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The Defence Industry of Japan – An industry for self-defense forces that are not actually allowed to be armed forces

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The objective of this essay on the defence industry of Japan is to analyze how Japan, with its industrial potential, equips its armed forces with domestically produced weapons and weapon systems as much as possible. Furthermore, it provides an insight into how government agencies procure these goods based on current legislation and which mechanisms prevent corruption in arms procurement.

Due to the increasingly tense security situation in East Asia, Japan has taken steps to revitalize its defence industry base, but much remains to be accomplished before it can reach the goal of building a vibrant domestic defense industrial base. The government is doing a lot to achieve this, for example Defense Technology Guidelines 2023, a New Defence Industry Law and the Need to Strengthen the Defense Technology Base have been decided. Japan has a substantial domestic defence industrial base with world leading technological capabilities within wider industry. International Security Industry Council of Japan (ISIC Japan), a non-governmental organization and platform of Japanese defense companies, is working with Japanese and foreign industry associations to support and expand interaction with Japanese defense companies. The main goals of ISIC Japan are to promote business-to-business collaboration and the integration of local contactors with the global supply chain to strengthen both Japanese and allied industrial defense capabilities.

KEYWORDS: Japan, Big Ten, Defence Industry, New Defence Industry Law

Japán védelmi ipara – Az önvédelmi erők iparága, amelyek valójában nem lehetnek fegyveres erők

A japán védelmi iparról szóló írás célja annak elemzése, hogy Japán ipari potenciáljával hogyan szereli fel fegyveres erőit a lehető legnagyobb mértékben belföldön gyártott fegyverekkel és fegyverrendszerekkel. Továbbá betekintést nyújt abba, hogy a kormányzati szervek hogyan szerzik be ezeket az árukat a jelenlegi jogszabályok alapján, és milyen mechanizmusok akadályozzák meg a korrupciót a fegyverbeszerzésekben.

Az egyre feszültebb kelet-ázsiai biztonsági helyzet miatt Japán lépéseket tett védelmi ipari bázisának újjáélesztésére, de még sok a tennivaló, mielőtt elérhetné a hazai védelmi ipari bázis kiépítésének célját. A kormány sokat tesz ennek elérése érdekében, példaként említhető a 2023-as Védelmi Technológiai Irányelvek, az új Védelmi Ipari Törvény és a Védelmi Technológiai Bázis megerősítésének szükségességéről szóló döntés. Japán jelentős hazai védelmi ipari bázissal rendelkezik, amely a szélesebb iparágon belül világelső technológiai képességekkel rendelkezik. A Japán Nemzetközi Biztonsági Ipari Tanács (ISIC Japan), a japán védelmi vállalatok nem kormányzati szervezete és platformja, japán és külföldi ipari szövetségekkel együttműködve támogatja és bővíti a japán védelmi vállalatokkal való interakciót. Az ISIC Japan fő céljai a vállalkozások közötti együttműködés előmozdítása és a helyi szerződéses partnerek integrálása a globális ellátási láncba, mind a japán, mind a szövetséges ipari védelmi képességek megerősítése érdekében.

KULCSSZAVAK: Japán, a „Nagy Tíz”, védelmi ipar, új védelmi ipari törvény

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Introduction

More than 9,000 kilometers away from the heart of Europe, Central Europeans don't really hear much about the saber-rattling in the Far East, except that, for example, Hungary's major media, whenever they have some print space or a few minutes of airtime to spare, report on the demonstration of power by the People's Republic of China against Taiwan and Japan. Japan and like its former ally in World War II and loser of this war is not a global military heavyweight, but has earned itself a leading position in the global economy through its economic diligence. Unlike the economic giants USA and the People's Republic of China, Japan's security and military significance is limited to regional South and Southeast Asia.

When asked about Japan, the vast majority of Europeans only have clichés at the ready. The excellent Japanese food, the excellent Japanese cars, the Japanese consumer electronics, and even the products of the robotics industry are well known here. The lifestyle, with its strong sense of duty and consideration for one's fellow human beings, is also well known, often causing astonishment that such a thing is even possible in a democracy. Furthermore, Japan is repeatedly cited as the country that is not as open to migration as, for example, Germany and Austria. Japan is closely monitoring developments in Europe¹ and will draw its own conclusions from the clashes between migrants and security forces, for example in Vienna's tenth district and in many German larger cities.

Following the return of the Ryukyu Islands and Bonin Island in 1972, Japan has an area of 377,975 km² and its exclusive economic zone covers 4,479,388 km², making it the eighth-largest in the world. This zone, which begins 200 nautical miles off the coast of Japan, grants the country exclusive rights to explore and exploit resources such as fishing and minerals. The EEZ is also important for Japan's energy supply, particularly with regard to the development of offshore wind farms. The Senkaku Islands are also included in this exclusive economic zone. The 127 million Japanese are considered one of the most homogeneous and endogamous peoples of humanity.

Japan lay devastated after the Pacific War, and it took decades before Japan could reach a mutual understanding with its former wartime enemies; even today, there can be no talk of reconciliation. The new Japanese constitution was based on a draft by the occupying powers. It entered into force on May 3, 1947. One point of the constitution that remains controversial today is Article 9: The Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as a means of settling international disputes.² This article further stipulates that Japan may not maintain land, naval, or air forces, or any other means of waging war. Article 9 is a thorn in the side of right-wing Japanese politicians, and their goal is to amend or even abolish it.

Although Japan was completely demilitarized after World War II, a turning point came with the outbreak of the Korean War. When a large portion of the occupation troops were relocated to Korea after the start of the Korean War, the USA demanded the rebuilding of Japanese armed forces due to the new situation in East Asia. As a compromise, police reserve

¹ Földi et al. 2015. and Padányi 2015.

² Siposné Kecskeméthy 2014.

units were initially established, and Japan formed a 75,000-strong National Police Reserve to support the regular police in cases of civil unrest. After regaining sovereignty, the enactment of the "Self-Defense Force" Act in 1954 transformed the National Police Reserve into the Self-Defense Force. The Self-Defense Force is an all-volunteer force based on the US model. According to the 2024 Defense White Paper, the Self-Defense Forces comprise over 242,000 active personnel (soldiers: 134,000 Army, 44,000 Air Force, 43,000 Navy; administrative officers: 21,000) and 61,000 trained reserves. The current defense budget for 2025 is approximately € 50 billion.

Defense Technology Guidelines 2023, a New Defence Industry Law and the Need to Strengthen the Defense Technology Base

The Ministry of Defense has formulated the Defense Technology Guidelines 2023 as a guideline for the Ministry of Defense to embody the policy of strengthening the defense technology base and to promote various initiatives in an integrated and vigorous manner. Based on this guideline, we will promote efforts to strengthen our foundation with the goal of continuing to protect Japan with technology in the future.³

A Japanese strengthened the country's defense industrial by law. The law, titled the "Defense Production Infrastructure Reinforcement Act", came into effect on 1 October 2023 and was proposed in June in line with defence policies introduced by the government at the end of 2022. The law replaces the Strategy on Defense Production and Technological Bases, which was introduced in 2014. It allows Japan to design, develop, and produce the Type 16 mobile combat vehicle built by Japan's Heavy Industries. The Ministry of Defense stated that the new law, which allows the state to take control of failing defense companies, is part of Japan's broader efforts to respond to growing regional security threats. The ministry also recognized the need to secure the necessary budget for enforcement and support the defense industry in implementing the law. While the ministry did not disclose how much money would be needed to implement the new law, Japan's 2024 defense budget allocated nearly JPY 98 billion (USD 656 million) to "strengthen the defense production base." How the law can influence the technological base for defense equipment production can be explained with a few examples: One important provision of the law is to allow the Japanese government to acquire manufacturers of unidentified "designated defense equipment" if certain conditions are met. These conditions include the company being unable to continue producing equipment deemed important to the Japan Self-Defense Forces (JSDF) due to financial difficulties. This provision of the law is a direct response to several defense companies in Japan that have ceased operations due to a lack of funds. Under such circumstances, the new law also allows the government to outsource the production of the necessary defense equipment to other companies. Other key provisions of the law allow local companies to access loans to finance and support defense production projects. Other provisions aim to increase the confidentiality of defense contracts and promote supply chain diversification and streamline manufacturing processes. The law also allows for the provision of funding to local companies if they are

³ https://www.mod.go.jp/atla/en/policy/policy_guideline.html

required to update the design or specifications of defense equipment ordered by international customers.⁴

Japan's defense industry is responsible for every phase of the equipment life cycle (research, development, production, maintenance and servicing, delivery, decommissioning, etc.), and equipment and the defense industry are inextricably linked. The Defense Production Base Enhancement Act was enacted and enforced, a law designed to take the necessary measures to maintain and strengthen the defense industry's ability to produce advanced equipment and ensure a high mobility rate.

Based on the law, the Ministry of Defense has published a fundamental policy. Based on this fundamental policy, in addition to the measures stipulated in the law, we will promote initiatives to strengthen the foundation, such as revitalizing the defense industry, building a resilient supply chain, and strengthening the preservation of the defense industry.

To obtain the necessary equipment for a new way of fighting, it is crucial to utilize Japanese technology. The creation of science, technology, and innovation based on Japan's advanced technological capabilities is the source of Japan's economic and social development and the key element of Japan's comprehensive national strength in terms of national security. Furthermore, the active utilization of the advanced technological capabilities of the public and private sectors that Japan has built up over many years in the field of security, regardless of conventional thinking, is an essential activity for strengthening Japan's defense system.

Due to the fact that the equipment cooperation spans more than half a century from conception to decommissioning, the Defense Equipment Agency enhances the capabilities of each other's armed forces and maintains and strengthens medium to long-term relations with each other by enhancing efforts in defense equipment and technical cooperation, including defense equipment transfer and international joint development.

For example, Japan announced the start of joint development of a glide-guided interceptor (GPI) missile with the United States, initiated joint Japan-US research on AI for unmanned aerial vehicles, signed an Arrangement on Research, Development, Testing, and Evaluation Projects with Australia, and initiated joint research on autonomous underwater unmanned aerial vehicles. Two warning and control radars from one manufacturer were delivered to the Philippines, marking the first overseas transfer of finished equipment from Japan (as of March 2025). In fiscal year 2024, joint Japan-US research on high-power microwave systems began, and the Japan-Australia Agreement on Research, Development, Testing, and Evaluation Projects was signed.

To ensure Japan's future air superiority, it is essential that Japan take the lead in developing next-generation fighter aircraft capable of a style of fighting unmatched by any other country, making modifications to enhance capabilities in a timely and appropriate manner, and maintaining a domestic base capable of ensuring a high degree of immediacy. The Ministry of Defense, together with the United Kingdom and Italy, will combine the technologies of the three countries to develop superior fighter aircraft capable of ensuring future air superiority while sharing costs and risks.

⁴ https://www.mod.go.jp/en/images/guideline_pamph_english.pdf and <https://www.janes.com/osint-insights/defence-news/industry/japan-enacts-new-defence-industry-law>
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There have been repeated scandals in Japan regarding defense procurement. I'm just reminded of the Siemens⁵ or the Lockheed scandal.⁶ Capabilities of the Japanese Arms Industry. Due to limited space, the interested reader is requested to consult the sources for the course of these scandals. Japan is generally among the least corrupt countries in the world. Japan scored 71 in Transparency International's 2024 Corruption Perceptions Index, ranking 20th out of 180 countries assessed.⁷ Today, the Acquisition, Technology & Logistics Agency (ATLA), an agency established under the Japanese Ministry of Defense, handles project management, technology management, research and development, and procurement of defense equipment for the Japan Self-Defense Forces. One of the important goals of the ATLA is to improve fairness and transparency concerning acquisition of defense equipment, inspection and audit functions are strengthened through multilayered internal and external check in terms of measures to ensure fairness in contract and reinforcement of examination functions.⁸

The Defence Industrial Base in Japan

The main players of the Defence Industrial Base in Japan are organized in the International Security Industry Council of Japan (ISIC Japan). The mission of the ISIC is to promote industry collaboration to enhance the security of Japan and the Indo Pacific region. The Council will assist US and other global defense companies in finding supply chain and development partners in Japan. ISIC Japan is a non-profit corporation registered in Tokyo to promote business-to-business collaboration between Japanese industry and global defense companies in like-minded countries. It was established as a non-profit corporation in 2019. This organization consists of an Executive Board which oversees management and operations. Purpose is to foster relationships between stakeholders – corporates, government and NGOs, military and academia. Objective is to strengthen Japan's defense industrial base through international cooperation.⁹ ISIC Japan will foster mutually beneficial industry cooperation, in support of the security objectives of the governments of Japan and other friendly governments, to maintain peace and stability in the Indo Pacific region.

Much of the equipment Japan procures will be built by Japan's highly capable defence industrial base. US industry will continue to dominate the market in terms of Japan's military imports while European companies have gained some successes in recent years. Japan maintains an extremely efficient arms industry capable of providing all services with a large portion of the weapons and weapon systems they require domestically, including through licensed production. Reason enough to take a look behind the scenes at these companies and discover how dependent they are on foreign production for individual weapons and weapon systems. The table: Foreign Dependence of the Japanese Arms Industry provides some insight into this.

⁵ https://en.wikipedia.org/wiki/Siemens_scandal

⁶ https://en.wikipedia.org/wiki/Lockheed_bribery_scandals

⁷ <https://www.transparency.org/en/cpi/2024>

⁸ https://www.mod.go.jp/atla/en/soubichou_gaiyou.html

⁹ <https://isic-japan.org/who-we-are/#our-neighborhood>

Table 1.
Foreign Dependencies of the Japanese Armed Forces Industry
 (Source: Author's Own Research)

Dependencies Armed Forces or Cross-Sectional Issue	Capabilities fully available in Japan	Capabilities for full licensed production available	Only limited capabilities for licensed production available	Currently no capabilities available in Japan
Land Systems	Development to Series Production			
Air Systems Development	Development to Series Production of Small to Medium Combat Aircraft as well as	Weapon Systems and Components Licensed Production of Certain Components		Entire Development of Latest- Generation Combat Aircraft Propulsion Units/ Aircraft Engines
Naval Systems	Development to Series Production of Almost All Surface and Underwater Vessels		Advanced Technology in Sea-Based Weapon Systems and Weapon Integration	
C4ISR Electro- Optical Systems	Naval Vessel Sensors Surveillance Systems	Communication Systems Radar Systems UAV Systems		

Arms Export of Japan

On April 1, 2014, the total ban on arms exports was ended by the government of Prime Minister Shinzo Abe under the Three Principles on Arms Exports to the Three Principles on Defense Equipment Transfers according to the guidelines of the National Security Strategy adopted on December 17, 2013. Under the Three Principles, "arms" exports to the following countries or regions shall not be permitted: (1) communist bloc countries, (2) countries subject to "arms" exports embargo under the United Nations Security Council's resolutions, and (3) countries involved in or likely to be involved in international conflicts.

The market-dominating “Great TEN”

The Japanese economy is dominated by so-called keiretsu, a set of companies with interlocking business relationships and shareholdings. It rose up to replace the zaibatsu system that was dissolved in the occupation of Japan following the Second World War. Keiretsu can best be defined as an economic organization with a unified corporate strategy, a "house bank" that is usually the primary lender, a general trading house that is contracted for domestic and international trade, and strong sense of belonging. Important keiretsu are Mitsui, Mitsubishi, Sumitomo, Kawasaki, Sanwa. Dai-Ichi Kangyō, Toyota, Nissan, Honda, Isuzu, Subaru, Hitachi, Tōshiba, Sanyo, Panasonic und Sony. Many of these companies also produced a part of the armored goods.

ATLA periodically publishes a list of completed arms deals. The latest release included the 10 largest suppliers in terms of financial volume. If you look at this table and calculate the market power of these companies, you have to realize that 10 companies handle around 64 percent of all arms deals with the ATLA, which is two-thirds.

Table 2.

The Top 10 largest Ministry of Defence contractors in Fiscal Year 2021, by monetary size
(Source: Overview of Central Procurement [in Japanese] ATLA)

<i>Rank</i>	<i>Company</i>	<i>US (million)</i>	<i>% of Total</i>
1	Mitsubishi Heavy Industries	459	25,5
2	Kawasaki Heavy Industries	207	11.5
3	Mitsubishi Electric	96	5,4
4	Japan Electric	90	5.0
5	Fujitsu	76	4,2
6	Toshiba Infra Systems	66	3,7
7	IHI	57	3,2
8	Subaru	42	2,3
9	Hitachi	34	1,9
10	Oki Electric Industry	28	1,5

Selected companies of the defense industry and their most important manufactured products – The Great “Ten”

Based on data from Teikoku Databank,¹⁰ a Japanese credit research firm, there were approximately 4,395 companies in Japan’s defense industry in 2022. An estimated number of workers employed in this sector of the Japanese industry is not available. Many of these companies are small and medium-sized enterprises, which mainly operate as suppliers for large companies.

¹⁰ <https://www.tdb.co.jp/report/industry/20250731-defense-industry/>

Mitsubishi Heavy Industries (MHI)

Mitsubishi was founded by the samurai Yatarō Iwasaki in 1870. Mitsubishi (Japanese 三菱, derived from the Japanese words “mitsu” and “hishi”, which literally means “three diamonds”). With a profit of 3,3 bio.US\$, in 2023 Mitsubishi ranked 35th in a ranking of the 100 most successful defense companies worldwide, published annually by DefenseNews.¹¹ US based Lockheed leads the ranking with profits of US\$ 63 billion. Among the top 20 companies are ten US companies, four from China, two from France, one each from Great Britain, Italy, and Germany, as well as Airbus, a European multinational.

Utilizing its unparalleled technologies developed over decades of extensive research, MHI Group has manufactured a variety of armament goods for the Ministry of Defense, contributing to the defense of Japan. MHI maintains production facilities for defense equipment in Nagasaki, Tamano, Yokohama, and Kobe for naval shipbuilding, in Nagoya for aerospace, and in Sagami-hara for heavy land systems.

The most well-known weapons and weapon systems that Mitsubishi developed and produced are the Type 10 Main Battle Tank, Type 16 Mobile Combat Vehicle, Type 11 Tank Recovery Vehicles, Heavy Wheeled Recovery; Frigate: MOGAMI – Class Destroyer, ASAHI – CLASS Submarine. Rescue Ships: CHIYODA, Patrol Vessels: MIYAKO, TAIGEI-Class Submarines, Undersea & Shipboard Systems: TYPE 12 LIGHTWEIGHT TORPEDO, TYPE 07 VERTICAL LAUNCHING ANTI-SUBMARINE ROCKET, OZZ-5 AUTONOMOUS Underwater Vehicle for MCM Submersible “ROV” Unmanned Seabed Research & Observation; F-2 Fighter Plane, F-15J Fighter Plane, F-4EJ Fighter Plane, SH-60KUH-60J/JASH-60J, TS1engineTJM3; PATRIOTAAM-5ASM-2Surface-to-ship missile system: Type 12 surface-to-ship missile and Cybersecurity solution for industrial control systems.

Kawasaki Heavy Industries (KHI)

Kawasaki was founded by the Shōzō Kawasaki in 1896. With a profit of approx. 1 bio.US\$, in 2023 Kawasaki ranked 72th in a ranking of the 100 most successful defense companies worldwide.

KHI has manufactured a variety of armament goods for the Ministry of Defense, contributing to the defense of Japan. KHI maintains production facilities for defense equipment in Nagoya and Kamigahara airplanes and helicopters as well as in Kobe for naval shipbuilding.

The most well-known weapons and weapon systems that Kawasaki developed and produced and reproduced under license are Submarines, aircraft: C-2 Transporter, P-1 Anti-submarine patrol aircraft, MCH-101 (Leonardo) and CH-47 (Boeing) Transport-Helicopter, OH-1 Observation-Helicopter, H-145 (Airbus) light Transport-Helicopter. KHI also produces the T-4 Training Aircraft which were used by aerobatic demonstration team of the Japan Air Self-Defense Force, called “Blue Impulse”.

¹¹ <https://people.defensenews.com/top-100>

Mitsubishi Electric

Mitsubishi Electric is a leading defense manufacturer providing equipment to the Japanese Ministry of Defense. In 2020, Mitsubishi Electric became the first Japanese company to successfully export defense equipment to an overseas user. (<https://www.mitsubishielectric.com/defense/capabilities/index.html>) Mitsubishi Electric develops and manufactures various air defense systems such as sensors and missiles and the company primarily supplies stationary and mobile ground and ship-based radar equipment. It also develops anti-drone systems. Other business areas include space technology and satellites, network and communication systems, C4I systems and electronic warfare systems. End of 2022, Mitsubishi Electric Corporation announced that the company will work closely with Japan Ministry of Defense as well as UK and Italian companies to help strengthen Japan's security and defense industrial base with innovative technologies, responding to a joint statement by the prime ministers of Japan, UK and Italy on December 9 that the three countries will begin developing next-generation fighter aircraft under the Future Fighter Program.

Japan Electric or Nippon Electric Company (NEC)

NEC is a Japanese multinational information technology and electronics corporation. (<https://jpn.nec.com/index.html>). Nippon Electric was founded in 1898. The most well-known weapons and weapon systems that NEC developed and produced are J/TPS-102 Self-propelled ground-based early warning 3D radar for the Ground-Self-Defence-Forces (JGSDF), Mobile TACAN has the equivalent performance of xed TACAN and can be transported by large trucks, cargo aircraft or helicopter. Mobile RAPCON provides a radar air traf c control service that can be useful when ATC system is inoperative due to disasters, unexpected trouble. Broadband multipurpose radio system (JGSDF), Advanced Combat Infantry Equipment System [ACIES] (JSDF), Major subcontractor Howa rifle system (JSDF). NEC has several plants, but the main production and development is handled in the Kakegawa plant, Fukushima plant, Yonezawa plant, Nasu plant, Sagami-hara plant and Kofu plant.

Fujitsu

Fujitsu is a Japanese multinational information and communications technology equipment and services corporation, which was established in 1935. <https://global.fujitsu/ja-jp>. Fujitsu is the third Japanese company to be among the top 100 and ranks 98th. Fujitsu Defense & National Security Co., Ltd. (FDNS) supports Japan's security by developing and building information and communications systems for the Ministry of Defense and the Self-Defense Forces, supporting defense-related electronic equipment and information and communications systems, and conducting research and development in security and sensor systems.

Toshiba

Toshiba Corporation is a Japanese multinational electronics company. <https://www.global.toshiba/ww/top.html>. Toshiba's roots go back to a small shop and factory

in Ginza's "brick town," founded in 1875, and Hakunetsu-sha & Co., Ltd., founded in 1890. Hisashige Tanaka, nicknamed *karakuri giemon*; the genius of mechanical wonders, was one of Japan's greatest inventors. Ichisuke Fujioka, a wizard with electricity, was known as the Japanese Edison. The businesses launched by these two giants later came together to form the Toshiba of today. Their restless curiosity and passion still live on in Toshiba's heart and soul. Since 1937, Toshiba has been producing radar systems, weather radar systems, rechargeable lithium-ion battery (SCiB), and other innovative technologies that have contributed to a safer, more secure, reliable world.

We have delivered advanced radar systems for naval, airborne, ground surveillance, air traffic control and weather radar applications. We are also tackling new challenges. Consequently, Toshiba has developed new drone detection systems and highly safe rechargeable lithium-ion batteries (SCiB). Toshiba is also leveraging AI solutions to develop defense and electronic systems of the future.

IHI

IHI Corporation, formerly known as Ishikawajima-Harima Heavy Industries Co., Ltd. is a Japanese engineering corporation that produces and offers ships, space launch vehicles, aircraft engines, marine diesel engines, gas turbines, gas engines, railway systems, turbochargers for automobiles, plant engineering, industrial machinery, power station boilers and other facilities, suspension bridges and other structures. <https://www.ihl.co.jp/>. The enterprise dates back to 1853 when the Ishikawajima Shipyard was established by the Mito Domain under order from the Edo Shogunate. Shipbuilding was the founding activity of Ishikawajima. In the naval shipyards Tokyo, Yokohama and Uruga HIS built naval vessels for the JMSDF, for example in Yokohama the new light aircraft carrier of the Izumo-Class.

Subaru

Subaru Corporation, formerly Fuji Heavy Industries, is a Japanese multinational corporation and conglomerate primarily involved in both terrestrial and aerospace transportation manufacturing. <https://www.subaru.co.jp/en/outline/about/aerospace/>. Fuji Heavy Industries traces its roots to the Nakajima Aircraft Company, a leading supplier of airplanes to the Japanese government during World War II. At the end of World War II, Nakajima was broken up by the Allied Occupation government under *keiretsu* legislation, and by 1950 part of the separated operation was already known as Fuji Heavy Industries. It is best known for its line of Subaru automobiles but the aerospace division, located in Utsunomiya and Handa is a contractor for the Japan Defense Agency and markets and sells both commercial and defense-related aircraft, helicopters and target drones. It will also be responsible for providing maintenance for the Bell-Boeing V-22 Osprey tilt rotor aircraft. Subaru produces the primary military trainer Fuji T-7/T-3 Kai and Subaru has established a mass production line at Utsunomiya Plant to provide UH-2 utility helicopters to the Japan Ground Self-Defense Force, which is used for air transport as well as lifesaving, evacuation, and firefighting during disasters, plus other missions to ensure the safety and security of the people of Japan.

Hitachi

Hitachi is a Japanese multinational conglomerate founded in 1910 by Namihei Odaira. The company is active in various industries, including digital systems, power and renewable energy, railway systems, healthcare products, and financial systems. (<https://www.hitachi.com/en/>). Minesweeper sonar system, acoustic minesweeper, loading and lifting equipment, side scan sonar, automatic degaussing control system, etc., Submarine information processing system, torpedo defense system, degaussing automatic control system, etc., USW System, Sonar, Torpedo Defense System, Escort Ship Anomaly Prediction System, etc. Type 99 ammunition feeding vehicle Type 96 self-propelled 120mm mortar Facility work platform (body part) Type 92 pontoon bridge Type 07 Mobile Support Bridge Data Link System Anti-submarine aviation communication system Communication Buffer System Communication Secret Communication System Patriot Components Airborne power supply We provide a variety of solutions for cyber operations such as cyberspace command and cyber response, focusing on cyber intelligence necessary for cyber warfare. We contribute to strengthening and improving cyber warfare capabilities by providing total solutions tailored to operations, such as the collection and analysis of sensor information and threat information targeting IoT-based assets such as equipment and base infrastructure, as well as cyber COPs that provide timely analysis results to commanders and operators, as well as information systems. Geospatial Information Creation Management System Command and control system Marine Information System Weather Information System Training and exercise equipment Image Analysis and Analysis System Public Information Analysis System All-Source Analysis System Integrated Management and Information Sharing Platform System for Heterogeneous Information Satellite Imagery Data Satellite Imagery Reception Service Various satellite image analysis services.

Oki Electric Industry

Oki Electric Industry is a Japanese information and communications technology company. The company was founded by Kibataro Oki in 1881. OKI provides high-quality display systems that are used under the unfavorable conditions such as nighttime, direct sunlight, and so on, and provides fuel quantity management system that can accurately calculate the capacity of fuel using aircraft attitude information.

Other defence related companies

ShinMaywa

ShinMaywa Industries is a Japanese industrial conglomerate descended from the Kawanishi Aircraft Company, founded as Shin Meiwa Industries in 1949.¹² Kawanishi is best known for its seaplanes, such as the Kawanishi H6K and H8K flying boats. ShinMaywa, headquartered in Takarazuka, Hyōgo Prefecture, is best known for its seaplanes, such as the Shin Meiwa US-1A amphibian, and its upgraded form, the ShinMaywa US-2. The US-2 is operated as STOL

¹² <https://www.shinmaywa.co.jp/english/products/aircraft/amphibian/>
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(short take-off and landing) search and rescue amphibian by JMSDF of Japan Ministry of Defense.

Japan Steel Works

Japan Steel Works is a steel manufacturer founded in Muroran, Hokkaidō in 1907.¹³ Japan Steel Works was set up with investment from British firms Vickers, Armstrong Whitworth and Mitsui and Japan Steel works have great experience in making large gun barrels. During World War II, they manufactured what was then the world's largest gun barrel to be fitted on the battleship Yamato. Japan Steel Works is involved in the development of the Type 10 battle tank, Type 99 155 mm self-propelled howitzer, Type 19 Self-Propelled Howitzer (Wheeled) 155mm Self-Propelled Howitzer, MK45 Mod4 5 inch (127mm) Naval Gun and 30mm Gun for Japan Coast Guard.

Howa Machinery

Howa Machinery is a Japanese machinery manufacturer known internationally for their production of military and civilian firearms founded in 1907.¹⁴ Howa also designed and manufactured firearms for JGSDF use, including the following types (models): Howa Type 64, Howa Type 89, AR-18 (licensed production for Armalite Inc.), Howa Type HR-13, Howa Type 96, Howa Type 20, Howa 84 mm Recoilless Rifle (licensed copy of the Swedish Carl Gustaf 84 mm Recoilless Rifle), 12.7mm Spotting rifle mount for Type 60 recoilless rifles, Mortar mount for Type 96 mortar carrier.

Asahi-Seiki Manufacturing

Asahi-Seiki Manufacturing was established in August 1953 as Asahi Okuma Industry Co., Ltd. and started manufacturing various firearms and ammunition for small arms.¹⁵

Daikin Industries

Daikin Industries is a Japanese multinational conglomerate company headquartered in Osaka and founded in 1924. Daikin is the world's largest air conditioner manufacturer. <https://www.daikin.com/products>. Daikin Industries is the largest manufacturer of ammunition in Japan. It is not widely known that Daikin is prime manufacturer of 120mm APFSDS shells and 155mm artillery shells.

NOF

Another key player in explosives and propulsion, which are essential for ammunition, are NOF Corporation. NOF Corporation is Japan's leading oleochemicals group, producing a highly diversified range of products derived from oilseeds and petrochemicals. The NOF Group was founded in 1937, but the company's core business has a long history with roots

¹³ https://www.jsw.co.jp/en/product/business/ordnance_business/

¹⁴ <https://www.howa.co.jp/en/products/firer/history.html>

¹⁵ <https://www.asahiseiki-mfg.co.jp/>

reaching back to the Meiji Era.¹⁶ The explosives and propulsion business has created highly functional product lines with excellent R&D activity and production expertise and application technology with the highest priority of safety. At present, the NOF Group, as a rare general explosives maker in the world, establishes a firm business foundation and expands the businesses for explosives for industrial use, explosives for defense and space development use, and articles for the public welfare.

Komatsu

Komatsu is a Japanese multinational corporation that manufactures construction, mining, forestry and military heavy equipment, as well as diesel engines and industrial equipment like press machines, lasers and thermoelectric generators. Takeuchi Mining Industry established Komatsu Iron Works to manufacture machine tools and mining equipment for in-house use in 1917. The Komatsu light armored vehicle is a Japanese military vehicle first produced in 2002. Currently used exclusively by the JSDF.¹⁷

Hino

Hino Motors is a Japanese manufacturer of commercial vehicles and diesel engines. The company was established in 1942. Hino has four plants in Japan: Hino, Hamura, Nitta and Koga. The Hino Ranger has been introduced to the JSDF.¹⁸

Isuzu

Isuzu Motors is a Japanese multinational automobile manufacturer. Its principal activity is the production, marketing and sale of Isuzu commercial vehicles and diesel engines founded in 1916 and named “ISUZU” in 1934. Since 1974 Isuzu has been delivering all-wheel-drive trucks to the JSDF.¹⁹

Sumitomo Group

The Sumitomo Group is a group of autonomous Japanese multinational companies. The Sumitomo Group traces its roots to a bookshop in Kyoto founded circa 1615 by Masatomo Sumitomo, a former Buddhist monk. Copper refining made the company famous. Riemon Soga, Masatomo Sumitomo’s brother-in-law, learned Western methods of copper refining. In 1590, he established a smelting business, Izumiya, literally meaning “spring shop.”²⁰ Sumitomo companies offer a wide range of defence products, including military aircraft components like landing gear (Sumitomo Precision Products), airframes, equipment, and technology for self-defense forces (Sumisho Aero-Systems), military communication and radar systems, and electronic devices (Sumitomo Electric). The Sumitomo GaN Radar product family has solutions for most radar applications including Airborne Radar, Perimeter

¹⁶ <https://www.nof.co.jp/english/company/history>

¹⁷ <https://ja.wikipedia.org/wiki/%E8%BB%BD%E8%A3%85%E7%94%B2%E6%A9%9F%E5%8B%95%E8%B%8A>

¹⁸ https://www.mod.go.jp/atla/en/policy/pdf/handout_FY2018.pdf

¹⁹ <https://www.isuzu.co.jp/world/company/history.html>

²⁰ <https://www.sumitomo.gr.jp/english/>

Security, Weather and Marine Radar Solutions. Additionally, Sumitomo Heavy Industries provides security systems and components, while Sumitomo Corporation trades various defense and security-related products from European manufacturers for Japanese government organizations.

Mitsui Group

Die Mitsui Group ist ein 1947 gegründeter japanischer Keiretsu. It was founded by Mitsui Takatoshi in 1673. As a "specialized aerospace and defense trading company" for about 40 years since it was established in 1982, Mitsui Bussan Aerospace Co., Ltd. have been contributing to the development of the Japanese aerospace industry and it's security through importing and selling helicopters, aircraft, space, defense and security related equipment, and the provision of related services.²¹

There are many other companies in Japan, some of which have not traditionally been defense suppliers that have leading-edge technology developed for commercial purpose but with defense application. These companies have great potential as supply chain and development partners to global defense primes.

Summary

The Japanese defense industry is dominated by the Big Ten. However, these ten companies are large industrial conglomerates in which the defense industry represents only a small part

These ten companies achieved around 64 percent of the armed forces' total arms purchases in millions of US dollars. Based on data from Teikoku Databank there were approximately 4,395 companies in Japan's defence industry in 2022. Most of these companies are small and medium-sized enterprises which only act as suppliers.

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