China’s defense budget transparent: Finance Minister

Chinese Finance Minister Xiao Jie Tuesday shrugged off concerns over China’s military transparency, saying there was no opacity in the country’s defense budget. “Let me be very clear, there is no such thing as opacity in China’s military spending,” Xiao told a press conference on the sidelines of the country’s annual parliamentary session.

China’s defense budgets used to be included in a report on the draft central and local budgets submitted to lawmakers for review and approval during the National People’s Congress (NPC) session.

This year, however, the report available to media made no mention of the exact figure.

“We made some new changes in the way we compiled the files,” Xiao said.

The minister explained that the defense budget, along with the budgets for foreign affairs and public security, was included in a draft budget submitted to lawmakers.

A finance ministry official told Xinhua Monday that the defense budget this year would stand at 1.04 trillion yuan (about 152 billion U.S. dollars), up 7 percent year on year.

China to develop satellite-delivery rockets released from airplanes

China will develop a new generation of rockets launched from aircraft that can put satellites into space, according to Li Tongyu, the head of carrier rocket development at the China Academy of Launch Vehicle Technology.

Air-launched rockets can rapidly replace dysfunctional satellites or, in cases of disaster relief, quickly send up Earth observation satellites to assist in the effort, Li said.

Designers at the academy, which is the main developer of Chinese carrier rockets, have designed a model capable of sending a payload of about 100 kilograms into low Earth orbit and are ready to produce one if the government asks, he said. They plan to design a larger rocket that could carry 200 kg into orbit.

“The Y-20 strategic transport plane will be the carrier of these rockets. The jet will hold a rocket within its fuselage and release it at a certain altitude. The rocket will be ignited after it leaves the plane,” Li said.

Large satellites will still have to be put into orbit with conventional rockets, experts said.

Delivery of the Y-20 to the Chinese Air Force began in July. It is China’s first domestically developed heavy-lift transport plane and has a maximum takeoff weight of more than 200 metric tons and a maximum payload of about 66 tons, aviation experts said.

Solid-fuel rockets can be launched from planes much faster than land-based, liquid-fueled rockets, where preparation can take days, weeks or longer, in part because it takes so much time to pump in the fuel, experts said.

Each mission involving a solid-fuel rocket launched by a Y-20 would take only 12 hours of preparation to place a 200 kg satellite into a sun-synchronous orbit 700 km above Earth, according to estimates by Long Lehao, an academician of the Chinese Academy of Engineering, and other researchers at the China Academy of Launch Vehicle Technology. The estimates were in an article published in October in the Journal of Deep-Space Exploration.

Other advantages of such rockets are that they are flexible in deployment and use and do not need ground infrastructure, said Pang Zhihao, executive editor-in-chief of Space International magazine. They also are less susceptible to bad weather and launch costs are lower than those of ground-launched rockets, he added.

The United States undertook the world’s first air-launched space mission in 1990, in which a Pegasus rocket developed by the former Orbital Sciences Corp was launched from a refitted B-52 strategic bomber to send two small satellites into orbit. Since then, 43 Pegasus missions have been carried out, with the most recent in December.

Several US space companies, including Virgin Galactic and Generation Orbit Launch Services, are developing air-launched rockets.

Chinese designers have been quietly working on the concept for years. China Aerospace Science and Technology Corp, parent of Li’s academy, displayed a scale model of a winged, solid-propellant, air-launched rocket in 2006 at the Sixth China International Aviation and Aerospace Exhibition in Zhuhai, Guangdong province.

Water level of nation’s largest salt

lake rises

A tourist practices Yoga on the bank of Qinghai Lake as a shepherd watches in Qinghai province in October.[Photo/Xinhua]

The water level of China’s largest inland saltwater lake has risen over the past decade due to abundant rainfall and rising temperatures, according to a recent survey.

The average annual water level at Qinghai Lake’s hydrological station in Northwest China’s Qinghai province rose 1.66 meters over the past 10 years.

The rising water level is the result of increased precipitation and meltwater from nearby glaciers and highland snow, according to Dai Sheng, an engineer with the provincial climate center.

Average annual precipitation increased to 421.8 millimeters between 2005 and last year, from 358.8 millimeters between 1961 and 2004, Dai said, adding that an improved ecosystem and vegetation also helped maintain water in the Qinghai Lake basin.

The surface area of Qinghai Lake also expanded to 4,429.3 square kilometers in September, an increase of 169.7 sq km from the same period in 2004, according to a geographical survey in the province.

Qinghai Lake plays an important role in the ecological security of the Qinghai-Tibet Plateau. The lake had been shrinking since the 1950s, but the combined effects of conservation and changes in the regional climate helped

turn things around from 2005 onward.

Tibet to open world's highest super-long tunnel

The Mila Mount Tunnel on the Lhasa-Nyingchi Highway is expected to be opened in September, when it will become the world's highest super-long tunnel.

The tunnel is located at the junction of Lhasa and Nyingchi in the Tibet autonomous region at an average altitude of 4,740 meters above sea level, according to the Mila Mount Tunnel Project Headquarters.

As a key section of the Lhasa-Nyingchi Highway on the National Highway 318, the two lanes of the tunnel are 5,727 meters and 5,720 meters long respectively, according to the project headquarters.

Construction of the tunnel started in April 2015, and the project is about 70 percent complete to date, it said, adding that, hampered by the natural environment at high attitude, the construction process has encountered many obstacles.

"With a lack of oxygen and temperature lows of – 30 Celsius in winter, we require highly skilled workers," said Wang Liang, chief engineer of the project headquarters.

Wang said many workers suffered from attitude sickness during the tunnel's construction, and that much time and effort has been spent on recruiting qualified workers.

In order to overcome such difficulties, there are 15 oxygenators, an oxygen tank and five boilers on the project site, he added.

After it opens, traveling time between the cities of Lhasa and Nyingchi will be halved, Wang said.

"Driving from Lhasa to Nyingchi will take just three to four hours instead of about eight, and it will be much safer," Wang said.

"It will also have a positive impact on the social and economic development of these places, and it will make life much more convenient for local ethnic groups."

PLA patents declassified for civilian use

The People's Liberation Army has declassified and made public more than 2,300 national defense patents, PLA Daily reported on Sunday.

The National Defense Intellectual Property Rights Bureau of the Central Military Commission's Equipment Development Department has declassified about 3,000 national defense patents and opened 2,346 of them to the public, according to PLA Daily.

It said it is the first time the PLA has declassified and made public military patents since it began to register such patents in 1985. The measure is intended to facilitate the transfer of military technologies to civilian industries to boost the coordinated development of the civilian and defense sectors, the report said.

The patents can be viewed at weain.mil.cn□a website managed by the CMC Equipment Development Department's Procurement Information Service Center□in the "Patent and Achievement" section where a total of 101 pages of detailed patent entries are available for public viewing.

The first several pages checked by China Daily contain a wide range of patents, such as those relating to missiles, aircraft, communications, vehicles and tracking systems.

Each entry lists details of the patent, including its designated code, the dates of its submission and approval, its inventor and his or her employer, its function and the patent's agent and its legal status.

PLA Daily said that previously, it was difficult for defense patents, which are generally classified and not available for public searching like those for civilian use, to be transferred to civilian users because of the absence of related policies and poor communication between the PLA and civilian sectors.

It said that in 2015, the military started to organize patent holders to review their patents and determine whether the patents could be declassified.

The bureau plans to establish regulations on the confidentiality and declassification of national defense patents, pledging to declassify and publish patents on a regular basis, PLA Daily reported, saying these measures will help to make good use of defense patents and to nurture innovation in the development of weapons and equipment.

A defense technology industry observer in Beijing, who wished to be identified as Wu, said that opening suitable defense patents to the public benefits businesses, as they can use these patents to save on their research spending.

“Military and defense contractors can also save research and development funds, because in the past, many defense technology researchers had no access to patent information that was submitted by other researchers, which led to them conducting research that had already been done,” Wu said.

“Now they can check with patent information before embarking on a new project, which will save money for the PLA and their employer,” he said.