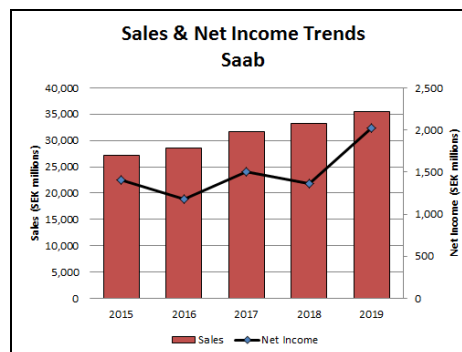


Saab

Outlook

- Saab posted sales of SEK35.4 billion in 2019, up almost 7 percent from SEK33. billion in 2018
- The company posted net income of SEK2.0 billion, compared to SEK1.4 billion in 2018
- Saab began producing the aft fuselage for the T-7A trainer in January 2020; production will shift to new facility in Indiana
- COVID-19 impact on Saab's civil aviation sector has been offset by strong performance in its defense operations



Headquarters

Saab AB
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Website: <https://saab.com>

Saab is one of the most important diversified manufacturing and technology firms in Sweden. Examining the company in a historical context puts its significance into perspective. Saab originated in Sodertälje in 1891, when Vabis AB was founded. Scania, in turn, was initially established in Malmö in 1900. The two firms merged their operations in 1911, and Scania-Vabis became an important manufacturer of utility vehicles soon after its formation.

Aktiebolaget Svenska Järnvägsverkstäderna (ASJ), which was headquartered in the Swedish city of Linköping, formed a new subsidiary in 1930. The new company, known as AB Svenska Järnvägsverkstäderna Aeroplan (ASJA), introduced its first aircraft in 1931.

Svenska Aeroplan Aktiebolaget (Saab) was founded in Trollhättan in 1937, and the first Saab aircraft made its maiden flight in 1940, following the merger of Saab and ASJA in 1939. Because of the events taking place in Europe at the time, Saab initially concentrated on military aircraft. While Sweden has been neutral since the late 19th century, during the 1940s the country aimed to preserve neutrality by maintaining a credible and independent arms manufacturing industry. This

policy has formed the cornerstone of the Swedish arms industry and procurement policy for decades and is largely responsible for the manner in which Saab has developed since its foundation.

The first Saab passenger aircraft was introduced in 1946. Saab produced commercial aircraft until 1953, when the company opted to concentrate on its military aircraft and automotive businesses. Saab made its entrance into the passenger car market with the introduction of an economical and light two-stroke-engine family auto that was to revolutionize the world auto industry. Saab continued production of economical two-stroke-engine automobiles until the late 1960s, when the company introduced its first four-stroke-engine model in 1967. Saab merged with Scania-Vabis AB in 1969, forming Saab-Scania AB. In 1995, the board of directors decided to split Saab-Scania into two independent companies, Scania AB and Saab AB. Saab AB consists of Saab Military Aircraft, Saab Dynamics, Saab Training Systems, Saab Aircraft, and Saab Combitech.

Saab completed its biggest transformation in March 2000 when it acquired Celsius in an SEK5 billion deal, creating a Nordic defense giant strongly positioned in the military support services market. More recently, Saab expanded its naval systems operations with the acquisition of ThyssenKrupp Marine Systems (renamed Kockums) in 2014.

Saab**Structure and Personnel**

Micael Johansson
President and CEO

Anders Carp
Executive Vice President, Surveillance and
Deputy CEO

Jonas Hjelm
Senior Vice President, Aeronautics

Görgen Johansson
Senior Vice President, Dynamics

Jessica Öberg
Senior Vice President,
Industrial Products and Services

Ellen Molin
Senior Vice President, Support and Services

Lars Tossman
Senior Vice President, Kockums

Annika Bäreimo
Senior Vice President, Legal Affairs, General
Counsel, and Secretary of the Board

Lena Eliasson
Senior Vice President, Human Resources

Sebastian Carlsson
Senior Vice President, Communication

Christian Hedelin
Chief Strategy Officer

Thomas Hendel
Acting Chief Financial Officer

Product Area

Saab AB produces military and commercial aircraft, electronics systems, aerospace systems and components, missile and drone systems, and products for industrial applications and industrial automation. The company is organized as follows:

1. Aeronautics
 - 1.1 Gripen E/F
 - 1.2 Gripen C/D
 - 1.3 Gripen Brazil
 - 1.4 Advanced Pilot Training Systems (T-7A)
2. Dynamics
 - 2.1 Ground Combat
 - 2.2 Missile Systems
 - 2.3 Underwater Systems
 - 2.4 Training and Simulation
 - 2.5 Barracuda
3. Surveillance
 - 3.1 Combat Systems and C4I Solutions
 - 3.2 Cyber Security
 - 3.3 Electronic Warfare Systems
 - 3.4 Radar Solutions
4. Support and Services
 - 4.1 Aviation Services
 - 4.2 Airborne ISR
 - 4.3 Gripen Support
 - 4.4 Communication
 - 4.5 Tactical Solutions
5. Industrial Products and Services
 - 5.1 Aerostructures
 - 5.2 Avionics Systems
 - 5.3 Traffic Management
 - 5.4 Combitech
6. Kockums
 - 6.1 Surface Ships
 - 6.2 Submarines

Aeronautics. This unit focuses on the research, development, and production of military aircraft systems. Primary products are the JAS 39 Gripen and Boeing/Saab T-7A Red Hawk trainer for the U.S. Air Force. The unit also conducts research and development for future manned and unmanned aircraft systems.

Dynamics. Manufactures ground combat weapons, including NLAW, AT4, Carl Gustaf, and Bill 2; land-based air defense systems, including RBS70, RBS70 NG, and BAMSE; missile programs, including the RBS 15 air-to-surface missile, Meteor, Taurus, IRIS-T, and ground-launched small diameter bomb (GLSDB); underwater systems, including remotely operated and autonomous vehicles as well as torpedoes and underwater sensors; training systems for ground combat based on laser and radio as well as virtual training solutions; and advanced camouflage systems, including the Barracuda MCS, ULCAS, and SOTACS products.

Surveillance. This division focuses on surveillance, threat detection, and location, platform, and force protection, as well as avionics. The unit's portfolio covers airborne, ground-based and naval radar; electronic warfare; combat systems and C4I solutions; and traffic management systems. Notable products include the airborne surveillance systems Global-Eye and Saab Erieye AEW&C (Airborne Early Warning & Control), the Giraffe, Sea Giraffe surface radars, and Arthur systems.

Support and Services. Provides integrated support solutions; maintenance, logistics, and technical support; field facilities; and regional aircraft support.

Saab

Industrial Products and Services. Established in January 2015, this division comprises the business units Combitech, Avionics Systems, Aerostructures, and Traffic Management. Aerostructures produces parts such as wings, flaps, and doors for OEM manufacturers, Boeing and Airbus.

Kockums. This unit produces advanced naval systems such as surface combatants and submarines. Products include mine countermeasure vessels, Visby class corvettes, and the A26 (Nasta Generation Ubat), Gotland, and Collins class submarines.

Facilities

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Saab Dynamics, Boforsvägen 1, Karlskoga, SE-691 80, Sweden. Telephone: + 46 586 81 000.

Saab Barracuda AB, Hammarsvägen 1, SE-594 32 Gamleby, Sweden. Telephone: + 46 493 14800.

Saab Underwater Systems, Agneshögsgatan 273, Box 910, SE-591 29 Motala, Sweden. Telephone: + 46 13 18 60 00.

Saab Surveillance, Solhusgatan 10, Kallebäcks Teknikpark, SE-412 89, Göteborg, Sweden. Telephone: + 46 31 794 9000.

Saab Surveillance, Nettovägen 6, SE-175 88 Järfälla, Sweden. Telephone: + 46 8 580 840 00.

Saab Training & Simulation, PO Box 1132 SE-251 11 Helsingborg, Sweden. Telephone: + 46 42 132005.

Support and Services, Kungsörsvägen 60, Arboga, Sweden. Telephone: + 46 589 800 00.

Saab Kockums, Amiralitetsgatan 25, SE-371 82 Karlskrona, Sweden. Telephone: + 455 68 30 00.

Website: <http://saab.com/naval/#Submarines-and-Warships>

Dockstavarvet AB, SE-870 33 Docksta, Sweden. Telephone: +46 613 711 600. Produces pilot, combat, and patrol boats.

Website: <https://www.dockstavarvet.se/>

Combitech, Universitetsvägen 14, Box 15042, SE-580 15 Linköping, Sweden. Telephone: + 46 13 18 90 00.

Website: <http://www.combitech.se>

Saab Aircraft Leasing, 581 88 Linköping, Sweden. Telephone: + 46 13 18 74 11.

Website: <http://www.saabaircraftleasing.com>

Saab Sensis, 85 Collamer Crossings Pkwy, East Syracuse, NY 13057 USA. Telephone: + 1 (315) 445-0550.

Website: <http://saab.com/saab-sensis/>

Saab Defense and Security USA, 5717 Enterprise Pkwy, East Syracuse, NY 13057. Telephone: + 1 (315) 445-5009. This is the headquarters for U.S. operations.

Website: <https://saab.com/region/usa/>

Saab Barracuda USA, 608 E McNeill St, Lillington, NC 27546. Telephone: + 1 (910) 893-2094.

Saab, West Lafayette, IN 47906. The facility, located at Discovery Park District Aerospace on the west side of the Purdue University campus, will support production of the U.S. Air Force's T-7A jet trainer.

Saab Australia Pty Ltd, 21 Third Ave, Technology Park, Mawson Lakes, South Australia 5095. Telephone: + 08 8343 3800.

Website: <http://saab.com.au>

Corporate Overview

Saab's business concept is to conduct industrial operations with good profitability, focusing on aerospace and military technology. The company's main objective is to gain a leading position in each niche.

New Products and Services

Torpedo 62 Life Extension. In July 2020, Saab received a SEK485 million contract from the Swedish Defence Materiel Administration (FMV) for the life extension of the heavyweight Torpedo 62 system. The order is part of a life extension program for the

heavyweight torpedo and mainly comprises a review of the system, modifications, and enhancements. Deliveries will take place during 2020-2024.

CB90 HSM. In October 2019, the first of 18 new CB90 HSM has been delivered to the Swedish defense material administration (FMV). The CB90 is fast military assault craft originally developed for the Swedish Navy by Dockstavarvet. The HSM variant boast improved speed and maneuverability as well as attack power and surveillance capabilities through the Trackfire remote weapon station.



Saab

Falcon. Lockheed Martin, Diehl Defence, and Saab announced the Falcon air defense system in February 2019. This system provides a short and medium-range air defense solution. Falcon uses the IRIS-T SLM interceptor and vertical launcher, Saab's 360-degree AESA Giraffe 4A radar, and Lockheed Martin's SkyKeeper command and control battle management system. The system can engage unmanned aircraft, cruise missiles, and fixed- and rotary-wing aircraft. The team is offering the Falcon as a replacement for the HAWK air defense system currently in service in the United Arab Emirates (UAE). This is not the only potential customer for the Falcon, according to company officials.

T-7A Red Hawk. In September 2018, Boeing and teammate Saab were selected as the winners in the U.S. Air Force's long-running T-X trainer competition. The \$9.2 billion award funds 351 jets, 46 simulators, and associated ground equipment. The T-X replaces the aging T-38 Talon, which first entered service in 1959 and has been modified over the years into the current T-38C model. The first T-X trainers will enter service in 2023 at Randolph Air Force base; Full Operational Capability is expected by 2024. Saab began producing the aft fuselage in January 2020. The first seven sections will be produced in Sweden. In the future, Saab intends to perform this work at a new manufacturing facility in West Lafayette, Indiana. Final assembly will take place at Boeing's facility in St. Louis. The aircraft was officially named the T-7A Red Hawk by the U.S. Air Force in September 2019.

Website: <http://www.boeing.com/defense/t-7a/>

Sabertooth. In January 2018, Saab received a contract from an undisclosed customer for its Sabertooth autonomous underwater vehicle/remotely operated vehicle (AUV/ROV). With this contract, the customer ordered the first vehicles in a planned fleet of Sabertooth vehicles. The vehicles are planned for use in the field of subsea inspection, maintenance, and repair (IMR); survey; and intervention work.

Plant Expansion/Organization Update

FCAS Center. In July 2020, Saab announced it is creating a new FCAS center in the United Kingdom as a hub for the FCAS (Future Combat Air Systems) program. Saab will initially invest GBP50 million in the facility. A location for the facility is currently being considered.

U.S. Manufacturing Site. In May 2019, Saab announced a new site for advanced manufacturing and production in West Lafayette, Indiana. The initial focus for the site will be aeronautical engineering, producing major structural sections, and final assembly of the Saab

parts of the T-X jet trainer. Construction of the \$37 million facility is expected to begin in 2020. Hiring of local employees will also start during 2020, and Saab will initially create up to 300 new full-time positions. Once operational, Saab will have a total of eight operations in the United States.

Radar Ops Consolidated in New Unit. In December 2018, Saab merged its Airborne Surveillance Systems and Surface Radar Solutions into a single unit, Radar Solutions. The new business unit will combine all activities for airborne, ground-based, naval and fighter radars, aligning synergies in both research and development and marketing and sales.

Brazil Aerostructures Plant. In May 2018, Saab unveiled the 5,000-square-meter facility that will house its future Gripen fighter jet aerostructures plant: Saab Aeronáutica Montagens (SAM), in the city of São Bernardo do Campo, in São Paulo, Brazil. SAM will be part of Saab's offset obligation and will produce aerostructures for the Brazilian Gripen fighter as well as become a part of Saab's global supply chain. Production operations began in July 2020. The tail cone and front fuselage of the single-seat version of the Gripen fighter are the first aerostructures to enter into production at Saab's site in São Paulo. Subsequently, the aerodynamic brakes, rear fuselage, wing box, and front fuselage for the two-seater version will also be manufactured there.

UAE Facility. In December 2017, Saab established an operation in Abu Dhabi in the United Arab Emirates (UAE). Located in the Tawazun Industrial Park, the operation will initially focus on component production for sensor systems. The operation may expand its focus to include civil security, vehicle protection, and training, the company said.

Hyker Security Launched. In June 2017, Saab launched a new company focused on security systems for communicating applications. Hyker Security specializes in data protection for information created and distributed digitally.

Website: <https://hyker.io/>

Security and Defense Dissolved. In October 2015, Saab dissolved the Solutions division and moved its business units to other areas within the company. The business units within Security and Defense Solutions were adjusted as follows: Traffic Management and Combat Systems and C4I Solutions became units within the Electronic Defense Systems business area; Training and Simulation was moved to Dynamics; Critical Systems and Communication Solutions was shifted to the Support and Services

Saab

sector; and Saab Kockums now reports to the CEO and is intended to report financially within corporate.

Industrial Products and Services Formed. In January 2015, Saab established a new unit with a business-to-business focus, called Industrial Products and Services. The new unit contains Aerostructures (formerly part of Aeronautics), Avionics (formerly part of Electronic Defense Systems), the independent technical consultancy company Combitech, and the Saab Ventures portfolio. The business units in Industrial Products and Services differ from other operations within Saab in that their focus is on business-to-business customers (i.e., they do not rely on Saab's main end users for sales).

Maritime Systems Center Opened. In July 2014, Saab's Advanced Maritime Systems Centre in Adelaide, Australia, was officially opened. The center would include Saab Australia's 9LV Combat Management System Development and Integration program, Submarine Ship Control Systems Laboratory, Training and Simulation Node, Future Combat Systems Laboratory, and Missile and Fire Control Systems Laboratory. The Advanced Maritime Systems Centre would initially employ over 100 people, with plans to expand to more than 200 employees by 2020.

U.S. Operations Combined. In October 2013, Saab combined its U.S. operations into a new entity, Saab Defense and Security (SDAS) USA LLC. The new unit brings together the operations of the former separate legal entities Saab Training USA LLC, Saab Barracuda LLC, Saab Support and Services LLC, and the defense elements of the Saab Sensis Corporation into a single organizational structure. SDAS operates under a special security agreement with the U.S. Department of Defense.

Saab India Technologies Formed. In September 2011, Saab formed Saab India Technologies Pvt Ltd as part of its strategy to bolster its presence in that country. Saab India Technologies is a wholly owned subsidiary of Saab, establishing India as a strategic market. Saab planned to offer its complete product range in India for all defense- and aerospace-related opportunities.

Mergers/Acquisitions/Divestitures

Saab Grintek Technologies Sold. In early 2019, the South African-based African Equity Empowerment Investment acquired Saab Grintek Technologies (SGT). The operation has been renamed SGT Solutions. Terms were not reported.

GKN Applied Composites Acquired. In December 2017, Saab acquired Applied Composites AB (ACAB), based in Linköping, Sweden, from GKN

Aerospace. ACAB has approximately 55 employees and an annual turnover of around SEK105 million. Terms were not announced.

Dockstavarvet Shipyard Acquired. In December 2017, Saab acquired Swedish combat boat producer N. Sundin Dockstavarvet AB and the repair shipyard Muskövarvet AB. Combined, the companies generate sales of approximately SEK250 million and have 80 employees. The two operations are part of Saab's strategy to strengthen its naval offerings and falls under the auspices of Kockums. Terms were not disclosed.

Website: <https://www.dockstavarvet.se/>

Nordic Defence Industries Acquired. In October 2016, Saab acquired the Danish naval company Nordic Defence Industries. NDI designs and manufactures mine disposal charge systems for the naval defense industry. The company would be integrated into Saab's Dynamics business area within its Underwater Systems business unit. Terms were not announced.

Website: <http://www.ndi.dk/>

Phaeros Group Acquired. In August 2016, Saab acquired the Phaeros Group for an undisclosed amount. Phaeros offers port management and terminal operating system solutions. The company would be integrated into Saab's Surveillance business area.

ThyssenKrupp Marine Systems AB Acquired. In July 2014, Saab acquired ThyssenKrupp Marine Systems AB (TKMS AB, formerly Kockums) for SEK340 million. Previously, in April 2014, Saab and ThyssenKrupp Industrial Solutions AG had signed a non-binding Memorandum of Understanding (MoU) regarding the acquisition of the Swedish shipyard TKMS AB, with operations based in Karlskrona, Malmö, and Muskö, Sweden. The deal did not include ThyssenKrupp Marine Systems GmbH located in Germany.

TKMS AB designs, builds, and maintains naval systems such as submarines and surface vessels. Other products include air-independent propulsion (AIP) systems based on Stirling technology; submarine rescue vehicles; and mine countermeasures systems. The company has approximately 900 employees and supplies systems and products to the navies of Sweden, Australia, and Singapore. The company operates under the new name Saab Kockums.

Hydro-Lek Acquired. In September 2013, Saab Seaeeye, a wholly owned subsidiary of Saab, acquired Hydro-Lek Ltd, a U.K. manipulator and tooling manufacturer for underwater vehicles. The acquisition strengthens Saab Seaeeye's product portfolio of remotely

Saab

operated, autonomous, and hybrid underwater vehicles, with the ambition to further grow the company. Terms were not announced.

TIKAB Acquired. In May 2013, Saab acquired TIKAB, a Swedish technical information provider. TIKAB, which produces and supplies technical documentation such as operating manuals, training tools, workshop manuals, and illustrated catalogs for the civilian and military market, became part of Saab's Support and Services unit. Terms were not announced.

Armor Technology Assets Purchased. In March 2013, Saab purchased the rights to the protection technology Soft Armour and associated assets from protection technology company Protaurius AB. The acquisition is Saab's first step into the field of ballistic protection technology. Soft Armour is a patented technology that uses a spherical ceramic material to protect people and sensitive equipment from fine-caliber and armor-piercing ammunition. Soft Armour is self-healing and can withstand multiple hits in the same area. It can also be used in construction solutions, such as walls, shields, and soft coverings. The assets have been folded into Saab Barracuda, part of the Dynamics business area.

Teaming/Competition/Joint Ventures

Adani. In September 2017, Saab and India's Adani Group announced an aerospace and defense collaboration, aligned with the government of India's "Make in India" initiative. The intended collaboration would initially encompass design, development, and production of Gripens for India. Besides the fighter competition, the two firms are also exploring products such as UAVs, helicopters, and other aerospace components.

Airbus. In July 2015, Saab signed a contract with Airbus to become a supplier of composite work on the A330neo program. The agreement covers the manufacture of the A330neo wing trailing edge falsework extension, which is situated on the outer part of the wing with interfaces to the Sharklets and the wing box. Saab has also supplied components for the A340-500/600, A320, and the A380.

Anacom. In April 2013, Saab signed an MoU for training and simulation system collaboration with Anacom, a Brazilian company that is a supplier to the Brazilian Defense Forces. The cooperation with Anacom is to evaluate and support activities to jointly supply virtual training and simulation systems or similar systems to Brazilian customers, thereby fulfilling Brazilian government requirements.

Avioniq. In January 2018, Saab and Avioniq Awareness Sweden AB teamed to promote Avioniq's

threat evaluation system, Rattlesnake, along with Saab's air and airborne command and control systems.

Bharat Electronics Ltd. In July 2018, Saab and India's Bharat Electronics Ltd (BEL) signed an MoU to jointly market the RAWL-03 L-band 3-D air surveillance radar system, which was codeveloped by BEL and Saab. RAWL-03 will be offered in both shipborne and land-based configurations.

Boeing. Boeing and Saab were selected for the U.S. Air Force's T-X program, since renamed the T-7A Red Hawk, with a clean-sheet jet trainer design in September 2018 (see T-X Trainer, below).

In June 2015, the two extended their cooperation agreement to conduct trials of a novel new application for Boeing's GBU-39B small diameter bomb. The companies are testing a ground-launched small diameter bomb, or GLSDB, that utilizes a M26 booster rocket to propel the weapon from a guided multiple launch rocket system (GMLRS).

Bombardier. In November 2015, Saab and Bombardier secured a \$1.27 billion order from the UAE for two Global 6000-based multirole airborne surveillance platforms known as GlobalEye. The Bombardier aircraft uses the Saab Erieye ER radar and other sensors to provide long-range detection. In the past, the radar system had been mounted on used Saab aircraft or on Embraer 145 regional jets.

In July 2013, Saab and Bombardier announced they would collaborate on traffic control systems. The teaming brings together Bombardier's expertise in rail traffic control and Saab's advanced technology and know-how in sensors, communications, and control systems for surface, air, and sea transports.

Canadian Fighter Replacement. In February 2018, Canada announced its Future Fighter Capability Project (FFCP), which will replace the Canadian Air Force's existing fleet of CF-18 fighter jets. Five manufacturers were initially invited to bid to provide 88 advanced fighter aircraft. The list included Boeing, Lockheed Martin, Airbus (with the Eurofighter), Saab, and Dassault. However, by year-end 2018, Dassault had withdrawn from the competition. This was followed by Airbus' withdrawal of the Eurofighter in September 2019. Saab is offering the Gripen E, Boeing the F/A-18 E/F Super Hornet, and Lockheed Martin the F-35A. In March 2020, Saab announced its "Gripen for Canada Team," which includes Canada's IMP Aerospace & Defense, CAE, Peraton Canada, and GE Aviation. A contract award is planned for 2022, with the first delivery anticipated in 2025.

Saab

Damen Shipyards. In September 2018, Damen Schelde Naval Shipbuilding and Saab formed the Damen Saab Tamandaré consortium to compete for the Brazilian corvette project. Brazil is looking to build four Tamandaré-class multipurpose ships for its Navy. The consortium was one of four competitors that have been downselected for the next stage. Rivals included Águas Azuis, formed of Embraer and ThyssenKrupp Marine Systems; FLV from Fincantieri and Vard; and Villegagnon, comprising Naval Group and Enseada. Águas Azuis was selected as the winner in March 2019.

Earlier, in January 2015, Saab and Dutch shipbuilder Damen Shipyards Group teamed to explore future opportunities in the international submarine market. The companies have signed an exclusive teaming agreement to pursue the potential Walrus class submarine replacement program for the Netherlands. In addition to this project, Saab and Damen will explore ways in which they might bid jointly on other submarine procurement programs.

Deftech. In January 2015, Saab signed a new industrial cooperation agreement with the Malaysian company Defence Technologies Sdn Bhd (Deftech), a wholly owned subsidiary of DRB-HICOM Berhad. The intent is to deepen and broaden the existing relationship between the two companies by adding the Gripen system to their joint planning. The agreement covers areas such as Gripen-related maintenance and support activities, design and manufacture of advanced composite systems, and associated technology transfer.

In 2011, the two companies signed an industrial cooperation teaming agreement to collaborate on an airborne early warning and control system. This cooperation was further expanded in March 2013 with the signature of an MoU covering various technology areas.

Diehl. In December 2000, Diehl and Saab formed an alliance to cooperate on the development and production of anti-ship missiles. Initially, the companies cooperated on the integration and verification phases of the RBS15 Mk 3 Anti-Ship Missiles project. The cooperation also includes production, deliveries, maintenance, and upgrades for both the Swedish and German navies, as well as for the export market. Saab Bofors Dynamics is the system coordinator, and Diehl is responsible for final assembly and testing of the missiles. Previously, the two companies had cooperated on the IRIS-T air-to-air missile.

Embraer. In December 2013 Brazil selected Saab's Gripen NG as the winner of its FX-2 fighter competition. According to Brazil's defense minister, the three main reasons the Gripen was selected over

Dassault's Rafale and Boeing's F/A-18E/F Super Hornet were price, technology transfer, and performance. The deal is for the purchase of an initial 36 fighters at a cost of \$5.4 billion. According to reports, the Brazilian Air Force has a requirement for 108 Gripen NGs, in three production batches. In April 2015, Saab and Embraer finalized their joint program management and production arrangements for the first batch of Gripens. A production line will be set up at Embraer's Gavião Peixoto industrial facility. There, Embraer will be responsible for software development, integration, flight tests, final assembly, and aircraft delivery for the Brazilian Gripen NG program.

Ericsson. In June 2015, Ericsson and Saab signed a cooperative agreement that aims to strengthen both companies' market position through the exchange of knowledge and collaborative research in a number of areas of mutual importance. The agreement covers, among other things, work on the next generation of mobile networks (known as 5G), microwave and antenna technology, production methodology, and industrialization techniques.

EURENCO. In July 2003, the French Groupe SNPE and its subsidiary SME (SNPE Energetic Materials), along with the owners of NEXPLO Industries AB, Saab AB, and Finland's Patria, agreed to merge their activities in propellants and explosives within a new company named EURENCO (European Energetics Corporation). The company began operations in January 2004.

Website: <http://www.eurenco.com>

Eurostep. In April 2013, Saab and Eurostep signed a teaming agreement to cooperate in the application of Eurostep's ShareAspace commercial off-the-shelf (COTS) software and to deliver collaborative product lifecycle support solutions to aerospace, defense, and security markets based on the PLCS standard. ShareAspace is a software-for-information exchange offering secure collaboration across enterprises and engineering domains.

Força Delta Equipamentos Militares. In April 2013, Saab Barracuda signed a partner agreement with Brazilian company Força Delta Equipamentos Militares. The agreement covers the semi-manufacturing of multispectral camouflage for signature management purposes in Brazil. The deal is part of Saab Barracuda's long-term strategy to increase its signature management business in South America.

HX Competition. In October 2015, Finland launched its HX program to identify a successor for its F/A-18 Hornets. Finland seeks a multirole jet fighter to introduce into service on a rolling basis as it begins

Saab

phasing out its Hornets in 2025. Competitors for the requirement include Boeing's F/A-18E/F Super Hornet, Lockheed Martin's F-35 Lightning II, the Eurofighter Typhoon, Dassault Aviation's Rafale, and Saab's Gripen E and dual-seat Gripen F versions. These five contenders submitted initial proposals for the estimated EUR10 billion program in February 2019. A test and evaluation event dubbed the HX Challenge began in early 2020. A winner is expected to be selected in 2021.

IBD Deisenroth. In January 2015, Saab and IBD Deisenroth Engineering signed a cooperation agreement focusing on the development of vehicle survivability. The two firms have synergies in their products and technologies that will allow them to provide advanced survivability solutions for land, sea, and air applications.

Indian Gripen MoUs. In February 2019, Saab signed new MoUs with three Indian aerospace manufacturers as part of its offer of the Gripen aircraft. The companies included Dynamatic Technologies Ltd, CIM Tools Private Limited, and Sansera Engineering Ltd. The MoUs with CIM Tools and Sansera expand the existing working relationships with Saab on commercial aerostructures to the Gripen fighter and other defense-related products in the Saab portfolio. The MoU with Dynamatic is a starting point to explore future joint opportunities in commercial and defense-related aerostructures work, including Gripen.

Naval Shipyard SA. In November 2015, Saab signed a letter of intent for naval cooperation with Naval Shipyard SA in Gdynia, Poland. The agreement provides a basis for close cooperation to jointly offer naval solutions, including submarines, for the Polish Navy under the order of the Polish Ministry of National Defense.

Neuron. In May 2005, Dassault Aviation and Hellenic Aerospace Industry (HAI) signed a cooperation agreement for development of the Neuron unmanned combat air vehicle. Dassault will manage the project as commissioned by French defense procurement agency DGA, with Saab as principal partner. Other joint venture members include Leonardo, HAI, CASA, and RUAG.

Nexter. In June 2014, Saab signed a cooperation agreement with Nexter Munitions for supply of the AT4 disposable shoulder-launched weapon system to the future French Roquette NG program.

PT Pindad. In November 2014, Saab signed a teaming agreement with Indonesian defense company PT Pindad for the marketing of ground-based air defense systems and the extension of the Indonesian armed forces' RBS70 air defense missile system's

operational life. The teaming agreement will involve transfer of technology from Saab to upgrade the RBS70 systems Indonesia acquired in the 1980s. The initial focus will be on increasing the operational life of the RBS70 Mk 2 missiles.

QuEST Global Manufacturing. In November 2012, Saab established a joint venture with Indian partner QuEST Global Manufacturing to manufacture and supply assemblies for the commercial aerostructures market. The company, in which Saab has a 26 percent holding, is located in Belgaum, India.

Roketsan. In June 2014, Saab and Roketsan signed an MoU covering future collaboration on anti-tank missile systems. Under the terms of the agreement, signed at the Eurosatory 2014 Exhibition in Paris, France, the two companies would work together to develop a new system to fill the gap in the short- to medium-range anti-tank missile market.

Saab Digital Air Traffic Solutions. In June 2016, Saab and LFV (the Swedish air navigation service provider) signed an agreement to establish a new company: Saab Digital Air Traffic Solutions. The new company will market, sell, develop, and operate products and services for remote air traffic control. Saab will be the majority owner with 59 percent of shares, with LFV holding 41 percent.

Website: http://saab.com/fi/security/air-traffic-management/digital_air_traffic_solutions/

Sikorsky. In June 2011, Saab and Sikorsky signed a teaming agreement regarding support and training services for the Sikorsky UH-60M Black Hawks to be operated by the Swedish armed forces. The FMV had purchased 15 Black Hawk helicopters. In Sweden, the helicopters are designated HKP 16. The Swedish armed forces intended to use the aircraft for medical evacuation, utility, and search-and-rescue missions in support of the International Security Assistance Force (ISAF) in Afghanistan.

Systematic. In November 2010, Saab and Systematic signed a non-exclusive cooperation agreement within the high-echelon command, control, and information system (CCIS) market segment. The agreement gives Saab and Systematic easy access to each other's competencies and products, which can then be more efficiently integrated to meet customer needs.

Swedish Trainer Program. In May 2020, Sweden launched a new jet trainer replacement effort for its aging fleet of Saab SK 60 (Saab 105) aircraft, which have been in service since 1967. According to the schedule, the new trainer and its systems will need to be in place by mid-2023. The Boeing/Saab T-7A is expected to be a contender, among others.

Saab

Swiss Fighter Competition. Under the Air 2030 initiative, Switzerland will evaluate five aircraft types to replace aging F-5 and F/A-18C/Ds currently in service. In January 2019, the Swiss government received proposals from five competitors: the Boeing F/A-18E/F Super Hornet, Dassault Rafale, Eurofighter Typhoon, Lockheed Martin F-35A, and Saab Gripen E. The program is for a fleet of 30 or 40 planes. A down selection could occur in 2021. In December 2019, Switzerland allocated \$6.2 billion for the program.

In June 2019, the Gripen was pulled from the competition following a formal recommendation from the Swiss procurement agency. According to a Saab statement, the Gripen was disqualified because the competition's flight tests have been designed only to evaluate aircraft that are operationally ready in 2019.

This is the second competition to fulfill a Swiss requirement. In 2012, the Saab Gripen E was selected to replace the F-5. However, this decision was negated following Swiss public referendum in 2014 that voted down the purchase.

TAURUS Systems GmbH. Formed in 1998, this is a joint venture made up of MBDA Deutschland GmbH and Saab Dynamics AB. The venture focuses on development and production of the TAURUS standoff weapon system.

Website: <https://taurus-systems.de/>

Tawazun. In February 2013, Saab partnered with Tawazun, a strategic investment company focusing on defense and strategic manufacturing, to create a new UAE-based radar company. The new company is called Abu Dhabi Advanced Radar Systems (ADARS). The joint venture is owned 51 percent by Tawazun and 49 percent by Saab. This will be the Middle East region's first company for the development, manufacture, assembly, and integration of radar systems.

T-X Trainer. This U.S. Air Force program aims to replace the aging fleet of T-38 jet trainers currently in service. The Air Force is planning to acquire 350 aircraft beginning around 2023 or 2024. In December 2013, Boeing and Saab entered into a joint agreement to develop a new advanced jet trainer for the T-X program. The Boeing-Saab team's bid will need to build in the cost of developing a new aircraft, but by going with a new design, the team will be able to tailor it precisely to T-X program requirements. Boeing and Saab revealed their first two T-X aircraft in September 2016. First flight occurred in December 2016. By September 2017, the Air Force had narrowed the competitors down to three: Lockheed Martin/KAI with the T-50A, a Boeing/Saab team with a

clean-sheet design, and Leonardo DRS (the underdog in the competition) with the M-346 Master. Ultimately, the Air Force selected the Boeing/Saab team for the \$9.2 billion program in late September 2018 (see **New Products and Services**).

Website: <http://www.boeing.com/defense/t-7a/>

Team Tempest. Involving BAE Systems, Leonardo, MBDA, Rolls-Royce, and the RAF's Rapid Capabilities Office, this team is developing the Tempest concept for the U.K.'s Future Combat Air effort. The British MoD's aim is to develop a sophisticated future fighter to replace the RAF's Eurofighter fleet in the 2040s, at which time they will serve alongside the F-35 Lightning II combat aircraft. The Team Tempest joint program office will spearhead development of a new design by 2025. This phase will be underwritten by GBP2 billion (\$2.6 billion) in funding technology originally committed under the 2015 Strategic Defense and Security Review (SDSR). According to government and industry officials, the Tempest aircraft is necessary to sustain the U.K.'s combat aerospace sector. The Tempest is intended to enter service around 2035, replacing the Eurofighter Typhoon. A full-scale model of the Tempest was shown at the 2018 Farnborough Air Show. In September 2019, the partners signed a Statement of Intent that will see the parties work together to define a concept and partnership model. In July 2020, seven other companies were selected by the U.K. to support Team Tempest: Bombardier Belfast, Collins Aerospace Systems, GE Aviation UK, GKN Aerospace, Martin-Baker, Qinetiq, and Thales UK.

In July 2020, Saab announced plans to invest GBP50 million in a U.K. FCAS hub to support the effort. In July 2019, Swedish officials signed a memorandum of understanding with the U.K. to cooperate on the Tempest program. Under this arrangement, Saab will contribute its expertise in advanced technology development, system integration of combat air systems, and related areas, including sensors, missile systems, and support.

Website: www.raf.mod.uk/what-we-do/team-tempest/

UMS Skeldar. Swiss-based UMS Aero AG and Saab formed this joint venture in December 2015. The company's principal product is the Skeldar rotary-wing unmanned aircraft system (UAS) family. Saab transferred all of its Skeldar-related assets into the new UMS Skeldar joint venture and is now a junior partner with a 47 percent stake. In early 2016, the venture opened a new production facility in Linköping, Sweden, for its line of remotely piloted aircraft systems.

Website: <http://umsskeldar.aero>

Saab

Vingtech Saab AS. In October 2008, Saab and Simrad Optronics ASA formed a joint venture called Vingtech Saab AS. The company is owned 51 percent by Simrad Optronics and 49 percent by Saab. The plans for the joint venture were announced in expectation that Norway would decide to buy the Gripen. However, Norway chose the American-made F-35 instead. Still, since both Simrad Optronics and Saab expect stronger Nordic defense cooperation in the future, the two agreed to continue with the joint venture. The company, which

is based in Norway, will mainly develop and sell high-tech optronics products.

Vricon. In May 2015, Saab and DigitalGlobe created a 50-50 joint venture called Vricon that will sell 3-D satellite products that take a step beyond current aerial light detection and ranging (LIDAR) technology.

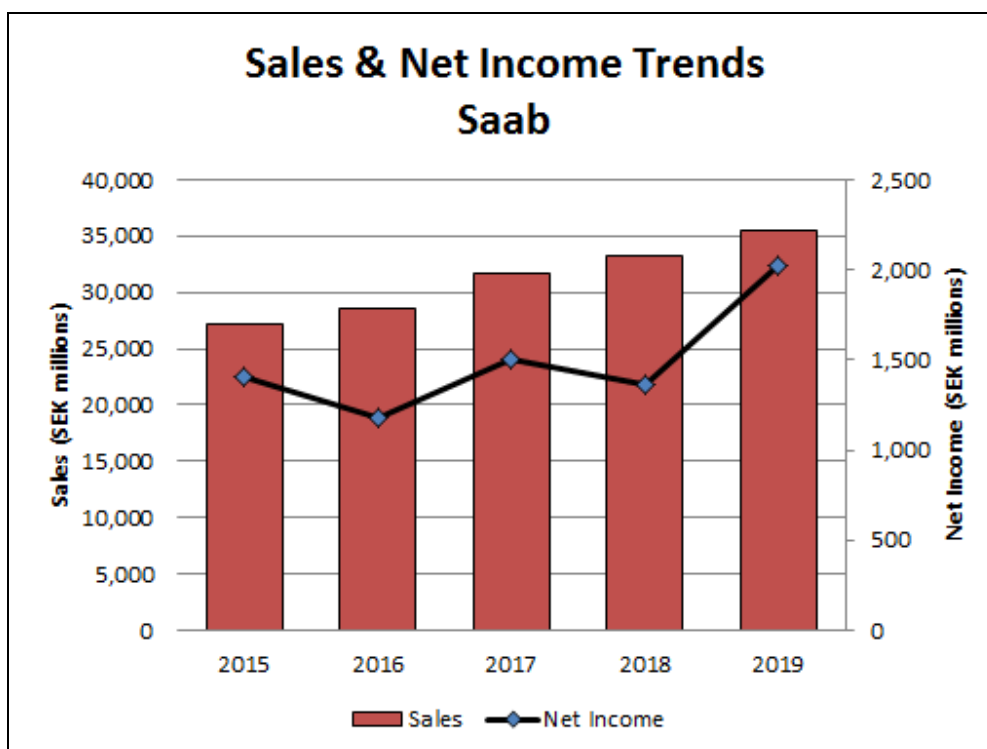
However, in July 2020, Saab sold its stake to Maxar Technologies for about \$117 million.

Website: <http://www.vricon.com>

Financial Results/Corporate Statistics

Saab posted sales of SEK35.4 billion in 2019, up almost 7 percent from SEK33. billion in 2018. The company posted net income of SEK2.0 billion, compared to SEK1.4 billion in 2018. U.S. dollar figures, in millions, are translated as of December 31, 2019, at the rate of USD1 = SEK9.33105.

Saab (SE: SAABB)						
(EUR millions)	2015	2016	2017	2018	2019	(USD) 2019
Net Sales	27,186	28,631	31,666	33,156	35,433	3,797
% Defense Sales	82%	83%	84%	85%	85%	-
% Foreign Sales	58%	57%	58%	59%	63%	-
Net Income	1,402	1,175	1,508	1,366	2,025	217
R&D Expenditures	1,565	1,592	1,348	1,267	1,137	122
Backlog	113,834	107,606	107,233	102,184	93,293	9,998
Long-Term Debt	4,872	5,624	6,235	8,196	6,513	698
Shareholder Equity	12,851	13,156	14,285	19,633	20,809	2,230
Debt-to-Equity Ratio	.37	.42	.43	.41	.31	-
Employees	14,685	15,465	16,427	17,096	17,420	-



Industry Segments

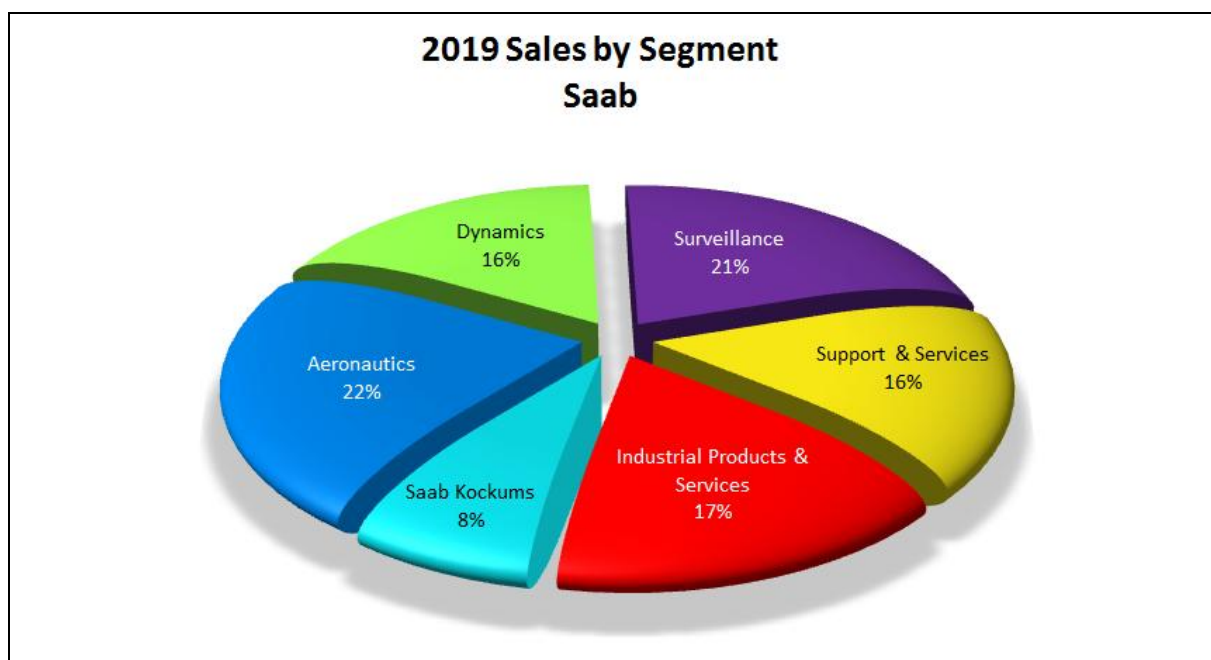
A breakdown of Saab's sales and income by major market segment for the past five years is provided below.

SALES		2015	2016	2017	2018	2019
(USD millions)						
Aeronautics		6,262	7,138	7,267	8,056	8,218
Dynamics		4,009	4,927	5,617	5,319	6,140
Surveillance		7,305	7,659	6,633	7,397	7,699
Support & Services		6,012	5,081	5,818	5,470	5,821
Industrial Products & Services		3,562	3,605	5,635	6,107	6,556
Saab Kockums		1,847	2,311	2,712	3,291	3,007
Corporate		66	17	131	83	295
Internal		-1,877	-2,107	-2,147	-2,567	-2,303
TOTAL		27,186	28,631	31,666	33,156	35,433
OPERATING INCOME		2015	2016	2017	2018	2019
(USD millions)						
Aeronautics		509	535	478	680	677
Dynamics		175	447	680	535	716
Surveillance		320	449	632	631	853
Support & Services		549	454	702	685	742
Industrial Products & Services		213	134	116	202	238
Saab Kockums		228	134	157	173	88
Corporate		-94	-356	-515	-640	-377
TOTAL		1,900	1,797	2,250	2,266	2,937

Saab**Segment Details**

Below is a breakdown of key financial data for the company's major business segments and geographic regions.

AERONAUTICS		2015	2016	2017	2018	2019
(USD millions)						
Bookings		39,349	1,789	3,295	5,261	2,979
Net Sales		6,262	7,138	7,267	8,056	8,218
Operating Income		509	535	478	680	677
Backlog		59,476	54,127	50,154	47,359	42,120
Employees		2,723	2,932	3,073	3,212	3,421
DYNAMICS		2015	2016	2017	2018	2019
(USD millions)						
Bookings		5,273	6,680	8,615	7,308	6,468
Net Sales		4,009	4,927	5,617	5,319	6,140
Operating Income		175	447	680	535	716
Backlog		6,284	8,031	11,597	13,645	14,264
Employees		2,041	2,094	2,143	2,252	2,353
SURVEILLANCE		2015	2016	2017	2018	2019
(USD millions)						
Bookings		15,456	5,993	7,048	7,370	9,390
Net Sales		7,305	7,659	6,633	7,397	7,699
Operating Income		320	449	632	631	853
Backlog		17,707	16,415	14,764	14,731	16,465
Employees		3,563	3,963	3,601	3,770	3,808
SUPPORT & SERVICES		2015	2016	2017	2018	2019
(USD millions)						
Bookings		10,557	4,473	6,199	3,635	3,641
Net Sales		6,012	5,081	5,818	5,470	5,821
Operating Income		549	454	702	685	742
Backlog		13,393	12,938	12,513	10,690	8,986
Employees		2,185	2,119	1,865	1,851	1,912
INDUSTRIAL		2015	2016	2017	2018	2019
(USD millions)						
Bookings		3,632	3,358	5,344	5,344	5,515
Net Sales		3,562	3,605	5,635	6,107	6,556
Operating Income		213	134	116	202	238
Backlog		9,587	9,361	11,697	11,004	9,035
Employees		2,381	2,679	3,488	3,566	3,635
KOCKUMS		2015	2016	2017	2018	2019
(USD millions)						
Bookings		10,268	1,293	2,129	1,123	1,031
Net Sales		1,847	2,311	2,712	3,291	3,007
Operating Income		228	134	157	173	88
Backlog		9,928	8,910	8,815	6,646	4,852
Employees		803	853	1,115	1,205	1,197

Saab

MARKET SEGMENT SALES	2015	2016	2017	2018	2019
(USD millions)					
Air	12,642	12,787	14,797	15,776	16,314
Land	5,581	6,453	6,386	5,590	6,657
Naval	4,286	4,897	5,466	6,910	7,109
Civil Security	2,127	1,987	2,166	2,263	2,410
Commercial Aeronautics	2,096	1,987	1,765	1,689	1,955
Other	454	520	814	928	997
TOTAL	27,186	28,631	31,394	33,156	35,442

GEOGRAPHIC SALES	2015	2016	2017	2018	2019
(USD millions)					
Sweden	11,399	12,389	13,216	13,519	13,188
Europe	4,933	4,981	4,496	4,768	5,677
North America	2,477	2,740	2,778	3,155	3,889
Latin America	1,584	2,014	2,653	3,821	4,314
Asia	5,370	5,107	7,041	6,148	6,464
Africa	541	495	449	361	357
Australia, etc.	882	905	1,033	1,384	1,544
TOTAL	27,186	28,631	31,666	33,156	35,433

Major Competitors

Saab's principal competitors include divisions of Airbus, Boeing, BAE Systems, Dassault Aviation, Leonardo, Lockheed Martin, MBDA, Naval Group, Northrop Grumman, Raytheon, and ThyssenKrupp.

Saab**Strategic Outlook**

The COVID-19 pandemic continues to have a major impact on people, countries, and companies around the world. So far, companies that consist of a diverse business portfolio, such as Saab, have been able to weather the crisis. Saab's civil business is facing a larger impact from the pandemic, with demand in civil aviation being significantly down. However, the company defense operations have remained strong thanks in large part to earlier efforts to expand its entrance into international markets.

Over the years, with a limited home market for support, Saab has had to look abroad for growth. As it seeks to stay competitive, Saab has adapted to the current economic environment through international partnerships. Through a series of acquisitions and joint ventures, Saab has aggressively penetrated new markets in India, Brazil, and, most notably, the United States.

Though not without risk, the push into the world's largest defense market does make sense. However, Saab may face some difficulty breaking into the market. The pressure from the U.S. government to buy local has been amped up under the Trump administration. To counter this, Saab has established partnerships with U.S. aerospace and defense firms. Such teaming up would create perceived support for U.S. firms, making the acceptance of Saab products for military consumption all the more palatable. True to this strategy, the company teamed with Boeing in late 2013 to offer a new clean-sheet aircraft design for the USAF T-7A Red Hawk (formerly T-X) trainer program – a program the partnership won in late 2018.

Under current plans, the Air Force intends to purchase 351 T-X aircraft (including the five EMD aircraft) and 46 simulators. Initial Operational Capability is scheduled to occur by 2024, with Full Operational Capability slated to happen by 2034. Saab supplies the aft fuselage and other components and systems for the T-X aircraft. Saab intends to perform this work at a new, purpose-built facility in West Lafayette, Indiana.

This win is expected to open the door for partners to score additional trainer buys. In the U.S. alone, potential is great for an increased buy from the USAF. In addition, the T-X aircraft could be selected to replace the U.S. Navy's T-45 Goshawk trainers. The Navy has a fleet of nearly 200 T-45s. With its USAF imprimatur, the Boeing/Saab T-X aircraft will be a formidable contender for sales on the global advanced jet trainer market. Furthermore, the T-X design could be adapted for use as a light fighter or light attack aircraft, thus opening up that portion of the military aircraft market to it as well.

Meanwhile, Saab's independent fighter program continues to be a strong competitor around the world. In South America, Saab scored a major coup when its JAS 39E Gripen NG was selected as the winner of Brazil's FX-2 fighter competition. The Gripen beat the Dassault Rafale and Boeing F/A-18E/F Super Hornet after a lengthy tender process. The deal, valued at \$5.4 billion, is for the purchase of 36 fighters. Aircraft deliveries are now underway and will be completed in 2024. Looking ahead, numerous sales opportunities for the Gripen exist around the globe, as a number of countries are, or will soon be, looking to replace and/or supplement aging fighters. A few more wins like the Brazilian FX-2 fighter fulfillment, and Saab may reach its ambitious goal.

However, the program is not without its share of disappointment. In mid-2019, the Gripen E was pulled from the competition following a formal recommendation from the Swiss procurement agency. According to a Saab statement, the Gripen E was disqualified because the flight tests have been designed only to evaluate aircraft that are operationally ready in 2019. This is no doubt especially disappointing given that the Gripen E was originally selected to fulfill a Swiss requirement in 2012, a decision which was nullified following a 2014 Swiss public referendum on the purchase.

At sea, Saab expanded its maritime activities with the purchase of the Kockums submarine yard from Germany's ThyssenKrupp Industrial Solutions AG. Saab pursued the acquisition after Sweden and ThyssenKrupp had a falling out over price and submarine exports. As a result, Sweden pulled A26 submarine work from the firm and tasked Saab with devising a plan for the country to maintain indigenous submarine production. Therefore, Saab is now in the process of building two A26 submarines, named *Blekinge* and *Skane*, and modifying two Gotland class boats under contracts worth nearly SEK10 billion. Beyond this, though, the future is more clouded.

According to Forecast International's *Warships Forecast*, the Swedish Navy believes it can resurrect Swedish submarine design and construction capability, but the truth is that it is far behind the curve in a fast-moving technological field. Therefore, the Navy will have to seek some level of cooperation in order to make up for lost ground. The underlying problem is that industry consolidation over the last two decades – of which the original sale of Kockums to TKMS was a part – has eliminated many of the prospective partners for such an agreement. Without such support, it is

Saab

questionable whether any additional sales will be achieved.

All told, Saab has been highly proactive in adapting to the new aerospace and defense marketplace. Although

this adaptation has sometimes been challenging, Saab proved over the years that it can make quick strategy changes and successfully correct its course. With competition in these markets becoming even more fierce, these skills will be critical in the years ahead.

Prime Award Summary

Unavailable.

Program Activity

Some important aerospace and government programs currently underway at Saab are listed below. The briefs are intended to provide a listing of programs that are of major importance to the company. For detailed information on or analysis of specific aerospace and defense programs or equipment, please refer to the applicable Forecast International market intelligence service (for example, *Civil Aircraft*, *Military Aircraft*, *Military Vehicles*, *Warships*, *Missiles*, *Electronic Systems*, and *Aviation Gas Turbines*). The following are the company's business interests:

- Aircraft
- Defense Electronics
- Missiles
- Ordnance Systems
- Space Systems
- Systems Integration
- Training Systems
- Unmanned Vehicles

Aircraft Programs

JAS 39 Gripen

The Gripen is a single-engine, all-weather, multirole, high-performance combat aircraft designed for air superiority missions, tactical ground attack/light strike, maritime strike, and reconnaissance. Development of the aircraft began in 1980 under the auspices of the JAS Industry Group, a Swedish consortium consisting of Saab, Volvo Aero Corp (now part of GKN), Ericsson Microwave Systems (now part of Saab), and FFV Aerotech (also part of Saab). The first prototype was rolled out in April 1987, and first flight occurred in December 1988. The Swedish Air Force currently has an active fleet of approximately 95 JAS 39C/D models.

In December 2013, Saab, within the framework of a previously signed agreement with the FMV for the Gripen E, received a serial production order amounting to SEK16.4 billion for operations during 2013-2026. The Gripen E made its first flight in June 2017. Gripen E deliveries begin in 2019 and are expected to run through 2026.

In December 2013, the Gripen NG was selected to fill the Brazilian Air Force's FX-2 fighter aircraft requirement. In October 2014, Saab received a contract worth approximately SEK39.3 billion (\$5.4 billion) from the Brazilian Air Force for 36 new-build Gripen NGs. The contract was finalized by the end of the month. Embraer has been tapped as a major subcontractor and partner in the joint program management effort. Saab delivered the Brazilian Air Force's initial Gripen E fighter in September 2019. Deliveries of the Brazilian Air Force's 36 Gripens are scheduled to be completed in 2024.

Overall, the Gripen has been successful on the export market, with South Africa currently operating 26 of the aircraft, Hungary 14, the Czech Republic 14, and Thailand 11. Sales opportunities for the Gripen may be found in Austria, Botswana, Canada, Colombia, Croatia, Finland, India, and the Philippines, among others. In June 2019, the Gripen E was pulled from a Swiss competition, as the procurement agency said it will only evaluate aircraft that are operationally ready in 2019.

One intriguing market niche that Saab hopes will generate some Gripen sales is the adversary air combat training segment.

Electronic Programs

9LV Mk 4 Combat Management System

The 9LV Mk 4 is a naval combat management system (CMS) that coordinates information from various sensors such as surveillance, radar, and electronic warfare systems. It brings all the ship's sensors, weapons, and communications into a single, highly integrated control system. Additionally, it is modular in design, enabling a variety of hardware and software configurations to be adapted to numerous ship classes. Production is ongoing at Saab's Surveillance unit.

Arexis

In September 2017, Saab introduced the latest addition to its electronic warfare offerings, a new product family called Arexis. The core technologies in Arexis are

Saab

ultra-wideband digital receivers and DRFM (digital radio frequency memory) devices, gallium nitride solid-state active electronically scanned array (AESA) jammer transmitters, and interferometric direction-finding systems. The Arexis jammer pod has the capability to screen the approach and departure of entire strike formations against low-frequency radars by the smart utilization of DRFM-based jamming techniques such as smart noise, coherent false targets, and various saturation techniques. One version of Arexis is the EW suite on board the new version of the Gripen fighter, the Gripen E/F.

ARTHUR

ARTillery HUNting Radar (ARTHUR) is a mobile weapon locating system (WLS) and fire control radar. The system is used for locating enemy artillery from behind the friendly front line. The system's mobility allows frequent moves from one location to another without being detected by the enemy.

BOL Countermeasures

The BOL family of chaff and flare dispensers is designed to enhance aircraft protection by providing facilities for decoying and deflecting radar and infrared-guided missiles. The BOZ-100 model is deployed on the Saab JA-37 Viggen, Saab JA-35 Draken, SEPECAT Jaguar, and Panavia Tornado. The BOZ-3 is used on tactical aircraft and on the Learjet 24 for training purposes. The BOP series pyrotechnical dispenser is intended for use on medium to light tactical aircraft. The BOL integrated missile launch rail/chaff dispenser also equips Harrier GR.7, Sea Harrier FA.2, F/A-18, and F-14 aircraft. The largest demand for systems is driven by the need to equip the Eurofighter Typhoon.

In July 2018, Saab received an order from BAE Systems for development of a new BOP variant pyrotechnic system for the Eurofighter Typhoon called Smart Dispenser System.

Erieye

Erieye is an airborne early warning and control (AEW&C) system based on an active phased-array pulse-Doppler radar produced by Saab. The radar has equipped Saab 340s and Embraer EMB-145s. Saab 2000 aircraft will be equipped with the Erieye as well. The Erieye is in service in Brazil, Greece, Mexico, Pakistan, Saudi Arabia, Sweden, Thailand, and the UAE. In 2016, Saab refreshed its Erieye line, announcing the next-generation GlobalEye AEW&C aircraft. The GlobalEye utilizes the Erieye ER radar on board a Bombardier Global 6000 platform. The UAE was announced as the lead customer. Requirements to replace both NATO and U.K. E-3s could lead to Erieye

ER orders. In 2019, Saab began pitching the GlobalEye to Finland and the Republic of Korea, which could lead to up to six Erieye ER sales.

Giraffe

Giraffe is a G/H-band, pulse-Doppler, medium-range surveillance radar for use in air defense ground environments. It is also known as the Ground-Based Multi-Role Surveillance System. Giraffe is designed to work with a variety of short- and medium-range surface-to-air missile (SAM) and/or anti-armor (AA) artillery systems. The recent release of the Giraffe AMB Mod C and impending arrival of the Mod D specifications will fuel an influx of modernization contracts and orders for new-build units.

The PS-05/A is a multirole airborne radar designed for fighter aircraft. Thus far, the PS-05/A has been fitted onto only the Swedish-built Gripen multirole fighter. It is used for air-to-air and air-to-ground functions, including long-range search, ground mapping, and missile fire control.

Raven ES-05

The Raven is a compact AESA radar with an electrically driven swashplate, allowing the AESA to cover a wide field of regard. The Raven ES-05 is a collaborative program between Leonardo (formerly Selex ES) and Saab for the JAS 39 Gripen E/F fighter. The radar can also be retrofit to Gripen C/D aircraft.

Missile Programs

IRIS-T

IRIS-T is a short-range air-to-air missile developed by BGT. Saab Dynamics is a major subcontractor providing system development, seeker optics, and image processing, as well as integration with the Gripen.

Meteor

This is a medium-range air-to-air missile under development at MBDA. Saab Dynamics is providing the missile warhead's proximity fuze. The Meteor will meet the U.K.'s SR(A) 1239 Beyond Visual Range Air-to-Air Missile (BVRAAM) requirement and those of various other operators of the Eurofighter Typhoon.

RBS15

The RBS15 is a family of anti-ship missiles developed and produced by Saab Dynamics. The RBS15 is in production and service around the world, with development continuing. The most recent variant is the RBS15 Gungnir, which Saab is producing under a SEK3.2 billion contract (\$359 million) awarded in March 2017. The program will run through 2026.

Website: <https://saab.com/rbs15family>

Saab**RBS23 BAMSE**

This is a medium-range air defense system developed and manufactured by Saab Dynamics. Development of the RBS23 BAMSE is complete. A series production contract was issued in July 2000 and deliveries began in 2003. Saab Bofors Dynamics delivered the first RBS23 BAMSE fire unit in May 2008 to the Swedish Army's Air Defense Regiment Lv 6. So far, the Swedish Army is the only customer for the RBS23 BAMSE system.

RBS56 BILL

These are surface-to-surface anti-tank missiles developed and manufactured by Saab Dynamics. Bantam is the standard anti-tank missile for the Swedish and Swiss armies. Wire-guided, it can be suitably operated by a single infantryman. RBS53 Bantam and RBS56 BILL 1 production is complete. BILL 2 production is winding down.

RBS70

This is a portable, short-range anti-aircraft missile system developed and manufactured by Saab Dynamics. The RBS70 Missile Mk 1 is out of production. The Missile Mk 2 began to replace the Mk 1 on the production line in 1989. Production is complete, though upgrades of existing systems utilizing the BOLIDE missile continue.

RBS90

This is an autonomous short-range anti-aircraft missile system developed and manufactured by Saab Dynamics. Deliveries of the RBS90 to the Swedish Army started in 1992. The system has been fully operational since 1993. The RBS90 system uses the BOLIDE missile.

TAURUS

This is a modular air-to-surface standoff weapon designed to attack (day/night) a variety of stationary and moving targets (including armored targets). TAURUS Systems GmbH, a joint venture of MBDA Deutschland and Saab Dynamics, is producing the system. TAURUS is currently operational with Germany, Spain, and South Korea.

Ordnance Programs**AT4/M136 and AT12T**

These are man-portable anti-armor weapons developed and manufactured by Saab Dynamics. In Sweden, the AT4 has replaced the earlier Miniman weapon. In the United States, where the weapon is designated the M136, it has partially replaced the older versions of the M72. The AT12T was designed to be a greatly enhanced version of the AT4, which was developed to defeat heavier armored vehicles (including those mounting explosive reactive armor). The U.S. Army

resumed procurement of M136A1 AT4-CS (Confined Space) version in FY17.

Carl Gustaf M2/M2-550/M3

This is a reusable man-portable anti-tank/assault weapon for use by infantry on the move. The weapon's FFV 441B and other rounds enable the Carl Gustaf to be used for a wide variety of battlefield targets. This 84mm man-portable multirole recoilless rifle is used by Sweden, the United States, Australia, Austria, Cambodia, and Japan, and by the militaries of 30 other countries around the world. Saab's Dynamics maintains the marketability of the Carl Gustaf through the development of new rounds. In October 2014, Saab introduced the Carl Gustaf M3A1 MAAWS. This new variant weighs approximately 15 pounds, offering a significant weight savings. In FY18, the U.S. Army commenced serial procurement of the M3A1 MAAWS. U.S. Marine Corps procurement commenced during FY19.

MBT LAW

MBT LAW is a light one-man anti-armor weapon built on proven technology from the company's existing BILL 2 and AT4CS products. Saab Dynamics provided the original funding for development of the MBT LAW. Following the May 2002 selection of the weapon to fill the British SR(L) 1498 Next-Generation Light Anti-Armor Weapon (NLAW) requirement, final development of the weapon was undertaken by Saab Dynamics and Thales Air Defence. In May 2002, Saab Dynamics was appointed as preferred supplier of the NLAW program for the British and Swedish armies. Development took place mainly in Sweden, with production mainly in Great Britain. Serial production is ongoing.

Strix Guided Anti-Armor Projectile

Strix is an autonomous, guided, 120mm mortar projectile designed for the long-range destruction of tanks and other armored vehicles. In July 1991, Sweden placed an initial production contract for the Strix. The production line is currently dormant, but Strix is available for new orders. Sweden and Switzerland remain the only customers for Strix.

Unmanned Vehicle Programs**Double Eagle**

This is an unmanned undersea vehicle. Developed by Saab Underwater Systems, the Double Eagle can be used for the location, identification, and destruction of sea mines, as well as for civilian underwater operations such as exploration and the investigation of wrecks and maritime life, and for control and monitoring purposes. Saab is working on the TMS 2010, a possible replacement for the Double Eagle. Saab has also



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developed Sea Wasp, which can relocate, identify and neutralize underwater improvised explosive devices (IEDs). Saab leveraged technology from its Seaeye line of commercial ROVs to develop this system.

Neuron

In June 2007, France's DGA announced that the Neuron UCAV demonstrator had entered its definition phase. Dassault heads the consortium that is developing this unmanned aircraft, with participation from Italy, Sweden, Spain, Greece, Switzerland, and France. The definition phase was to validate the design, freeze its shape, and detail its components and interfaces. Once completed, a demonstrator was developed and assembled for a first flight. In January 2011, Saab delivered the front and central fuselage sections of the Neuron European UCAV technology demonstrator to Dassault Aviation. The maiden flight of the Neuron occurred in late 2012. The Neuron program is expected to lead to production of a UCAV platform and spawn further pan-European cooperative development programs.

Swedish UCAV

In December 2005, the Swedish government decided to participate in the Neuron European UCAV-demonstrator program. The move secured Saab's participation in the program, along with partner Dassault Aviation. The decision meant that Saab, through the Swedish Defense Materiel Administration, would finance Swedish participation with an investment of SEK600 million (up to a total of SEK750 million).

In June 1999, Saab's Future Projects and Technology business unit was contracted to study the feasibility of developing a UCAV for use by the Swedish armed forces. If successful, the program could provide a UCAV to complement existing manned combat aircraft. The Swedish UCAV project is part of the National Aeronautics Research Program (NFFP) 272.

The UCAV project will be aimed at providing a ground attack aircraft that can be used against heavily defended targets. The company is focused on developing a system with a low production cost and minimal radar signature. Work under this program is being done by Saab Dynamics, among others.

Saab is also working on demonstrator programs and has already flown a UCAV demonstrator called SHARC (Swedish Highly Advanced Research Configuration). The main objectives of the SHARC program were to demonstrate strike missions, low signature features, high survivability, internal weapon-bay functionality, and autonomy.

Another demonstrator program is FILUR (Flying Innovative, Low-Observable Unmanned Research), the

purpose of which is to test stealth operations and the use of such a platform as an aggressor against surface-to-air weapons systems.

Torpedo 2000/NLT

This is a heavyweight acoustic homing torpedo developed by Saab Underwater Systems. Production is believed to be complete, with approximately 740 units produced. The Royal Swedish Navy is the only operator of the Torpedo 2000. The Swedish government has contracted with Saab for development of the New Lightweight Torpedo, also called Torpedo 47 (Tp47) and Type 47. Stockholm wants to upgrade the nation's naval combat capability, especially its underwater warfare capability. The NLT will replace the Royal Swedish Navy's inventory of Tp45 lightweight torpedoes.

V-150 Skeldar

Saab unveiled its V-150 Skeldar UAV system at the 2006 Eurosatory exhibition. Skeldar is an old Nordic word for "shield." This UAV is based on the Autonomous Probe for Industrial Data acquisition (APID) 55 platform, which was developed in the late 1980s by the Swedish National Defense Research Establishment and the University of Linköping. Saab developed this UAV for military as well as civil use. Flight trials began in May 2006, and tactical trials started in 2007. Additionally, Saab is funding a study of the V-250 Skeldar M, which is a maritime version of this UAV. This air vehicle weighs 250 kilograms. UMS Skeldar, a joint venture between Swiss-based UMS Aero AG and Saab, handles Skeldar production and marketing. In December 2015, Saab formed a joint venture with UMS Aero Group of Switzerland for further development and manufacture of the Skeldar system. UMS Skeldar will offer fee-for-service contracts.

Warship Programs

Blekinge Class SSK

This is a next-generation conventionally powered submarine. In February 2010, Saab Kockums signed a contract with the FMV for the design of a next-generation submarine known as A26 (since renamed the Nasta Generation Ubat). Saab Kockums is prime contractor for the order. According to the company, the next-generation submarine features several advances in the development of underwater technology and marks the adaptation of submarines to conduct the international missions now required. This refers particularly to the submarine's role as an information gatherer. "Next-generation" refers to further refinements in terms of stealth technology. The submarine will be able to see and hear everything over a wide area while remaining undetected. The Nasta

Saab

Generation Ubat will be designed to be efficient in the Baltic and other littoral waters. Two new Nasta Generation Ubat submarines are being built under an SEK7.6 billion (\$916 million) contract. Deliveries will start in 2022 and end in 2024. In January 2019, the

Swedish Navy revealed that the first pair of Nasta Generation Ubat program submarines will be named *Blekinge* and *Skane* after two provinces in southern Sweden.

U.S. Contract Awards

The following is a listing of major contracts awarded to Saab from the U.S. government in the recent past (contracts as of press date). Note that the Description section is excerpted directly from U.S. DoD listings. For full details on individual contracts and their associated modifications, visit <http://www.defense.gov/contracts>

Date	Award (USD millions)	Contract #	Description
9/21/16	38.1	N00019-16-C-5000	DESIGN, DEVELOPMENT, MANUFACTURE, INTEGRATION, DEMONSTRATION, AND TEST OF THE SPN-50(V)1 RADAR SYSTEM FOR AIR TRAFFIC CONTROL ABOARD NAVY AIRCRAFT CARRIERS & AMPHIBIOUS SHIPS - SAAB DEFENSE AND SECURITY.
9/28/16	7.2	W56HZV-16-D-0138	LIVE-FIRE TRAINING RANGE SUPPORT - SAAB DEFENSE AND SECURITY.
9/22/17	16.9	N00024-17-C-5381	COAST GUARD OFFSHORE PATROL CUTTER MULTI-MODE RADAR (MMR) SYSTEMS.
3/16/18	?	W56HZV-18-D-0002	SAAB DEFENSE & SECURITY USA LLC, ORLANDO, FL, WILL SHARE IN A \$125,000,000 FFP CONTRACT FOR THE ARMY TARGETRY SYSTEMS PROGRAM.
3/30/18	?	W911QY-18-D-2011	SAAB BARRACUDA LLC, LILLINGTON, NC, WILL SHARE IN A \$480,000,000 FFP CONTRACT FOR DEVELOPMENT & PROCUREMENT OF THE ULTRA-LIGHTWEIGHT CAMOUFLAGE NET SYSTEM INCREMENT 1.
9/27/18	8.2	N68335-18-C-0693	RESEARCH & DEVELOPMENT OF AN X-BAND ACTIVE APERTURE ARRAY RADAR PROTOTYPE IN SUPPORT OF THE OFFICE OF NAVAL RESEARCH & THE OFFICE OF THE SECRETARY OF DEFENSE FOREIGN COMPARATIVE TESTING PROGRAM.
4/30/19	17.2	N00024-17-C-5381	PRODUCTION OF THE MMR SYSTEMS.

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