweeping the vast sky, having won our confidence in victory. Shouts of joy came from all over, exquisitely proud for our time.'

Appendix 1. A Chronology of Events for the Chinese People's Liberation Navy (1949-1985)

40050612A Beijing Dangdai Zhongguo Haijun (*China Today: The People's Navy*) in Chinese Oct 87 pp 681-719

1949

[Text] 8 January The resolution regarding "The Mission of the Party in 1949 under the Current Situation," passed by a meeting of the Politburo of the CPC Central Committee, proposes that "during 1949 and 1950, we should seek to form a usable air force, as well as a navy that can protect the coastline and the coastal rivers."

12 February The crew of the Guomindang (KMT) Navy ship "Huang'an" mutinies in Qingdao, which sets a precedent for mutinies in other KMT naval vessels. After assignment to PLN ranks, its name is changed to the "Shenyang."

25 February The crew of the KMT cruiser "Chongqing" mutinies at Shanghai's Wusongkou. After that uprising, the ship is sailed past Yantai to support Huludao. Later, it is severely bombed by KMT aircraft and scuttled near the Huludao docks.

24 March Chinese People's Revolutionary Military Commission chairman Mao Zedong and Chinese People's Liberation Army commander-in-chief Zhu De reply by telegram to the troops who mutinied on the cruiser Chongqing, warmly congratulating them on their heroic mutinous action. Their telegram says, "Your rebellion shows that the KMT reactionaries and their American imperialist bosses are on their last legs. They can damage such a ship as the Chongqing by bombing, but they cannot prevent even more vessels from joining it, and even more vessels, aircraft, and army units will rebel to join the People's Liberation Army. The Chinese people are certain to establish their own powerful national defense, and in addition to an army, we must also build our own air force and navy. You, then, are among the vanguard that will build the Chinese People's Navy."

23 April The leadership organization of the East China Military Region is founded at Baimamiao Township of Taizhou City in Jiangsu Province, with Zhang Aiping as commander and concurrently political commissar. Its base is composed of the 3d Field Army Instructional Division Headquarters, as well as such units as the 3d Regiment, the 3d Field Army Headquarters Reconnaissance Battalion, and the Subei Military District Coast Defense Flotilla. That same year, Zhao Qimin [6392 0796 3046] is appointed deputy political commissar for the East China Military Region Navy, Yuan Yelie [5913 0048 3525] is appointed deputy commander and concurrently chief-of-staff, and Kang Zhiqiang [1660 1807 1730] is appointed political department director. On 24 October 1955, the name of the East China Military Region Navy is changed to Navy East China Sea Fleet.

23 April KMT Second Coastal Defense Fleet commander Lin Zun [2651 6690] leads a total of 25 ships and 1,271 men in a mutiny on Nanjing's Badoushan River. Ships and units involved include: the military vessels—Hui'an, Ji'an, Jiangxi, Taiyuan, Chutong, Yongsui, Andong, Meisheng, and Lianguang; as well as all departments from the First Mobile Flotilla and the Fifth Patrol Defense Ship Force.

18 May Chairman Mao Zedong and Commander-in-Chief Zhu De wire recognition to General Lin Zun and the whole body of mutineers he had led, praising their behavior as "the heroic undertaking on the river near Nanjing." They encourage the entire group of

mutineers "to unite as one and learn from the military ideology and working system of the People's Liberation Army, and to continue to learn naval technology so that you might struggle on behalf of the glorious future of the Chinese People's Navy!"

May Using the personnel of the former Chongqing and Lingfu vessels, the Andong Naval School is founded.

15 August The East China Military Region Naval School is founded in Nanjing. As a start, it uses some personnel from organizations and units affiliated with the 35th and 30th Armies, and from the East China Military Region Naval Training Regiment, as well as some of the Chongqing mutineers. On 29 December 1950, this school is expanded into the Navy Federated School.

28 August Mao Zedong, Zhu De, and Zhou Enlai meet in Beijing with Zhang Aiping, East China Military Region Navy commander and concurrently political commissar, and with former high-ranking officers of the KMT Navy: Li Zun, Zeng Guosheng [2582 0948 8508], Jin Sheng [6855 5116], and Xu Shibu [1776 2514 6534]. Mao Zedong encourages Lin Zun and the others to learn from the excellent political work and fighting spirit of the PLA and to join in the struggle to build a strong PLN.

August to early September Vice Principal Zhang Xuesi [1728 1331 1835] of the Andong Naval School goes to the Soviet Union to discuss an invitation with the Soviets regarding the sending of advisers to help China prepare a Naval Academy, as well to discuss the question of technical aid in salvaging the cruiser Chongqing. Agreement was reached on these questions.

19 September The crew of the KMT First Fleet flagship, the Changzhi, mutinies at sea off Dajishan outside of Shanghai's Wusongkou. After assignment to the People's Navy, the name of the vessel is changed to "Nanchang."

23 September East China Military Region commander and concurrently political commissar Zhang Aiping goes to the Soviet Union for discussions about naval construction.

1 October The Andong Naval School and the East China Military Region Navy arrange two formations to represent the Navy in the large military review of the Army, Navy, and Air Force during the ceremonies creating the People's Republic of China.

10 October Chairman Mao Zedong and Commander-in-Chief Zhu De wire the entire crew from the mutinied Changzhi, congratulating them for their heroic actions and encouraging them to study diligently. They are also urged to actively participate in the majestic tasks of building the PLN and of accomplishing the liberation of the entire area of China.

25 October 84 Soviet experts arrive in Shenyang to help China found the Naval Academy.

Early November A Soviet delegation of 6 comes to China to assist in naval construction.

22 November The Chinese People's Liberation Naval Academy is founded in Dalian. It is based upon the Andong Naval School.

15 December The River Defense Headquarters of the Guangdong Military Region is established, at which time Guangdong Military Region deputy commander Hong Xuezhi [3163 1331 2535] is concurrently made commander. It is based upon the Naval Office and Secretariat of the Guangzhou Military Control Commission as well as upon the 3d Section, 2nd Division, Guangdong-Guangxi Flotilla and the Supply Office.

August through December Chairman Mao Zedong, Commander-in-Chief Zhu De, Vice Chairman Liu Shaoqi, and Premier Zhou Enlai one after the other write encouraging words to the East China Military Region Navy. Chairman Mao writes: "We must build a navy, and this navy must be able to protect our coastline and to effectively guard against a possible invasion by the imperialists." Commander-in-Chief Zhu writes: "Learn without prejudice, work hard, and build the people's navy." Vice Chairman Liu writes: "Build the people's navy to solidify our coastal defenses." Premier Zhou writes: "Struggle to build the Chinese People's Navy."

1950

12 January Chairman Mao Zedong signs and issues the order for the PRC Central People's Government People's Revolutionary Military Commission, appointing Xiao Jinguang [5618 0513 0342] as PLA commander.

25 January The naval shipyard at Jiangnan and the ship repair yard at Pudong are bombed unrestrainedly by KMT aircraft, and 26 vessels moored there, belonging to the nearby East China Military Region Navy, are damaged or destroyed. They include the Changzhou, the Wanshouhua, and the 809.

14 April The Navy Leading Body is established in Beijing. Xiao Jinguang is commander, and Liu Daosheng [0491 6670 3932] becomes deputy political commissar and concurrently director of the Political Department. It is based upon the 12th Army Group organization and part of the 4th Field Ordnance Logistics Branch No 2. Also this year, the Central Committee Military Commission appointed Wang Hongkun [3769 1347 0981] deputy commander of the Navy and Luo Shunchu [5012 5293 0443] as Navy chief-of-staff. The Navy Logistics Department is founded on 20 May, with Zhang Hancheng [1728 3352 0015] as director.

25 May The Guangdong Military Region River Defense Force cooperates with the Army in attacking the KMT Navy entrenched on the Wanshan Islands. After an heroic battle of 71 days, they were able to liberate all islands in that group. Chairman Mao Zedong wired

praise and encouragement, saying: "This was the first heroic stand by the People's Navy, and we should learn from and commend it."

19 June through end of October The East China Military Region Minesweeping Fleet undertakes minesweeping operations at the mouth of the Changjiang, clearing mines laid by KMT forces, after which the waterway is cleared for navigation.

6-8 July The Weigang and Cheqiao landing craft of the East China Military Region Navy, the Ruijin and Xingguo gunships, and 2 other gunboats work in coordination with the 293d Regiment and one battalion of the 294th Regiment of the 98th Division to conduct a landing operation on the Shengsi Archipelago that wipes out the entire KMT defense force and liberates all of the islands.

10 July Gunboat No 03 of the East China Military Region Navy is attacked and sunk by the KMT Navy in a naval battle at Langjishan; 12 sacrifice their lives, but 5 swim to safety. Zhao Xiaoan [6392 1321 1658], a gunnery mate who had sustained heavy casualties, battles more than 10 hours in a windswept sea before being brought back in victory. He is designated a "Class A Combat Exemplar" by the East China Military Region Navy.

12 July With 5 gunboats and 4 landing craft, the East China Military Region Navy joins 2 Army battalions in surprise attacks against KMT defenses dug in on Pishan Island off Zhejiang. During the battle, they sink one enemy gunboat, the Xinbaoshun, and they capture the "Jingzhong" Gunboat No 01 (which is then sunk by a KMT vessel while being towed), a motorized junk, 2 junks, and more than 60 officers and men, including a group commander. They kill more than 50.

10-30 August The Navy holds its first Army-Building Conference. The conference is in accordance with instructions from Chairman Mao Zedong and Commander-in-Chief Zhu De regarding the building of the Navy, and during it, they study the situation of China's sea areas and the experience of the Soviet Union in building its navy. They formulate a Navy 3-year construction plan and clarify such questions as the Navy mission and the ideology, principles, and lines of army-building, as well as study of the Soviet Navy.

24 August The Navy Speed Boat School is founded at Qingdao. It makes use of the Andong Navy School Cadre Training Unit. In its first term, it trains 897 students, refits 42 torpedo boats, and establishes 4 torpedo boat groups; from this is born the Navy's first torpedo boat force.

24 August The Navy Gunnery School is founded at Qingdao. It is based upon the Northeast Military Region's 6th Gunnery Division and the 4th Depot, 2d Branch of the 4th Field Army's Logistics Department, as well as the 10th Regiment of the Southwest Military Region's Special Column Gunners.

25-30 September The All-China Conference of Combat Hero Delegates and the All-China Conference of Model Workers Delegates is solemnly held in Beijing. Zhao Xiaoan, Li Hong [2621 3163], Sui Shude [7131 2885 1795], Liang Kuiting [2733 7608 1656], Wang Xianjun [3769 2009 0193], Lu Xiangshi [7120 4161 2514], and Tao Junqi [7118 0193 2978] appear at the conference as representatives of the Navy.

9 September The Navy Base at Qingdao is constructed, and the founding ceremony is held in the Qingdao Huiquan Stadium on 10 October. Yi Yaocai [2496 5069 1752] is base commander, Duan Dezhang [3008 1795 1757] is political commissar, Zhao Yiping [6392 0001 5493] and Zheng Guozhong [6774 0948 0112] are deputy commanders, Yang Guoyu [2799 0948 1342] is chief-of-staff, and Xu Zhizhong [5171 3112 0022] is deputy director of the Political Department. This unit is based on the units directly subordinate to the 11th Army of the 2d Field Army, as well as the Military Government College and the 2d Branch of the 4th Field Army's Logistics Department and each unit of the 12th Army Group.

21 October The first Coast Artillery Batallion is formed on Qingdaotuan Island by 258 graduates of the Navy Gunnery School.

31 October The Navy First Aviation School is founded in Qingdao, beginning operation on 1 November. It is based on such units as the Political Department, 2d Branch of the 4th Field Army's Logistics Department, some personnel from the 6th Depot and the North China Military Government College, and the East China Military Region Shandong Office of Aviation stationed at the Cangkou Airfield. In January 1951, this school merges with the Navy Second Aviation School then under development, and the name changes to Navy Aviation School.

3 December The Zhongnan Military Region is founded in Guangzhou. Fang Qiang [2455 1730] becomes commander and concurrently political commissar, Zhou Renjie [0719 0088 2638] becomes deputy commander and concurrently chief-of-staff, and Wu Gang [0702 4993] becomes director of the Political Department. The base for this region is the Guangdong Military Region River Defense Headquarters and units subordinate to the 173d Division, 58th Army. On 24 October 1955, the name of the Zhongnan Military Region Navy changes to Navy South China Sea Fleet.

1951

May Commander-in-Chief Zhu De goes to inspect the Qingdao Base Patrol Boat Group and the Coastal Artillery Battery. His party includes Luo Ronghuan [5012 2837 2719], Luo Ruiqing [5012 3843 0615], and Xiao Siqi [5135 3128 3217], and they are accompanied by Xiao Jinguang.

24 June Gunboats 411, 413, 414, and 416 are involved in a splendid escort battle in the Toumenshan sea area,

in which they rescue 3 grain shipping vessels that had been surrounded, sink 1 enemy vessel, and damage 3 enemy vessels. The East China Sea Military Region Navy commends Gunboat 414 with the title "Heroic Ship of the Toumenshan Sea Battle," and Division director Chen Lifu [7115 4539 1381] and Gunnery Mate Wang Weifu [3769 4850 4395] are recognized as combat heroes.

6-31 August The Navy holds its first Conference on Political Work in Qingdao. It is proposed at the conference that, "if we are to build-up the Navy, the most pressing problem is to set up an ocean-going combat power, and this should be the core around which all our efforts center...Political work must be implemented ideologically, politically, and organizationally to guarantee this mission."

13 October The Central Committee Military Commission issues the "Resolution Regarding Relations Among Navy Leadership," which defines the dual leadership functions of the large military regions' navies and the military commission navy headquarters as battle guidance for each of the large military regions and as organizational leadership for the headquarters of the military commission navy.

13-23 December The Navy convenes a Commanders Conference in Beijing. Commander Xiao Jinguang characterizes the basic measures of naval construction as accomplishing "the three posts" of political ideology, organization, and technology.

1952

14 February Chairman Mao Zedong goes to inspect Navy leadership structures in the company of Luo Ruiqing and Liu Yalou [0491 0068 2869]. Chairman Mao consults with Xiao Jinguang, Liu Daosheng, and Luo Shunchu, and they decide that, due to the urgent needs of the War to Resist U.S. Aggression and Aid Korea, the foreign exchange earmarked for the purchase of ships will instead buy aircraft to resolve Air Force problems. Xiao Jinguang immediately expresses support.

April The Navy Air Component is established in Beijing. Dun Xingyun [7319 2502 0061] is made commander of the Navy Air Component, Zeng Kelin [2582 0344 2651] and Mei Jiasheng [2734 0857 3932] are deputy commanders, Li Keru [2621 0344 1172] is deputy political commissar and concurrently Political Department director, and Zhao Huichuan [6392 0565 1557] is commander-in-chief.

April through June Commander Xiao Jinguang and Deputy Commander Luo Shunchu lead a Chinese Navy delegation to Moscow for discussions with the Soviet Ministry of the Navy regarding problems with orders of military goods.

15 June Commander Xiao Jinguang, Deputy Commanders Wang Hongkun and Luo Shunchu, Deputy Political Commissar Liu Daosheng, and Commander-in-Chief Zhou Xihan [0719 1585 3352] issue mobilization orders for an advance on literacy.

27 June The 1st Division of the Navy Air Component is founded at Shanghai's Hongqiao Airfield. It is based on first-term air and ground rear service personnel who had graduated from the Navy Aviation School and all personnel of the 90th Regiment, 30th Division, as well as the 25th Regiment headquarters of the Air Force's 9th Division and three flight dadui affiliated with it.

First fortnight in July The Navy Support Services School is founded at Qingdao. The name is changed on 6 October to Navy Support School.

July The Navy Political Cadre School is founded at Qingdao. Its basis is the Ship Management Regiment, 85th Division of the East China Military Region's 10th Army Group; the Ship Management Regiments of the 31st and 28th Armies; and some cadre transferred from various large military regions.

20 September Soldiers, such as Qiu An [6726 1344] of the Nanao Observation and Communications Station, join fisherman of Nanpeng Island to drive away the more than 140-strong "South China Sea Guerilla Formation" that, accompanied by 5 ships, attacks the island three times. Qiu finally dies heroically in battle, and the Zhongnan Military Region Navy Political Department posthumously commends Qiu An as a "Model Young Fighter."

1953

30 January Vice Chairman of the People's Revolutionary Military Affairs Commission Peng Dehuai inspects national defense project(s) construction in such areas as Shengsi, Zhoushan, Chuanshan, and Xiangshan in the company of Commander of Engineers Chen Shiqu [7115 1102 3255] and Navy Deputy Commander Luo Shunchu.

14 February Premier Zhou Enlai inspects a Lushun submarine student brigade, for whom he writes: "Respect the instructions of Chairman Mao and learn submarine warfare." This student brigade was formed in April 1951; its mission is to learn submarine technology from the submarine unit of the Soviet Pacific Fleet stationed in Lushun.

19-24 February Chairman Mao Zedong is taken from Wuhan to Nanjing on the ships Changjiang and Luoyang. He is enroute for 4 days and 3 nights. To those sailors, Chairman Mao says: "In the past, most often when imperialists invaded China, they did so from the sea. Today, the Pacific is not yet completely peaceful. We should have a strong Navy. When in the past we lived only on land, we were to love the mountains and the earth, but now that you are the Navy, you should love ships and islands and the sea." When Chairman Mao writes to the crews of the Changjiang, the Luoyang, the Nanchang, the Guangzhou, and the Huanghe, he writes

in all 5 instances: "We must build a strong Navy in order to oppose imperialist aggression."

5-15 March The Navy holds its first Conference of Heroes and Models in Beijing. A total of 48 hero and model delegates attend the congress, and there are 10 advanced units. The conference calls upon the many Navy officers and men to "love and serve the sea" and to struggle to build a strong ocean fighting force!

12 May through 9 September The East China Sea Region assembles 26 ships to rush 100,000 tons of grain into Sichuan to help peasants in the lower reaches of the Changjiang get through a famine.

June The Navy orders materials, equipment, and technical resources for one set of the five model ships from the Soviet Union.

20 August The Submarine School is founded at Qingdao. It is based upon the leadership organizations of the Chuanbei Military Region and members of such units as the Lushun Submarine Student Brigade.

14 September Liu Bocheng [0491 0130 2110], Commandant of the Chinese People's Liberation Army Military Academy, inspects the Dalian Navy School, after which he writes: "In keeping with our solemn mission to protect our motherland and Far East and world peace, ardently study Stalinist military science and Mao Zedong military thinking so that we might unite tactics and technology."

19 September Commander-in-Chief Zhe De inspects the Dalian Naval School and then writes about "diligently studying the advanced experience of the Soviet Union, mastering modern naval warfare technology, and protecting the coastal defenses of our motherland."

2 November Accompanied by Tao Yong [7118 0516], commander of the East China Military Region Navy, Premier Zhou Enlai inspects at sea the fleet units at the mouth of the Changjiang, observing an exhibition by 1st Division, 1st Regiment torpedo boats and aviators. Premier Zhou writes to these units: "Intensify your training, improve your techniques, and strive to solidify the coastal defenses of our motherland."

27 November The Central Committee Military Commission appoints Su Zhenhua [5685 2182 5478] to be deputy political commissar of the Navy, as well as concurrent director of the Political Department.

4 December Upon reviewing the 5-year plan and program for naval construction efforts at the expanded session of the Central Committee Politburo, Chairman Mao Zedong says: "In order to get rid of disturbances by ocean pirates and protect the security of ocean channel shipping; to prepare the strength to recover Taiwan at an appropriate opportunity and eventually unify our entire country; and to ready our forces to resist an invasion of imperialism from the sea, over a rather long period of time, we must build a strong Navy in a planned, progressive way in accordance with the situations regarding industrial development and finance." For that time, this was the most complete expression of principles, mission, and steps to be taken for the build-up of the Navy.

1954

18 March Deputy Group Leader Cui Wei [1508 1550] of the 6th Regiment, 2d Division of the Navy Aviation Component and Squadron Leader Jiang Kai [1203 0418] shoot down 2 KMT F-47 fighters south of Dafoshan Island off Nantian in Zhejiang Province. Navy Headquarters communicates orders to commend this first aerial victory of the Aviation Component.

16 April Two branches of the Dalian Naval School are established as the Naval Command School and the Naval School of Mechanics.

10 May through 20 June When Peng Dehuai, Vice Chairman of the CPC Central Committee, inspects the coastal Navy units and schools in Shandong, he says: "the steps that need to be taken regarding the build-up of our Navy should be 'first with boats, then with ships;' in this, such vessels as torpedo boats and submarines should be developed first." He also wrote something for the Navy: "We must progressively construct a powerful Navy to strike at imperialist aggression."

11 May Navy Aviation Component 6th Regiment, 2d Division Squadron Leader Bao Ximing [0202 6932 2494] and pilot Dong Shirong [5516 0013 2837] each shoot down or damage one KMT F-47 fighter apiece in the air space over Songmen in Zhejiang. Bao Ximing was able to return to base after that battle, even though injured.

18 May On their way to Dongji Island, the gunships Ruijin and Xingguo are ambushed by 4 KMT aircraft. Even after being hit, the Ruijin and its brother boat are able to shoot down one plane and damage another, only to sink eventually.

19 May Navy Aviation Component 6th Regiment, 2d Division group leader Wang Wanlin [3769 8001 2651], assistant group leader Song Guoqing [1345 0948 0615], group leader Zong Defeng [1350 1795 1496], and pilot Yin Zongmao [1438 1350 5399] shoot down 3 KMT F-47 fighters and damage one over Yijiangshan Island off Zhejiang Province.

3 June Navy Aviation Component 4th Regiment, 1st Division group leader Zhou Kelin [0719 0344 2651] and pilots Du Jiuan [2629 0046 1344], Liu Liangyang [0491 5328 2254], and Ren Xuli [1103 2485 0448] each shoot down or damage a KMT F-47 fighter over Xiaoeguan off Zhejiang Province.

19 June The People's Navy Independent Submarine Group is founded in Qingdao, with Fu Jize [0265 4949 3419] as squadron leader. The group is composed of 2 mid-size submarines (New China Nos 11 and 12) and 2 small submarines (National Defense Nos 21 and 22).

24 June The Chinese and Soviet Navies hold acceptance signing and flag-raising ceremonies at Lushun.

22 July The Navy Destroyer Group is founded in Qingdao. This group comprises the two destroyers Anshan and Fushun.

23 July Chen Yi [7115 3015] inspects the Navy Independent Submarine Group at Qingdao and the newly built submarine base, for which he offers a poem in congratulations.

12 October The Chinese and Soviet governments jointly announce that the Lushunkou Navy Base will be returned to China. The report declares: "Before 31 May 1955, Soviet Army units will leave the Chinese Navy Base at Lushunkou that has been shared by China and the USSR."

14 November People's Navy Torpedo Boat Group 31, Squadron 1, under command of Political Director Zhu Hongxi [2612 3163 0823] and Assistant Squadron Leader Tie Jianghai [6993 3068 3189], sinks the KMT frigate Taiping in the sea area between Dachen and Yushan off Zhejiang. This is the first battle since the founding of the torpedo boat unit. The Central Committee Military Commission issues an order of commendation to this dadui.

1955

10 January While all alone, Torpedo Boat No 102 sinks the KMT gunship Dongting with one torpedo.

15-18 January The Navy convenes an expanded session of the CPC Central Committee, which decides that one of the central tasks for 1955 will be thorough implementation of a compulsory service system, wage system, and rank system.

18 January Yijiangshan Island is liberated by the East China Military Region Navy with cooperation from the Army and Air Force. Included in the naval force are 4 destroyers, 2 gunships, 12 torpedo boats, 24 seaward defense boats, 6 rocket artillery boats, and 140 landing craft and cargo ships of all types, with more than 3,700 men and 5 regiments of the Aviation Component.

19 January In the battle to defend Shantougang, officers and men of the Navy Antiaircraft Independent 2nd Battalion heroically fight off 4 waves of 33 KMT F-84, F-47, and RT-33 aircraft, shooting down 5 and damaging 4. They receive an order of commendation from the Ministry of National Defense.

8-25 February With the aid of the US Seventh Fleet, KMT forces manage to retreat from the Greater and Lesser Dachen Islands, Pishan Island, the Yushan Chain, and the South Lushan Chain. With the Army, the East China Military Region Navy advances on and occupies those islands.

15 April Both China and the Soviet Union grandly hold the signing ceremony turning over Lushankou. The Chinese PLN is represented by Luo Huasheng [5012 5478 3932] and the Soviet Union by Ah. Pu. Kudeliangfuqiefu [7093 2528 1655 1795 4731 1133 0434 1133] as they sign the "Certificate Handing Over the Defense Mission to Local Forces as per the Liaodong Peninsula Agreement." To best handle the receipt and organization of the Lushunkou Navy Base, the Navy establishes the Navy Branch of the Commission for the Receipt of the Lushunkou Greater Defense District, with Zhou Xihan as director. On 20 April, the Army and Navy stationed at Lushun and people from all other jurisdictions join in a send-off celebration for the departing Soviet forces.

14 May The Lushun Base is established. Luo Huasheng is commander, Peng Lin [1756 2651] is political commissar, Liu Changyi [0491 2490 3015] and Shao Zhen [6730 7201] are deputy commanders, Song Jinghua [1345 2529 5478] is deputy political commissar, and Xie Zhenghao [6200 2973 3185] is chief-of-staff. The basis for the Lushun Base is the Railway Security Unit leadership organization and the Navy Branch organic unit.

7 November In the company of Commander Xiao Jinguang, Marshalls Peng Dehuai, He Long [6320 7893], and Nie Rongzhen inspect the Navy Command School.

November Navy units participate in a counterlanding military exercise organized by the General Staff in the Liaodong region. This exercise is personally directed by Marshall Ye Jianying. Among the Navy forces participating in the exercise are 65 vessels, such as destroyers, submarines, frigates, minesweepers, torpedo boats, and landing craft, as well as 63 aircraft and 23 coastal battery, anti-aircraft artillery, and searchlight companies. Liu Shaoqi, Deng Xiaoping, Peng Dehuai, Liu Bocheng, He Long, Chen Yi, Luo Ronghuan [5012 2837 2719], Nie Rongzhen, and Xu Xiangqian [1776 0686 0467], accompanied by Xiao Jinguang, are all aboard the Anshan to observe the 3-force joint exercise. They see a coordinated exercise with surface ships, aviators, and submarines. Liu Shaoqi and Deng Xiaoping jointly pen the following words to the Navy: "Comrades! Work together and struggle toward building a strong Navy!"

1956

10 January Chairman Mao Zedong is accompanied by Chen Yi in an inspection of the first Model 03 submarine to be built by China, which is then under construction at the Shanghai Jiangnan Shipyard.

9-19 June The Navy Party Committee convenes its first Party Congress. That conference holds that after 7 years of construction, the Navy has become a fighting force of rudimentary but significant scale that incorporates different types of forces and that, in concert with the Army and Air Force, basically accomplishes the sea defense combat mission appropriate during a certain period of the past. Having achieved this preliminary experience, a definite foundation has been laid for the development of the Navy of the future. In consideration of the contemporary situation both within China and without, the Congress affirms: "Regarding the relation

between Navy construction and national economic construction, we must comply with the principles of national economic construction; regarding the relation between Navy construction and the overall national defense effort, we must comply with the principle that developing the Air Force and Air-Defense Force is paramount, with appropriate development of the Navy; and regarding relations within the Navy construction effort, we must comply with the principle that stresses development of the aviation component, submarines, and speed boats, with appropriate development of other forces."

20-24 June The USSR Pacific Fleet commander, Vice Admiral Qiekuluofu [0434 1655 3157 1133] leads the light cruiser Dimitry Pozharsky and the destroyers Zhimou and Qimeng in a visit to Shanghai. Commander Xiao Jinguang and others visit those Soviet Navy vessels.

18 December At the 7th Military Training Conference, held in Shanghai, Commander Xiao Jinguang proposes "The Six Links in Grasping Training Organization and Leadership." Those six links are: 1) division of labor among Party leaders and commanders; 2) completion of organization and leadership of departments regarding training; 3) making the most of the roles of administrative leaders at all levels and making complete the work systems of these leaders; 4) training ship officers in a planned way; 5) maintaining a certain proportion of professional soldiers within key departments on ships; and 6) using older and retired soldiers and new recruits to supplement that proportion that cannot be exceeded.

1957

12 February The report on "The People's Navy" published by PLN Headquarters and the Navy Political Department is officially released (the name is later changed to reflect publication by the Navy Political Department alone). It is stated in "Talk About Newspaper Publishing" that "The PEOPLE'S NAVY paper is a newspaper that reflects the real situation of Navy construction and Navy combat life, offers guidance for all jobs, and provides for exchange of advanced experience."

15 February The Ministry of National Defense appoints Su Zhenhua [5685 2182 5478] as political commissar of the Navy.

27 June The Shanghai Jiangnan Shipyard builds (by license) China's first Model 03 submarine, which after verification of specifications is placed within the Navy submarine units. This submarine is christened the New China 15.

4 August Premier Zhou Enlai rides aboard Torpedo Boat 245 and Destroyer 101, representing the Party Central Committee and Chairman Mao Zedong in an at-sea review of units of the People's Navy stationed at Qingdao. During that review, Premier Zhou excitedly says to sailors: "You have achieved an impressive record in building an ocean armed force and in protecting coastal defensive and socialist construction. We congratulate you." He then urged everyone to continue working toward building a powerful Navy.

27 September The Navy Communications School is founded at Qingdao. It is based upon the communications branch of the Navy Consolidated School.

27 September The Navy Advanced School is founded at Qingdao. It is based upon three branches (weapons, machinery, and deck administrative services) of the Navy Speed Boat School and the Navy Consolidated School.

8 October The Naval Academy is founded in Nanjing. Navy Deputy Commander Fang Qiang [2455 1730] is concurrently Naval Academy president and political commissar; Xie Liquan [6200 4539 0356] is the first vice president; and Lei Yongtong [7191 3057 6639] is deputy political commissar.

1958

18 February As the Chinese people are welcoming in the New Year, Navy Air Component 4th Division, 10th Regiment Squadron Leader Hu Chunsheng [5170 2504 3932] and pilot Shu Jicheng [5289 4480 2052] shoot down a KMT RB-57 reconnaissance plane at an altitude of 15,000 meters over Shandong Peninsula.

21 June At an expanded meeting of the Central Committee Military Commission, Chairman Mao Zedong says: "In addition to continuing to strengthen construction of the Army and Air Force, we must get more involved in the shipbuilding industry and build an ocean 'railway' to more easily construct a more powerful ocean fighting force over the next few years."

7-23 July India's Fleet Commander, Navy Rear Admiral Chakeluofadi [2686 0344 3157 0127 5530] leads the cruiser Mysore into Shanghai for a visit.

28 July The Central Committee Military Commission produces the "Resolution Regarding Navy Construction." The resolution states that the Navy will concentrate on developing submarines, with appropriate development of necessary surface craft. And whether submarines or surface craft, special attention should be paid to using new technologies, as for example guided missiles and atomic power.

23 August To support the revolutionary struggle of the Middle Eastern peoples and to strike against provocations by the US and Chiang Kai-shek forces, the East China Sea Xiamen Region Coastal Battery Companies 150, 151, 108, 149, 160, and 107 and Army artillery units join in a punishing barrage of the KMT-held Jinmen Island, commencing at 17:30 hours.

1 September In the sea area south of Jinmen Island, East China Sea Fleet Seaward Defense Boat No 31 sinks the KMT Tuojiang hunter-killer ship using concentrated firepower, separated encirclement, and close and night fighting.

20 September Chairman Mao Zedong inspects torpedo boats manufactured by the Wuhu Shipyard, then rides for nearly 30 minutes on the Changjiang on boat No 227.

24 September Twenty-four KMT F-86 aircraft penetrate the airspace over Wenzhou prefecture in Zhejiang, some of them carrying Sidewinder missiles. Eight Navy Air Component 2nd Division aircraft take off to engage them. Encountering 12 enemy aircraft, which surround and attack him, Wang Zizhong [3769 5261 6850] heroically downs 2 of the aircraft armed with Sidewinders. But he is hit by an enemy missile as he disengages, dying a hero's death. He was posthumously awarded a first-class merit citation by the Navy Political Commission.

25 September Premier Zhou Enlai commands the Navy to do a compass point survey of the breadth of China's territorial sea to a distance of 12 nautical miles. They are to use the rectilinear method, both to ensure that China does not lose even one inch of national territory and also to have the basis by which to accord with international laws.

20 October The Navy Test Base is established. This base is responsible for testing aerodynamic rockets, artillery systems, navigation equipment, and submerged missiles, as well as underwater weapons and electronic countermeasure equipment and radar.

3-4 November Vice Premier Liu Shaoqi rides aboard Ships 826, 617, and 811 as he inspects the Zhoushan Archipelago sea area. On this occasion he writes: "Build the Zhoushan Archipelago to solidify the front lines of our coastal defense."

14 November East China Sea Fleet Commander Tao Yong responds to a call by the CPC Central Committee and the Central Committee Military Commission to undergo training as a sailor on Ship 311. He wears a sailor uniform with a private's insignia and indicates to the ship's leadership that he will certainly obey the Party branch and administrative cadre orders, telling them he'll do anything they say. Also undergoing low level soldier's training during this period are Generals Ma Long [7456 7893], Liu Yi [0491 5030], and Huang Zhongxue [7806 1813 1331].

6 December Navy marine depths measurement personnel join with survey personnel from both inside and outside the service, and after more than 2 months of fieldwork, they complete a survey mapping 316 control points and coordinate points north from the mouth of the Yalu River and south to the mouth of the Beilun River in Guangxi. They create 64 topographic maps and marine depth charts in this survey of China's territorial coastline.

1959

February The Chinese Navy orders five models of combat vessels from the Soviet Union (among which three are guided missile-equipped) and materials, equipment, and technical documentation for two types of missiles.

16 March The Navy party committee resolves to posthumously name Fujian Frontline Coastal Battery Company 150 Azimuth Controller An Yemin [1344 2814 3046] a full member of the CPC. That resolution states: "during a punishing battle with Chiang Kai-shek's forces, An Yemin was heroically indomitable as he sacrificed his own interests for the sake of others. After being seriously wounded under heavy fire, he stayed at his post until the victorious conclusion of the battle. During his recovery period at the hospital, although in critical condition, An Yemin was as full of revolutionary optimism as he'd always been: he was concerned about the battle and about his comrades as he struggled obstinately with great pain and death."

28 May Commissioner Zhu De and Vice Chairman Dong Biwu [5516 1801 2976] inspect the Navy Test Base and call upon the entire body of the First Shore-Based Ship Missile Unit.

12 June One company of the Navy First Shore-Based Ship Missile Unit performs the first live-ammunition firing on an off-shore target (a target ship) from the Test Base testing range.

23-24 May 147 ships of the East China Sea Fleet and 5 flight regiments of the Naval Air Wing (Independent Dadui) participate in a three-military (Army, Navy, and Air Force) landing exercise on Chuanshan Peninsula in Zhejiang. On the 25th, Marshall Ye Jianying and Nanjing Military Region Commander Xu Shiyou [6079 0013 0645] are accompanied by East China Sea Fleet Commander Tao Yong as they visit the Naval Air Wing units involved in the exercise.

10-17 June The training ship Dewarutji of the Navy of the Republic of Indonesia arrives in Guangzhou on a friendship visit. As the crew of this ship is sightseeing at the Huangpu Naval Port docks, they are warmly welcomed by South China Sea Fleet Commander Zhao Qimin [6392 0796 3046] and 1,500 officers and men.

Latter part of November As Vice Premier Liu Shaoqi is inspecting Coastal Battery Company 147, he encourages the Navy sailors to diligently study technology so that they might build a powerful Navy and develop the maritime enterprise. On the 24th, Vice Premier Liu writes to the Navy: "Build a powerful Navy and develop China's maritime enterprise."

1960

1 August The Navy North China Sea Fleet is founded in Qingdao. Liu Changyi [0491 2490 3015] is commander; Ding Qiusheng [0002 4428 3932] is political commissar; Yi Huicai [2496 5069 1752], Zhang Yuanpei [1728 0337 1014], and Deng Zhaoxiang [6772 0340 4382] are deputy commanders; Liu Huaqing is concurrently deputy commander and Lushun Base commander;

and Lu Rencan [4151 0088 3503] and Huang Zhongxue [7806 1813 1331] are deputy political commissars.

14 December The Navy Artillery School is expanded into the Navy Advanced Training School.

1961

5-19 May Marshall Ye Jianying attends the Navy Military Training Conference, where he points out that unit training should first address the problems of actuation and accuracy in order to lay a good foundation and get past technical difficulties; only then can we take the next step, where we study tactics and resolve the problems of connectivity and synthesis. He also addresses Navy military training, proposing the industrious military principles of: "Arduous training in harbors and on the coasts and precision training at sea; arduous training on the ground, and precision flying in the air."

7 June The Fleet Institute is established, with Liu Huaqing as director.

5 October The Navy Engineering Academy is established. It is based upon the Navy School of Mechanics and the division organizations of the Army's 198th Division.

1962

10 June The CPC Central Committee issues instructions to prepare to shatter KMT troops that have raided areas along the southeast coast. The Navy immediately puts emergency operations into effect and initiates education efforts in political ideology that center on denouncing American and Nationalist crimes, which starts a mass movement of militaristic sentiment. Regarding troop deployment and goods and equipment, appropriate adjustments and full preparations are taken. As the entire nation stands ready in battle array, revealing the new society, Chiang Kai-shek's troops are forced to abandon their militarily risky behavior.

18 June The Ministry of National Defense appoints Li Zuopeng [2621 0155 7720] as Navy deputy commander and Zhang Xiuchuan [1728 4423 1557] as Navy Political Department director.

1963

2 May At a Central Committee Military Commission meeting, Chairman Mao Zedong issues instructions in a report on naval questions to the CPC Central Committee: "I would hope that party commission comrades at all levels will unite, keep the overall situation in mind, call forth all your vigor and work with redoubled efforts, add to your achievements and correct your mistakes, and work as do the other forces at doing the best with Navy efforts. It is not important if mistakes are made. They can always be corrected."

18 May Ten ships from the East China Sea Fleet move into a formation at sea to investigate why the ocean freighter Yuejin sinks en route to Japan's Kitakyushu. After operating over 14 days and nights, the investigation concludes that the Yuejin sank after hitting a reef. When the formation had accomplished its task, it was commended by the CPC Central Committee, the State Council, and the Central Committee Military Commission.

26 June The Navy party committee summons all Navy officers and men to study the achievement of the crew of Ship 162 of the South China Sea Fleet in finding every possible way to conserve fuel and in rousing up the "every drop of fuel" spirit.

Early August There is a continuous torrential downpour in south and central Hebei Province, which leads to rivers of run-off from the mountains and serious flooding in 7 prefectures and 101 counties (and cities). The Navy sends out 5 rescue units, 1 reconnaissance team, and 1 team of flood drainage engineers, for a total of 1,965 people; they also dispatch 82 ships of various kinds, 5 aircraft, 178 rubber rafts, and 26 motor vehicles. A total of 83,905 people are saved, 42,107 kg of life-support materials and foodstuffs are shipped in by air, and 2,690 people are treated medically, all of which is commended by the Central Flood Prevention Headquarters.

14 August The Ministry of National Defense issues orders that, for 8 successive years of safe flying during strategic training, the 3d Dadui, 10th Regiment, 4th Division and the 1st Dadui, 12th Regiment are to be awarded a group first-class merit award.

1964

23 March The Ministry of National Defense issues orders granting the posthumous title of "Model for Love of the People" to Zhao Erchun [6392 1422 2504], as well as decreeing that the squad in which he served be known as the "Zhao Erchun Squad." On 27 December 1963, Zhao Erchun, a soldier in a telephone monitoring squad of a communications station at Wenzhou Maritime Headquarters, joined with the people in brave rescues from a fire, only to lose his life.

1 May The 29th Escort Vessel Dadui engaged 4 KMT Sea Wolf vessels near the KMT-occupied Dongyin Island and sank two while capturing one.

20-29 May The Navy calls an on-the-spot study session at the Zhoushan Base to learn from Guo Xingfu [6753 5281 4395]. During the meeting, 28 small groups give performance reports on 28 items, 13 units describe typical experiences, and 18 specialty items are also disseminated.

2 June Marshalls He Long and Ye Jianying and Senior Admiral Luo Ruiqing are accompanied by East China Sea Fleet Commander Tao Yong as they observe performances by 9 Guo Xingfu style "star" cells, such as Coastal Battery Company 107 doing silent operations,

Ship 218 doing main engine critical readiness, Submarine 126 doing operations training with dive and surfacing systems, and Ship 393 doing combat preparations with mines. Marshall Ye Jianying also heard reports by cadre from 17 cells, after which he wrote: "Study hard and train hard; build the East China Sea Great Wall" and "With ships taut and powder dry, steadfastly become our nation's coastal defenses."

11 June A KMT P2V-7 electronic surveillance aircraft penetrates the airspace over Shandong Peninsula. Zhongdui Leader Chen Genfa [7115 2704 4099] and pilot Shi Zhenshan [4258 2182 1472] of the Independent 5th Dadui, 4th Division, Naval Air Wing take off to intercept the enemy aircraft, and they shoot it down using an illuminator to fire illuminating rockets that expose the enemy aircraft to attack. Four Sidewinder missiles are captured from this episode, and all 13 men aboard the enemy plane are killed.

16 June Premier Zhou Enlai and Vice Premiers Nie Rongzhen and Luo Ruiqing meet with such persons as Chen Genfa who were meritorious in the shoot-down of the P2V-7.

1 July Vice Premiers Deng Xiaoping and Li Fuchun inspect the Dalian Shipyard, where they see a model of a conventionally-powered guided missile submarine.

24 July The Ministry of National Defense issues orders to bestow upon Company 3 of the Navy Test Base Engineers the designation "Advanced Company for Conserving the Use of Coal for Cooking." In 1958, Company 3 fabricated a coal-burning method that uses a horseshoe-shaped circulating air range, which brought daily consumption of coal from an average of 1.5 jin per person down to 0.4 jin, saving more than 112,000 jin of coal for the state over the past 6 years.

5 October The Ministry of National Defense issues orders granting Zhao Zongli [6392 1350 4409] the rank of 2nd Lieutenant after he sailed a boat back to the mainland from Greater Jinmen. The Ministry also grants him 600 ounces of gold and commends his patriotic action.

5-17 December In Qingdao, the Navy convenes a martial arts mass rally. 89 fendui take part in the group martial arts competitions, 108 persons take part in the individual competitions, 35 fendui take part in the group exhibitions, and 27 persons take part in the individual exhibitions. The rally evaluates the skills of "stars," sets up outstanding training exemplars, searches out weak links, reviewes experiences, and disseminates the efforts gained from the experience of "stars" as a foundation for others.

18 December Using the tactic of high-altitude concealed ambush, Deputy Commander Wang Hongxi [3769 7703 0823] of the 10th Regiment, 4th Division, Naval Air Wing shoots down a KMT RF-101 high-altitude reconnaissance aircraft over the ocean 45 km east of Wenling in Zhejiang. After parachuting, the pilot, Major Xie Xianghe [6200 5046 7729], is captured by the militia. The same day, the Ministry of National Defense wires congratulations to the units and militia involved in this action.

21 December The Ministry of National Defense issues orders bestowing first-class group merit upon the Luqiao Base Command Post for accurate command and guidance of a fighter in the shoot-down of the KMT RF-101 reconnaissance plane.

29 December Premier Zhou Enlai and Chief-of-Staff Luo Ruiqing meet with such meritorious personnel as Wang Hongxi, involved in the Naval Air Wing downing of the KMT RF-101 reconnaissance plane, and with representatives of militia who captured the KMT pilot.

1965

10 March At Shanghai's Wusong Docks, Premier Zhou Enlai and Vice Premier Chen Yi, in the company of East China Sea Fleet Commander Tao Yong and Political Commissar Liu Haotian [0491 3185 1131], review 13 ships, such as cruisers and submarines, and observe formation tactical exhibitions involving 12 torpedo boats and 16 fighters. Premier Zhou rides on Submarine No 126, then writes to the troops: "Train your units realistically, strictly, and from a perspective of adversity." Vice Premier Chen Yi writes: "Do a good job with your preparations that we might shatter any enemy attack."

24 March Zhongdui Leader Wang Xiangyi [3769 4161 0001] of the 10th Regiment, 4th Division, Naval Air Wing shoots down an American Blue Fire unmanned high-altitude reconnaissance aircraft that had violated Chinese airspace.

31 March At an altitude of 17,600 meters northeast of Lingshui on Hainan Island, Deputy Dadui Leader Shu Jicheng [5289 4480 2052] of 10th Regiment, 4th Division, Naval Air Wing shoots down an American Fenghuo [3536 3499]-type unmanned high-altitude reconnaissance aircraft that had violated Chinese airspace.

Because of Shu Jicheng's daring in aerial close-quarters combat with enemy aircraft and his regular outstanding record, on 3 April, the Ministry of National Defense issues orders awarding him the designation "Combat Hero."

9 April Dadui Leader Gu Dehe [6253 1795 0678] and pilots Cheng Shaowu [4453 4801 2976], Wei Shouxin [7614 1343 0207], and Li Dayun [2621 1129 0061] of the 24th Regiment, 8th Division, Naval Air Wing engaged in a dogfight with 4 US F-4B fighters that had violated Chinese airspace over the Yulin area of Hainan Island. The American aircraft shoot one of their own planes down during the melee.

24 May The Ministry of National Defense issues orders bestowing the title "At-Sea Vanguard Ship" to the ship Xianfeng in the Shantou Maritime area. This ship had been in the Wanshan sea battle in 1950, in which it

had joined with fellow ships to sink one enemy vessel and had single-handedly captured another enemy ship. In the more than 10 years since, the crew has fostered a vanguard spirit, gaining outstanding achievements in all aspects of operations and training.

6 August Four high-speed escort craft, 11 torpedo boats, and Gunship No 161 of the South China Sea Fleet sink the large KMT hunter-killer ship Jianmen and the small hunter-killer ship Zhangjiang in the Dongshan and Dongnan sea regions off Fujian. More than 170 men under the command of and including Second Defense Patrol Fleet Major General Hu Jiaheng [5170 0857 1854] are killed, and 33 men under the command of an including the Jianmen's commander, Wang Yunshan [3769 7291 1472], are captured alive (this sea battle is also known as the "8-6" sea battle).

12 August Navy Commander Xiao Jinguang and Political Commissar Su Zhenhua issue orders bestowing the designations "At-Sea Heroic Ship" and "Heroic Speedboat" on Escort Boat No 611 and Torpedo Boat No 119, respectively, for their outstanding achievements during the "8-6" sea battle.

Afternoon of 17 August Such Party and national leaders as Mao Zedong, Liu Shaoqi, Zhou Enlai, Deng Xiaoping, Dong Biwu, Peng Zhen, He Long, and Li Xiannian meet with Navy representatives of the meritorious personnel who participated in the "8-6" sea battle. Mao Zedong praises the execution of this sea battle. Zhou Enlai praises them, saying that this battle was a case of close combat, night combat, and group combat, that involved little ships beating larger ships.

Afternoon of 21 August Combat Hero Shu Jicheng once again shoots down an American unmanned high-altitude reconnaissance plane violating the Chinese airspace over the region of Lingshui on Hainan Island.

20 September Dadui Leader Gao Yao [7559 5046] and Deputy Dadui Leader Huang Fengsheng [7806 7685 3932] of the 10th Regiment, 4th Division, Naval Air Wing shoot down an American F-104C fighter that had violated Chinese airspace over Haikou on Hainan Island. After the American pilot, Captain Shimisi [0670 1378 2448], parachutes out, he is captured by militia. The Ministry of National Defense issues commendations that very day. The Navy awards Gao Xiang first-degree merit, and the South China Sea Fleet awards Huang Fengsheng second-degree merit.

8 October Premier Zhou Enlai and Chief-of-Staff Luo Ruiqing meet personally with the Naval Air Wing meritorious personnel Gao Xiang and Huang Fengsheng, who had downed an American F-104C fighter plane.

14 November A high-speed escort craft and torpedo boat formation from the East China Sea Fleet sinks the KMT convoy gunship "Yongchang" and damages the large hunter-killer ship "Yongtai." That same day, the Ministry of National Defense announces commendation for units involved in the battle (this battle is known as the "East of Chongwu Sea Battle").

26 November Premier Zhou Enlai and Chief-of-Staff Luo Ruiqing meet personally with representatives of the meritorious personnel from ship units of the East China Sea Fleet who had sunk or damaged the KMT Yongchang and Yongtai during the East of Chongwu Sea Battle.

27 November Vice Premier Chen Yi appears in both Fuzhou and Sandu Bay at meetings to congratulate units of the East of Chongwu Sea Battle and to review battle experiences. He also gave speeches.

29 December The Ministry of National Defense bestows the designation "Mighty Eagles Over the Sea" upon the 10th Regiment, 4th Division, Naval Air Wing. In its participation in the War to Resist U.S. Aggression and Aid Korea, in such battles as the liberation of Yijiangshan Island, and during ship warfare around Hainan Island, the 10th Regiment has downed a total of 23 enemy aircraft and damaged 8 others.

1966

3 February The Ministry of National Defense issues orders bestowing the designation "Fierce Tiger at Sea Ship" on Escort Boat No 588 that had achieved combat merit during the East of Chongwu Sea Battle.

8 February Central Committee Military Commission Vice Chairmen He Long and Ye Jianying pay a visit to Navy sailor Mai Xiande [7796 6343 1779], who had been wounded during the "8-6" sea battle, at the Guangzhou Military Region General Hospital.

23 February The Ministry of National Defense issues orders bestowing the designation "Combat Hero" upon Mai Xiande. Mai Xiande is an electromechanics specialist attached to Ship No 611 of the 41st Escort Boat Dadui, who was seriously wounded early on during the "8-6" sea battle, but who stayed at his post until the victory had been secured.

14 March The Ministry of National Defense appoints Wang Hongkun [3769 1347 0981] as Navy second political commissar.

7 September The South China Sea Shipping Dadui returns to China after satisfactorily completing its shipping mission of assisting Vietnam. This dadui comprises 29 ships, and had set out from China on 9 June 1965. During the trip to Vietnam, it traveled some 211,000 nm; shipped a large quantity of weapons, ammunition, and materials; and also accomplished its antiaircraft mission.

12 October The Navy proclaims citations to commend the fact that as the South China Sea Shipping Dadui was successfully completing its mission of assisting Vietnam, it engaged in ship-to-air combat on 33 occasions, downing 13 American aircraft and damaging 16. They

set the glorious precedent of being the first to shoot down modern American aircraft with light weapons on small craft.

3 November Soldiers of the 3d Battalion Command, 2d Regiment of the Navy Antiaircraft Artillery, who are responsible for the mission of the War to Resist U.S. Aggression and Aid Vietnam, join with fellow units to shoot down 3 American aircraft (an F-105, F-4, and RF-101) and damage 3 others (an F-105 and F-4). They capture the first victory for the Navy Antiaircraft Artillery units since entering Vietnam.

1967

9 June The Central Committee Military Commission appoints Li Zuopeng as Navy first political commissar.

26 June Deputy Dadui Leader Wang Zhushu [3769 2691 2579] and Pilot Lu Jiliang [0712 4764 5328] of the 16th Regiment, 6th Division, Navy Air Wing shoot down an American F-4C fighter plane over the SE area of Hainan Island. On 2 July, the Navy awards Wang and Lu certificates of first-class merit.

30 June The 1st Antiaircraft Regiment is awarded an order of commendation by the Central Committee Military Commission. During the War to Resist U.S. Aggression and Aid Vietnam, they joined with fellow units to shoot down 16 American aircraft.

4 July On orders endorsed by the General Staff, Navy Headquarters forms the first guided missile submarine base at Qingdao and assigns the 201st Guided Missile Ship Dadui to be stationed there.

1968

14 February Deputy Dadui Leader Chen Wulu [7115 2976 6922] and Pilot Wang Shunyi [3769 7311 5030] of the 18th Regiment, 6th Division, Navy Air Wing each shoot down or damage 1 US Navy A-1 shipboard attack aircraft over the Wanning area of Hainan Island. On 18 February, the Navy awards Chen and Wang first-class commendations and awards the 3d Dadui a second-class commendation.

1969

9, 11-12 February After hearing a report on the national defense industrial system, Premier Zhou Enlai says: "...we must quicken production of submarines and speed boats. We have great hopes of launching a nuclear submarine in 1970,...the Navy must erect an air and sea defense system."

22 June The first model 33 submarine is constructed using nothing but Chinese-produced materials and equipment, and it is assigned to a Navy submarine unit. This ship is designated the "New China No 42."

1970

21 November The Central Committee Military Commission issues orders bestowing the designation "Model Communist Youth Member" upon Hu Yetao [5170 2814 2711]. Hu Yetao was a soldier in a navigation company of the Navy Air Wing's Independent 2nd Regiment, who died heroically during operational construction on 25 January 1970 while trying to save a comrade who had received an electric shock.

1971

24 September The CPC Central Committee orders Li Zuopeng, an important member of the Lin Biao revolutionary clique, to be removed from his position and to undergo self-examination, as well as to justify his actions.

December The first guided missile destroyer developed by China is turned over to Navy units for use. This ship was trial-produced by the Dalian Shipyard, with the cooperation of 22 provinces and municipalities and more than 260 factories throughout the country.

1972

24-27 April The Chilean training ship Esmeralda arrives in Shanghai on a visit.

22 May The Central Committee Military Commission appoints Su Zhenhua [5685 2182 5478] as Navy first deputy commander.

July The Navy sends minesweeping work teams to Vietnam (12 minesweepers, 4 escorts, and 318 personnel), which arrive in Vietnam in 5 groups to help the Vietnamese people shatter the mine blockade set up by the American imperialists.

1973

1 March The Central Committee Military Commission issues orders appointing Su Zhenhua as Navy first political commissar.

11-16 March The Peruvian training ship "Independence" arrives in Shanghai for a visit.

May The Navy issues the trial edition of "Ship's Manual for the Chinese People's Liberation Navy."

27 August The minesweeping teams sent by the Navy to Vietnam return to China. During their stay in Vietnam, the minesweeping teams swept more than 27,000 nm of primary navigation channels, gathering in 46 American mines of various types. Among the work teams, nearly 40 percent receive commendation. All are decorated for their combat merit by the Vietnamese. Ship No 05 gathered or exploded 15 mines, for which it is awarded a first-class commendation. Zhu Zhongbin [2612 6850 3453] was seriously injured during minesweeping operations, with broken bones in 6 places, but he did not neglect his battle station, for which he is posthumously named a first-class meritorious soldier.

1974

19 January Ship units from the South China Sea Fleet make a heroic counterattack again South Vietnamese troops who have invaded China's Xisha Yongle Archipelago sea area, in one stroke sinking 1 frigate and damaging 3 destroyers. On the 22nd, they join with the Army to recover the entire group of islands that had been occupied by South Vietnam.

1 August The Central Committee Military Commission issues orders christening the first nuclear submarine built in China as the "Long March No 1," officially placing it in the ranks of Navy fighting ships. Navy commander Xiao Jinguang and deputy director of the National Defense Science, Technology, and Industry Commission Qian Xuesen [6929 1331 2773] participate in the christening ceremony.

19 August Accompanied by Commander Xiao Jinguang and Deputy Commander Liu Daosheng [0491 6670 3932], the venerable 88-year-old Commissioner Zhu De rides aboard Destroyer 223 to review new Navy ship units in the Qinhuangdao sea area. Commissioner Zhu rides with the sailors for more than 3 hours, and writes to the Navy: "Strengthen your revolutionary unity to quicken the building of the People's Navy."

1975

7 June The State Council and the Central Committee Military Commission approve the figure from Navy statistics for the total length of China's continental shore line to be more than 18,000 km. They also determine that from the day of that approval, this new data shall be used throughout China. This is an accomplishment of years and months of hard work on the part of Navy navigation channel survey work.

26 June When CPC Central Committee Vice Chairman Deng Xiaoping accompanies foreign visitors to inspect Destroyer No 106, he writes to the Navy: "Resolutely and thoroughly implement the grand call by Chairman Mao to struggle toward the building of a powerful Navy."

15 October through 5 December Submarine 295 undergoes tests under its own power.

28 December The first model 053H missile frigate joins the ranks of naval ship units.

1976

1-14 June Fifty-eight members of an Aid to Kampuchea mine-laying group of the Navy's South China Sea Fleet use 4 torpedo boats to place 611 deep-water bombs and remove 13 mines that had been left in the Mekong River.

10 July With the approval of the State Council and the Central Committee Military Commission, 72 ocean charts and 6 different navigation materials exclusively for use by foreign shipping are officially published. They are drawn up by the Navy Command Navigation Department of Security and are published by the China Navigation Chart Press. This publishing house had been established in Tanggu in Tianjin Municipality on 20 July 1974.

17-23 July The Mexican convoy ships Cuauhtemoc and Cuitlahuac arrive in Shanghai for a visit.

28 July A fierce earthquake of 7.8 magnitude rocks the region from Tangshan to Fengnan. The Navy sends 13 rescue and medical teams, a total of 2,649 persons, and 139 vehicles of various types. Those teams treat more than 15,000 people injured in the quake, dig out more than 5,000 bodies, and erect more than 1,300 temporary dwellings for the people.

1977

24 January Submarine No 252 completes a training exercise that took it to the Western Pacific on a journey of more than 3,300 nm. By means of this exercise, they have achieved a preliminary familiarity with the peculiarities of operational command in the Western Pacific, and they generated materials surveying hydrology and warm currents. These activities elicit the commendation of the Central Committee Military Commission.

8 March The Navy party committee issues orders bestowing the designation "Model Political Instructor" upon Zheng Xiting [6774 0823 0080]. Zheng Xiting was an instructor at the Qingdao Maritime Communications Station. On 28 May 1975, an accident occurred as he was guiding his company in hand grenade throwing practice, and he sacrificed himself to protect the other soldiers.

8 March The Navy party committee issues orders bestowing the designation "Good Soldier in the Style of Lei Feng" upon Shen Shuqin [3088 2579 3830]. Shen was a soldier in the materials section of the North China Sea Fleet Second Construction Office. On 20 June 1975, he died heroically while rescuing more than 10 children and travelers after chasing down a runaway horse.

24-29 July Submarine No 296 is successful in deep diving tests in a certain sea area in the South China Sea.

6 October The Central Committee Military Commission issues orders appointing Du Yide [2629 5030 1795] as the second political commissar for the Navy. Du Yide had been appointed deputy political commissar of the Navy on 2 July 1960.

1978

1 April The French Navy destroyer Duguay-Trouin arrives in Shanghai on a friendship mission. The evening of 4 April, Commander Xiao Jinguang holds a welcoming banquet.

10 May The Navy party committee bestows the designation "Good Cadre in the Lei Feng Style" upon Xing

Xinfu [6717 0207 4395]. Xing is deputy company commander of the 3d Company, 7th Independent Antiaircraft Battalion in the Haikou Maritime District. On 26 August 1977, an accident happened as the company was involved in hand grenade throwing practice, and Xing suffered serious injuries in protecting the other soldiers.

13 August The Navy party committee issues orders bestowing the designation "Good Worker in the Lei Feng Style" upon Chen Ziliang [7115 1311 5328]. Chen is a staff worker in the Navy First Aircraft Ground Maintenance School Service Company. He has been driving and repairing vehicles for decades; and without regard to name, profit, or personal advantage, he has been conserving to the utmost and working very hard. For the job of "repairing old equipment and making use of waste materials" alone, Chen has been responsible for saving more than 100,000 yuan.

6 December The Navy party committee issues orders bestowing the designation "Marine Cable Innovation Expert" upon Zeng Daren [2582 6671 0086]. Zeng is an assistant office head at the Communications Office of the North China Sea Fleet Headquarters. He joined workers and scientific and technical personnel in forming the "3-into-1" group, which successfully developed the first drum cable-layer in China.

1979

12 February The Central Committee Military Commission issues orders appointing Ye Fei [0673 7378] as Navy first political commissar.

24 February The Navy party committee issues orders bestowing the designation "Maintenance Cadre in the Style of Lei Feng" upon Zhou Wenying [0719 2429 5391]. Zhou was ad hoc committee chairman of the Ground Maintenance 2d Zhongdui, 5th Division, Air Wing. During night navigation training on 20 September 1977 when an aircraft and a power-supply vehicle were just about to collide, he threw himself between them as a "cushion," protecting the aircraft and his comrades, but valiantly losing his life.

March The Navy issues "China People's Liberation Navy Regulations for Naval Warfare."

3 April When CPC Central Committee Vice Premier Deng Xiaoping hears the reports of Navy First Political Commissar Ye Fei and Political Commissar Du Yide, he states: "Our Navy should do battle near the coastline, as it is defensive in nature." All building of the Navy has been in accordance with this principle. Naturally, defense also requires a combat capacity. The equipment and planning of the Navy must proceed along these lines, for above all it must be useful.

20 May—19 June In sea areas from the Yellow Sea to the East China Sea, the Navy runs the "795" exercise, based on interception of "enemy" ocean going formations. Four submarines, 3 destroyers, 19 other craft, 4 B-5 aircraft, and 8 fighters take part in the exercise.

29 July At an expanded meeting of the Navy Party Committee Standing Committee, CPC Central Committee Vice Chairman Deng Xiaoping gives an important speech entitled "The Implementation of Ideological and Political Lines Must Depend for Their Guarantee Upon the Arrangement of Those Lines."

2 August Vice Premier Deng Xiaoping is accompanied by Navy Political Commissars Ye Fei and Du Yi as he rides aboard Guided Missile Destroyer 105 in an inspection at sea, where he is under power for more than 6 hours. Vice Premier Deng writes to the Navy: "Build a powerful Navy that has a modern combat capacity;" and he clarifies construction principles for the new historical period.

9-25 September Navy Deputy Commander Liu Daosheng leads a Navy delegation to England for a friendship visit, where they see an exhibition of British Navy equipment.

3-7 October The Italian Guided Missile Destroyer Ardito and the Guided Missile Escort Ship Lupo arrive in Shanghai for a visit.

20 December The Navy Marine First Brigade is established on Hainan Island.

1980

11 January The Central Committee Military Commission issues orders appointing Ye Fei Navy commander.

30 March Submarine No 256 undertakes combat exercises over the widest diameter ever in the Pacific.

1-2 June The At-Sea Task Force participating in the long-range booster rocket flight test into a South Pacific sea area satisfactorily completes such missions as escort, security, splash-down measurements, and salvage of the data capsule, and returns victoriously to Shanghai. The task force comprised 18 ships and 4 helicopters. Liu Daosheng was concurrently fleet commander and political commissar; Yang Guoyu [2799 0948 1342], Tian Zhenhuan [3944 7201 3883], Gao Xizeng [7559 1585 2582], and Nie Kuiju [5119 1145 5112] were deputy commanders; Zhang Dianzhong [1728 3013 1813] was deputy political commissar; Zhang Xusan [1728 1645 0005] was chief-of-staff; Yang Baoxiang [2799 1405 7013] was chief of the Political Department; and Hou Xiangzhi [0230 0686 0037] was head of Logistics Command. The At-Sea Task Force set out from Shanghai on 28 April and left the test range for the return trip on 22 May.

August The Navy Defense Salvage Unit and the Salvage Company of the Ministry of Transportation join to accomplish the engineering mission of salvaging the Abo [7093 3134] Maru. The Abo Maru was a Japanese 10,000-ton passenger-cargo ship sunk by an American submarine on 1 April 1945 in an ambush off Pingtanniushan in China's Fujian Province. Some 2,000 Navy personnel participate in the salvage; they are involved in 347 days of sea operations, that include diving for a total

of 1,417 hours. The joint military-civilian salvage brings up more than 1,618 tons of human remains and their belongings. The State Council and the Central Committee Military Commission wire congratulations to the entire crew of the Abo salvage effort.

4-8 September The British Light Cruiser Antelope, Destroyer Coventry, and Frigate Achilles arrive in Shanghai for a visit.

19-28 October The South China Sea Fleet Destroyers 161 and 162, Frigates 506 and 509, Tugboat 154, and General Supply Ship 950 undertake navigation exercises in the Western Pacific.

22 October While studying in France, Navy divers Che Yuejin [6508 6460 6651], Zhang Ning [1728 1337], Fang Yingwei [2075 5391 3956], Wang Minshan [3769 3046 1472], Zhao Junjian [6392 6511 0256], and Yin Xiaobao [3009 2556 1405] set a world deep-sea diving record of 205 meters.

29 October The Central Committee issues orders appointing Li Yaowen [2621 5069 2429] Navy political commissar.

8 November Two B-6 aircraft of the 8th Regiment, 3d Division, Navy Air Wing patrol the Nansha Archipelago.

24 November through 6 December First Deputy Commander Liu Daosheng leads a Navy delegation in a visit to Pakistan.

1981

1 January The Navy officially promulgates the "People's Liberation Navy Fleet Manual." The Navy had 5 times issued provisional editions of the fleet manual. This edition was compiled and set down in light of the provisional editions and as guided by Mao Zedong Military Thought, and it encompasses the joint regulations of all services, extracting the lessons from more than 30 years of experience for the fleet units.

25 January A special tribunal of the Supreme People's Court sentences Li Zuopeng, a principal criminal of the Lin Biao counter-revolutionary clique, to 17 years in prison and to be deprived of political rights for 5 years. The charges of which he was convicted include: actively participating in the activities whereby Lin Biao usurped the highest authority of the Party and the state; organizing and leading a counter-revolutionary clique; scheming to topple the government; and lodging false charges.

26-31 January The French helicopter carrier Jeanne d'Arc and the frigate Forbin arrive in Shanghai for a visit.

30 April A nuclear submarine armed with guided missiles performs a diving ceremony. Vice Premier Zhang Aiping, Commander Ye Fei, Political Commissar Li Yaowen, and First Deputy Commander Liu Daosheng participate in this ceremony.

25-27 July Premier Zhao Ziyang rides aboard ships 3 times on a visit to Navy units stationed at Yantai, and he encourages the Navy cadre and sailors to make even greater contributions to Navy modernization.

29 July Submarine 235 is successful in test launching a self-guiding torpedo.

31 August Former U.S. President Carter and 34 fellow travelers visit East China Sea Fleet Shanghai Base ship units.

3-7 September The Australian Navy destroyer escort Swan visits Shanghai.

19 September 282 cadre and sailors of the East China Sea Fleet Training Regiment form a review unit that is inspected by party and state leaders at a location in North China.

29 October The Navy party committee issues orders bestowing the designation "Model Sailor Who Loves the Sea Islands" upon Cai Deyong [5591 1795 0737]. Cai is a squad leader at the Shanhaiguan target range of the Navy Air Wing. In complying with the needs of the revolution, he voluntarily held posts on islands for 10 years, several times being rewarded for merit.

1982

14-20 March Commander Ye Fei leads a Navy delegation on a visit to Thailand.

17-26 April Deputy Commander Fang Qiang [2455 1730] leads a Navy delegation on a visit to Algeria.

10-18 May The Navy holds its first academic conference. The Navy party committee produces the "Resolution Regarding the Enhancement of Navy Military Scientific Research."

11 August The Central Committee Military Commission issues orders bestowing the designation "Patriotic Island-Loving Remote Sentries" upon the Xisha Maritime District Zhongjian Island Garrison. Since its organization in 1978, this garrison has been on duty throughout the year on Zhongjian Island, known as the "Gobi of the South China Sea." They have integrated their love of the island with their patriotism, gaining honor from their hardship and seeing the island as their home. They unite for battle, are ever vigilant, and in an outstanding way, have accomplished every mission having to do with guarding and building up the island.

11-18 August The Navy convenes a congress for the purpose of building advanced units and advanced individuals in a socialist spiritual culture. The congress bestows the title "Navy Model Soldiers for Building a Socialist Spiritual Culture" upon 9 advanced units and 15 advanced individuals.

28 August The Central Committee issues orders appointing Liu Huaqing as navy commander.

12 October The Navy submarine underwater launch test of a booster rocket is completed successfully.

1983

15 January The Central Committee issues orders awarding group first-class merit to Guided Missile Destroyer No 105. During the 12 years of construction for this ship, there was close cooperation between the entire crew of cadre and sailors and the research and production units. They were able to overcome various difficulties, safely sailing more than 50,000 nm to accomplish their extensive testing mission. This was an important contribution to the improvement of new types of guided missile destroyers.

20 January Persons, such as vice chairman of the Central Committee Military Commission Standing Committee Yang Shangkun, meet with attendees of both the Navy Party Committee 5th Session of the 5th Plenum and the Conference on the Navy Mission. Vice Premier Yang encouraged everyone to: "Be of one mind and one virtue as you struggle to unveil yet a new aspect of Navy construction."

24-28 January The Swedish Navy minelayer Carlskrona arrives in Shanghai for a visit.

11 February CPC Central Committee General Secretary Hu Yaobang is accompanied by Commander Liu Huaqing as they join with local organizations of the Yulin Base and affiliated Navy units to welcome in the new Spring. General Secretary Hu gazes out from the docks at cadre and sailors of the crews of torpedo boats, missile ships, seaward defense boats, hunter-killer ships, and frigate units, and writes to the Navy: "Build a modern conventional Navy."

9 March The Navy Equipment Verification Center is established, with Yu Miao [0151 8693] appointed as director and Yu Xia [0205 0204] as political commissar.

13-18 April The Pakistan Navy destroyer Tariq visits Shanghai.

22 April KMT Army Air Corps Fendui Leader Major Li Dawei [2621 1129 4850] flies his U-6A training craft (No 8018) back to the continent of his motherland. Li Dawei's aircraft lands on a reef at Feiluangang in Ningde County, Fujian Province. Navy speedboat units do a great deal of on-site security work there.

6-9 May The Canadian destroyers [as published] Terra Nova, Gastineau, and Restigouche and the supply ship Provider visit Shanghai.

4 June General Secretary Hu Yaobang is accompanied by foreign guests as he views the North China Sea Fleet Guided Missile Frigate No 519 and Guided Missile Destroyer No 109. General Secretary Hu writes to the Navy: "Pledge your lives to protecting the sea areas of our northern territory, so that any foe who might dare to attack will not live to see his home again."

7 August CPC Central Committee Politburo member and vice chairman of the Central Committee Military Commission Xu Xiangqian [1776 0686 0467] inspects Navy units stationed at Qinhuangdao. As Ice-Breaker C722 sets out to sea, Vice Chairman Xu writes to the Navy: "Struggle to build a modern Navy."

24 September General Secretary of the North Korean Labor Party Central Committee Kim Ilsung is accompanied by General Secretary Hu Yaobang as they view ship units from the North China Sea Lushun Base.

24-29 September The Navy holds an inaugural meeting for the Academic Military Research Committee; Science and Technology Committee; and Science, Culture, and Education Committee. The 3 committees are consulting organizations for the Navy party committee, and their members are largely older cadre who have retired from the 2nd and 3d lines and have practical experience.

9-13 October The Colombian Navy training ship Gloria pays a visit to Shanghai.

26 October PRC Chairman Li Xiannian inspects Navy ship units stationed in Fujian. On the 31st, Chairman Li rides aboard the Y787 to inspect Xiamen harbor.

11-25 November Commander Liu Huaqing leads a Navy delegation on a visit to Pakistan and Bangladesh.

1-8 December The Portuguese training ship Sagres arrives in Shanghai for a visit.

3 December The Navy party committee issues orders bestowing the designation "Model Cadre Who Selflessly Rescues Others" upon Zhang Weixing [1728 4850 2502]. Zhang was Deputy Boat Commander for Boat 9209 of the 3d Zhongdui, South China Sea Fleet 11th Speedboat Flotilla. On 11 April 1983, he died heroically while trying to save two members of the public who had gotten into trouble while swimming.

23 December The Navy issues orders bestowing the designation "Seven Brave Soldiers who Risked Danger on Behalf of the People" to seven martyrs: Zhang Xianting [1728 2009 1694], Jia Hongwei [6328 1347 0251], Shen Ganxiong [3088 1626 7160], Li Jianhai [2621 1696 3189], Wei Xingxiang [7614 2502 5046], Ha Zhiling [0761 1807 0407], and Su Dongzan [4792 2639 6363]. These 7 martyrs were cadre and soldiers at the South China Sea Fleet Training Base. On 9 September 1983, they heroically sacrificed their own lives in an attempt to save the lives and property of members of the public who had encountered difficulty during a surprise Force-9 typhoon.

1984

4 February Central Committee leaders, such as Wan Li and Hu Qili, inspect Navy ship units stationed at Weihai and ride aboard Ship 627 to Liugong Island to see cadre and troops of the training regiment.

29 February The Navy party committee produces the "Resolution Regarding Approval of Su Yanchang and Liu Dequan as Model Soldiers as the Navy Builds a Socialist Spiritual Culture." Su Yanchang [5685 1693 2490] was formerly office leader for the Mass Work Office of the Political Department, 1st Division, Navy Air Wing. Since retirement, he has ignored his frail health in order to ardently assist cadre and soldiers in the unit and civilian youth in gaining scientific knowledge. Liu Dequan [0491 1795 0356] is assistant regiment leader of the Second Training Regiment of the North China Sea Fleet. For more than 20 years, he has been learning from the example of Lei Feng, doing good wherever he goes, so that he has been praised by people as being a "living Lei Feng."

7 March There is a great fire at the Shijingzhuangfeng Sesame Stoving Plant in Guangzhou Municipality due to a break in the stove pipes. Undergraduate cadets of the 7th Group at the Navy Surface Vessel School join members of the public in bravely fighting the fire, by which action they save the People's property. The CPC Central Committee propaganda department and the regiment central committee praise the 7th Group as an Heroic Group.

21 March Central Committee Military Commission Chairman Deng Xiaoping issues orders bestowing the designation "Model Cadre Who Sacrificed Himself to the Cause of the Navy" upon Zhang Dawu [1728 6671 0124]. Zhang was originally Dadui Leader of the East China Sea Fleet Emergency Rescue Dadui. He had long thought of the sea as his home and had been part of nearly all major emergency rescue missions carried out by the Navy. He would appear wherever there was danger, wherever there was distress at sea. He died of illness in May 1982.

8 April On the Pacific, officers and men of the South China Sea Fleet Yulin Base Ship J506 victoriously carry out a mission in support of the test launch of a communications satellite. During the nearly-yearlong mission, Ship J506 crosses the Pacific 3 times, sailing a total of 15,000 nm over 125 days, and for which it is awarded a group second-class merit award.

5-10 May The French Navy Communications Frigate Berry arrives in Shanghai for a visit.

2 June The Navy Dalian Antiaircraft Artillery Reserve Division is founded.

20 June RENMIN RIBAO and JIEFANGJUN BAO publish the words of Central Committee leaders, such as Xu Xiangqian, Wu Lanfu, Yang Shangkun, and Zhang Aiping, as they summon CPC members to learn from Bu Fenggang. Bu Fenggang [0592 7685 0474] was a Navy sentry stationed at the Shenyang Military Mission Office. During the war years, he killed the enemy with ferocity, once achieving an award for extraordinary merit, and he was awarded the "Mao Zedong Medal" and the designation as "Hero of Singular Courage." After the nation had been liberated, he served at the Navy equipment line of battle until his last breath. During his daily work and in his ordinary life, he achieved "merit without arrogance, authority without conniving, and selflessness," for which he was praised as a model cadre for the Navy and as an outstanding party member. He died in 1983 from an illness.

13 July Premier Zhao Ziyang inspects the Navy Test Base, then rides aboard Submarine 0302 to view the harbor and nearby sea areas.

21 August The Navy issues orders bestowing the designation "Model Company for Training Skills of both Military and Local Use" upon the 6th Frigate Flotilla Guided Missile Technical Group. The Technical Group has developed the study of scientific cultural knowledge in an organized and planned way, including in its educational training plan the training of skills that are useful both in the military and in society, and it has greatly developed technology innovation activities, providing experience for training qualified personnel skilled in both spheres.

5-10 September The Australian destroyer tender Stalwart and the escort ships Stuart and Yarra arrive in Shanghai for a visit.

18-23 September The Navy holds an on-site conference in Zhoushan to exchange experience in studying scientific cultural knowledge and in training personnel in both military and civilian skills, during which time are summarized and disseminated the experience of the 6th Frigate Flotilla with personnel of dual skills. Yu Qiuli [0151 4428 6849], concurrently CPC Central Committee Politburo member, Central Committee Military Commission deputy secretary-general, and director of the General Political Department, appeared at the meeting, together with leaders from Zhejiang, Shanghai, and various units of all services and from the military academies. Director Yu wrote to the Navy: "Diligently study scientific cultural knowledge to build a modern Navy."

28 September The General Political Department bulletin recognizes Mou Hanzhang [3664 3352 4545] as an outstanding retired cadre. Mou was formerly director of the Logistics Department at the East China Sea Fleet Songhu Maritime District. Since he retired in 1967, he has seen thousands of patients in more than 10 provinces and municipalities and has cured more than 500 cases of infantile paralysis and pelvic and leg problems.

1 October At the magnificent review of troops during the 35th anniversary of the PRC, units of Navy cadets, sailors, and missiles are reviewed by party and state leaders. The missile units were made up of 16 large vehicles, towing 3 types of Navy missiles. Among them were the ballistic missile fired from a submerged submarine, multi-purpose anti-ship missiles, and coastal defense missiles.

21 October CPC Central Committee general secretary Hu Yaobang rides aboard Frigate 520, braving Force-5 and 6 winds for 13 hours to inspect oil platforms in the

Bohai. General Secretary Hu also writes to the Navy: "Love the sea, protect the ocean borders."

2-22 November Commander Liu Huaqing leads a Navy delegation on visits of friendship to the navies of England and Yugoslavia, visiting as well the navy of West Germany.

27 November CPC Central Committee Politburo member and executive chairman of the Chinese People's Political Consultative Conference Deng Yingchao [6772 4481 6389] inspects Navy ship units stationed at Xiamen.

30 November Navy Commander Liu Huaqing and Political Commissar Li Yaowen [2621 5069 2429] issue orders bestowing the designation "Model Medic who Scales the Heights of Medical Technology" to Cheng Guoliang [4453 0948 5328]. Cheng is Deputy Chief Medic at Navy Hospital 401. With 3 other medics from outside that hospital, he rejoined 352 fingers on 259 patients with severed fingers, of which 321 took, for a success rate of 91.2 percent, which is an advanced level internationally. They have made especially significant achievements in cases of transplanting severed fingers to forearm stumps to regain partial hand functions (that is, "remanufactured hands), rejoining fingers severed at the last joint, and rejoining the severed fingers of children, where they have successfully applied microscopic surgical techniques.

3 December The General Staff Headquarters, General Political Department, and General Reserves Department issue a communication praising the use of pacesetter troops by cadre of Ship 504 of the South China Sea Fleet, where they lead troops that had been lagging behind into the forefront. This ship has been called an essential advanced unit for all services.

1985

9 February Navy Commander Liu Huaqing and Political Commissar Li Yaowen issue orders bestowing the designation "Flight Safety Dadui" on the 1st Dadui of the Air Wing's 12th Regiment. Since its founding in November 1954, the 1st Dadui has flown more than 50,000 times, crossed 16 provinces, redeployed 27 times, and transshipped 4 times. They have flown safely for 30 years and have fully accomplished each combat and training mission.

22 February through 3 March Navy Deputy Commander Fu Jize [0265 4949 3419] leads a delegation to visit the Thai Navy.

20 November 1984 through 10 April 1985 A total of 308 officers and men, from the North China Sea Fleet Ship J121, the Navy Air Wing's Independent Air Wing Helicopter 179, and a navigation practice team, participate in China's first observation expedition to Antarctica. Having fully accomplished such tasks as ferrying, loading, aiding station erection, and conducting appropriate social exchange, and having safely traveled more than 22,900 nm, this expedition sets a new record in the history of China's naval navigation and opens new routes linking China with the South American continent.

4 May Sixty-four cadre and students of the Navy First Aviation Ground Maintenance School join the public to struggle with mountain torrents at Laoshan in Qingdao Municipality, where they rescue more than 200 endangered students and travelers. Student Shi Jian [4258 1696] heroically gives his life in the midst of danger. The Qingdao Municipal Committee and Municipal government bestow the designation "Model Group that Risked Danger to Save the People at Laoshan" upon the 6th, 7th, and 8th Groups of Navy First Aviation Ground Maintenance School.

22 July Navy Commander Liu Huaqing and Political Commissar Li Yaowen issue orders bestowing the designation "Model Communist Youth Group Member" upon Shi Jian.

22 August At an expanded Navy Party Committee meeting, Central Commitee Military Commission Standing Committee vice chairman Yang Shangkun says that "the construction of the Chinese Navy has been determined by the nature of our state. We do not subjugate other people, nor do we occupy other nations. The Navy is fundamentally a coastal defense force. The Navy must be built in accordance with this characteristic."

27 October through 5 November A squad of divers from the North China Sea Fleet Emergency Rescue Ship Dadui heroically saves 15 trapped miners. On 25 October, there is a flood at the Chaoyang coal mine near Jincheng in Shanxi Province, and miners who were at work became trapped in an 800-meter long tunnel at a depth of 107 meters. The diving squad risks dangers, such as an imminent cave-in, to pull their way through an air duct, going under water 16 times. They work a total of 54 hours and 50 minutes, submerged a total distance of 3,464 meters, to finally learn what has happened, and they send in food, which allows 15 of the miners to come up alive after 11 days of being trapped.

2-23 November Commander Liu Huaqing responds to invitations in making visits of friendship to France and the United States, where he visits some naval base facilities and naval ship and air units in those two countries.

16 November East China Sea Fleet Commander Nie Kuiju [5119 1145 5112] leads a Navy friendship visit formation made up of Guided Missile Destroyer 132 and General Provisions Ship X615, departing from the Wusong docks to make visits of friendship in response to invitations from Pakistan, Sri Lanka, and Bangladesh. This is the first time since its inception that the People's Navy has officially made visits out of country. The formation returns to China on 19 January 1986.

Morning of 31 December General Secretary Hu Yaobang, accompanied by Commander Liu Huaqing, et

al, goes to the Xisha Archipelago to see in the new year with soldiers in garrison units. In celebrating the new year with the Xisha officers and men, General Secretary Hu says: "Our fundamental state policy is that we want not an inch of the territory of any other nation, nor will we allow anyone to occupy an inch of our motherland; the Chinese people have never bullied any nation and have always opposed the bullying of small and weak nations by hegemonists." General Secretary Hu also writes to the Navy units stationed on Xisha: "Dare to struggle with these howling winds and fierce waves for the security of our country."

Appendix 2. A Chronological List of Navy, Fleet, Navy Air Wing, and Naval Academies Chief Leaders (1949-1985)

40050617A Beijing Dangdai Zhongguo Haijun (*China Today: The People's Navy*) in Chinese Oct 87 pp 720-723

[Text] (Listing of names is according to date position was assumed)

A. Navy

Commander: Xiao Jinguang; Ye Fei; Liu Huaqing

Political Commissar: Su Zhenhua; Wang Hongkun; Li Zuopeng; Du Yide; Ye Fei; Li Yaowen

Deputy Commander: Wang Hongkun; Luo Shunchu; Fang Qiang; Liu Daosheng; Zhou Xihan; Tao Yong; Zhao Qimin; Li Zuopeng; Wu Ruilin; Zhou Renjie; Su Zhenhua; Ma Zhongquan; Mei Jiasheng; Wang Wanlin; Kong Zhaonian; Gao Zhenjia; Yang Guoyu; Zheng Guozhong; Fu Jize; Nie Kuiju; Deng Zhaoxiang; Li Jing; Zhang Xusan; Zhang Lianzhong

Deputy Political Commissar: Liu Daosheng; Su Zhenhua; Fang Qiang; Du Yide; Zhang Xiuchuan; Lu Rencan; Wang Xin; Li Junchan; Fang Zhengping; Kang Zhiqiang; Wu Gang; Wei Jinshan

Chief-of-Staff: Luo Shunchu; Zhou Xihan; Zhang Xuesi; Pan Yan; Yang Guoyu; Ma Xinchun; An Liqun

Director of the Political Department: Liu Daosheng (concurrent); Su Zhenhua (concurrent); Yin Dezhang; Zhang Xiuchuan; Zhang Jingyi; Liu Juying; Wang Xin (concurrent); Deng Chubai; Li Junyan (concurrent); Liu Youfa; Tong Guorong

B. Fleets

North China Sea Fleet

Commander: Liu Changyi; Ma Zhongquan; Rao Shoukun; Yang Li; Su Jun; Ma Xinchun

Political Commissar: Ding Qiusheng; Lu Rencan; Yi Yaocai; Guo Bingkun; Kang Zhiqiang; Li Changru; Li Shitian

Deputy Commander: Yi Yaocai; Zhang Yuanpei; Deng Zhaoxiang; Liu Huaqing; Deng Longxiang; Pan Yan; Ma Zhongquan; Zhao Huichuan; Yang Li; Fu Jize; Lin Zhen; Liu Huiqing; Qu Zhenmou; Zhang Zhenchun; Pan Youhong; Zhang Shouqun; He Changyun; Zhu Hongxi

Deputy Political Commissar: Lu Rencan; Huang Zhongxue; Song Jinghua; Xin Guozhi; Liu Huiqing; Kang Zhiqiang; Zhou Zhixian; Du Xishu; Zhao Hongbo; Li Changru; Yan Yi; Shi Zicai; Zhang Mushui; He Changyun

East China Sea Fleet (including the Navy of the Huabei Military Region)

Commander: Zhang Aiping; Yuan Yelie; Tao Yong; Liu Haotian; Ma Long; Zheng Guozhong; Xie Zhenghao; Nie Kuiju

Political Commissar: Zhang Aiping (concurrent); Yuan Yelie; Zhao Qimin; Kang Zhiqiang; Liu Haotian; Yin Dezhang; Fang Zhengping; Huang Zhongxue; Zhang Wenhua

Deputy Commander: Yuan Yelie; Lin Zun; Gao Zhirong; Peng Deqing; Ma Long; Rao Shoukun; Zhou Renjie; Mei Jiasheng; Wang Xueqing; Gao Xizeng; Zhang Chaozhong; Xie Zhenghao; Han Zeng; Shen Zhendong; Li Wenmo; Kong Zhaonian; Wang Jiying; Chen Mingshan

Deputy Political Commissar: Zhao Qimin; Kang Zhiqiang; Su Qisheng; Zhou Zhixian; Song Xianzhang; Huang Zhongxue; Li Dongye; Kang Zhuang; Deng Chubai; Feng Da; Wang Junjie; Han Zeng; Wei Zhiguo

South China Sea Fleet (including the Navy of the Zhongnan Military Region)

Commander: Fang Qiang; Zhao Qimin; Wu Ruilin; Zhou Renjie; Zhang Yuanpei; Tan Zhigeng; Fu Jize; Zhang Chaozhong; Chen Mingshan

Political Commissar: Fang Qiang (concurrent); Zhao Qimin (concurrent); Fang Zhengping; Gui Shaobin; Yin Dezhang; Wang Xin; Zhang Haiyun

Deputy Commander: Zhou Renjie; Qi Yong; Zeng Sheng; Qi Anju; Ma Zhongquan; Huang Zhongcheng; Wang Quanzhen; Wang Zhengzhu; Luo Wenhua; Lai Guangzu; Tian Song; Zhang Xiaobing; Liu Moqing; Zhang Shouqun; Qu Zhenmou; Zhang Xianjun; Wang Zhenguo; Liu Xizhong

Deputy Political Commissar: Fang Zhengping; Gui Shaobin; Zhou Zhixian; Zhang Yongqian; Zhang Kuiyi; Wang Xin; Fu Lu; Nan Pingbo; Xin Guozhi; Zhou Shaoxun

C. Navy Air Wing

Commander: Dun Xingyun; Liu Daosheng (concurrent); Zeng Kelin; Li Jing (concurrent)

Political Commissar: Li Chengrui; Peng Lin; Jiang Xuebin; Xing Yongning

Deputy Commander: Zeng Kelin; Mei Jiasheng; Zhao Huichuan; Hu Pengfei; Yin Jian; Zhou Kelin; Yao Xuesen; Wang Wanlin; Li Jing; Lai Jinhua; Li Xuechang; Wang Chaoyu; Huang Decheng

Deputy Political Commissar: Li Keru; Bian Jiang; Jie Changtai; Fan Weigang; Dan Dade

D. Naval Academy

President: Fang Qiang (concurrent); Liu Daosheng (concurrent); Xie Liquan; Zhu Jun; Zhang Xusan; Tian Zhenhuan

Political Commissar: Fang Qiang (concurrent); Lei Yongtong; Kang Zhiqiang; Zuo Ai; Wang Xin; Li Gai

Vice President: Xie Liquan; Huang Zhongcheng; Zhu Jun; Lin Zun; Wang Xiao; Shao Zhen; Zuo Ai; Wang Qingchuan; Wang Yufeng; Wang Yingjie; Li Keming; Peng Yikun; Xu Shiping; Wang Shijun

Deputy Political Commissar: Lei Yongtong; Li Dongye; Wu Gang; Xiao Ping; Zhao Hongbo; Chen Fengwen; Li Donghai