DEFENSE

Turkish Defense Industry becomes regional powerhouse

In the town of Tuzla, near Istanbul, private Turkish shipyard RMK Marine has begun construction work on the first of four big search and rescue vessels for the Turkish Coast Guard. The Italian-designed vessels will each be 240 feet long, 33 feet wide and capable of 22 knots an hour.

Nearby, another shipbuilder, Yonca-Onuk, has developed high speed boats for the Turkish Navy and Coast Guard. It has already delivered more than 25 fast intervention vessels for the Turkish Coast Guard, and exported several to Pakistan and the Turkish Republic of Northern Cyprus. Capable of speeds up to 60 knots, the boats are designed to protect the littoral of the three states.

RMK Marine and Yonca-Onuk are just dozens of Turkish defense contractors that have emerged since the mid-1980s, producing military hardware for the Turkish armed forces and for export markets. Turkish defense products range from modern jet fighters and complex components for antiaircraft missiles to high speed patrol boats and frigates to armored vehicles and sophisticated air defense and electronic command and control systems.

Heavy investments in defense industries in the past two decades have helped modernize Turkey's military into a crack fighting force while reducing the country's dependence on costly imported weapons. Its investments in defense also reflect Turkey's growing military might in a conflict-prone region stretching from the Balkans to the Caucasus and the Middle East.

Turkey's new defense procurement strategy**,** announced in 2004 and reaffirmed in 2007, seeks a greater contribution from Turkish firms in defense projects and aims to increase the rate of domestic inputs into defense purchases, presently 25 percent, to 50 percent by 2010. Defense Industry Undersecretary, Murat Bayar, said: "*An investment of $3-3.5 billion is being made - apart from logistics - on an annual basis. Twenty-five percent of this corresponds to manufacturing in Turkey and 75 percents foreign. This ratio is a minimum of 50% in the countries similar to us."*

The turnover of the members of the Defense Industrialists Association stood at $1.720 billion in 2006, up from $1.591 billion in 2005, and exports climbed to $351.9 million from $337.4 million. Plans were underway to bolster exports to $1.5 billion by 2010. The country exports its products from Middle East to Africa and from Europe to the Far East.

TURKISH DEFENCE INDUSTRY

YEAR	SALES	EXPORTS	RESEARCH & DEVELOPMENT
2004	**1 337 120 000**	**196 341 000**	**63 860 000**
2005	**1 591 162 692**	**337 422 986**	**78 511 203**
2006	**1 720 405 000**	**351 989 000**	**80 089 000**

Source: Turkish Defense Industry Manufacturers' Association

An estimated 200 private and state companies operate in Turkey's defense industry. Most of the companies turn out products mainly for civilian use. But about 30 companies manufacture mainly for the armed forces. A number of foreign defense contractors, including **Sikorsky Corp., General Electric, United Defense LP** and **Loral Corp**. of the U.S., have direct investments in Turkey.

The need to develop a domestic defense industry came to a head during 1975-1979 American Congressional embargo on sales of military equipment to Turkey, the nadir in Turkish-U.S. relations. The U.S. slapped the arms embargo on Turkey, a NATO ally, because it used American weapons in its occupation of Northern Cyprus in 1974. During the arms embargo, half of Turkey's military aircraft were grounded due to the lack of spare parts.

Turkey has a long tradition in defense industries.

The **Taşkızak Naval Shipyard** along the shores of Istanbul's Golden Horn has been producing warships since 1455. Galleons constructed at the shipyard in the 16th century helped fleets commanded by Ottoman Grand Admirals Hayruddin Barbarossa and Turgut Reis (Dragut) to turn the Mediterranean into a Turkish sea. The **Taşkızak Shipyard** built the Ottoman Empire's first steamboat in 1828 and first submarine in 1886. The shipyard has constructed more than 2,500 ships since its founding and 140 naval vessels since 1941, including landing craft, patrol boats, coast guard vessels, tankers and coasters. It also turns out cargo ships and small oil tankers for civilian use.

When Turkey launched its major military modernization plans in the mid-1980s, the task of developing indigenous defense industries was given to the Undersecretariat of Defense Industries (SSM).

Since its founding the SSM has started up two dozen defense manufacturers and more than 50 projects. It has financed projects through fixed levies paid by consumers on a variety of imported goods, cigarettes, alcohol and legal gambling.

Many of the industries have been established under government-to-government offset agreements, under which defense import procurements have been paid for by exports of domestically manufactured military and other products.

The SSM has insisted that large-scale exporters of defense products to manufacture their goods in country Turkey if they want to continue selling to the nation. Some of the investment projects it has encouraged are linked to all-NATO defense programs with the Turkish companies producing key components for assembly in other countries.

The country's defense budget was about $10 billion in 2002. From 1996 to 2000, annual defense spending averaged 4.48 percent of Turkey's Gross Domestic Product (GDP), according to Annual per capita defense spending is around $143.

With a military expenditure of $9.9 billion, Turkey ranks the 5th largest country in Europe, and 4th largest in the Middle East in defense spending, according to the latest data of Stockholm International Peace Research Institute (SIPRI).

Among major players are Turkish Aviation Industry (TAI), and electronics manufacturers Havelsan and Aselsan. Some of the recent achievements of local producers include the following:

- ✓ Havelsan realized the first-ever CN-235 simulator export of Turkey. This was worth $30 million and destined to South Korea.
- ✓ Vestel and SSM agreed on the production of a €25.3 million simulator for radars.
- ✓ Eurofighter offered Turkey a $9 billion industrial contribution contract for 120 aircraft.
- ✓ Electrical design of the Patrol and Anti Submarine Warfare Ships Acquisition Project is being carried out by Anel. The program comprises up to 12 vessels, with the first 8 to be completed by 2008 at a cost of $1.6 billion.
- ✓ Kalekalıp signed a contract to realize the Mini Manless Air Vehicle Project.
- ✓ TAI agreed with Northrop to produce aircraft bodies under a 20-year industrial participation worth $4.3 billion.
- ✓ Commercial vehicle manufacturer and defense contractor Otokar signed a $500 million contract to design and build "national" battle tanks.
- ✓ Italian Westland in 2007 signed a $2 billion contract TAI and the SSM to build attack helicopters.

The Turkish Armed Forces widely relies on the United States and NATO for equipment and technology. The rate of dependence is estimated to be 50-60 percent as far as the land forces is concerned. In the air forces, the rate goes up to as high as 80 percent.

The armed forces of Turkey and the U.S. have been cooperating in Turkish military operations in northern Iraq against Kurdistan Workers Party (PKK) terrorist organization with the U.S. providing satellite information on the camps of the outlawed terrorist organization.

On the U.S. and Turkey Defense Relationship

The Turkish defense industry, in line with the strategy of the Government Defense Procurement Agency is focusing on indigenous solutions for brand new platforms, modernization and joint development programs. This inclination des not mean the reduction in the volume of defense business of the U.S. companies in Turkey. On contrary, the new model will give more room for cooperation in the long term with the American companies for subsystems, technological investment and production materials.

Turkey has been building up its modernization capabilities for the US-origin platforms such as F-16, S-70, C130, T38. An important aspect of this accumulation of know-how at TAI, TEI, other Turkish Industry and Military Air Supply Centers would be the integration with the third countries' modernization needs. The business base can also be extended to cover the logistics, MRO and modification needs of the US Armed Forces' platforms in the region.

Should the opportunities are treated well bilaterally, project-based partnership would offer broadened opportunities to extend the business model from pure one-way seller-buyer relation to a partnership relationship as is the case in the JSF Program. The latter, which is modeled for partnership in development, production and sustainment phases, is a good sign of long-term bilateral relations between the US and Turkish industries.

Source: Muharrem Dörtkaslı, TAI

Turkey has a growing involvement in the European aerospace sector. It has joined the Airbus A400M military transport consortium and has ordered 10 craft. Turkey is a partner in the US-led

Joint Strike Fighter consortium, but a role in an alternative Eurofighter consortium is not ruled out.

Within this framework, the process of EU membership could lead to a cutback in the relatively high level of defense expenditure of Turkey. The reduction could be offset to some degree by Turkey's goal of a smaller but better-equipped army, which may result in a higher proportion of defense expenditures going on purchases of equipment.

24 Major Projects to be completed in 10 Years

As stated in mid-2006, the Defense Industry Undersecretariat targets to finalize a total 24 projects in the coming ten years. The main projects include the following:

- Phoenix II program (the depot level maintenance capabilities of 30 Eurocopter AS 532 UL/AL Cougars);
- Purchasing of 16 Sikorsky S-70B Seahawk helicopters;
- Helicopter Electronic Warfare Suite (HEWS) Upgrade for 145 new attack helicopters;
- A $1.1 billion deal in April 2005 to upgrade F-16 fighter jets;
- Plans to buy nearly 120 F-35s to replace aging F-4 and F-16s after 2010 (about an over $10 billion deal);
- The upgrade of the second batch of 48 F-4 planes;
- Structural and avionic modernization of 50 NF / F-5 A/B;
- Replacement of SF-260D and T-37C by a T-X single primary and basic trainer aircraft.
- Participation in the Military Transport Aircraft (A400M), taking a 9% stake.
- Procurement of 12 light –middle class reconnaissance observation helicopters
- Procurement of 16 new patrol boats

Major deals concluded in 2006 and early 2007 include the following:

- Modernization of 216 F-16 at $635 million – with Lockheed Martin.
- Procurement of 100 F-35 at $4.3 billion from Lockheed Martin

The 2023 Vision

The 2023 Vision study[1] of the Defense, Aeronautics and Space Industries Group recommends definition and implementation of programs under three main headings:

- Low altitude space vehicles and systems
- Manless land, marine and aircraft

[1] The "Vision 2023: Strategies for Science and Technology" project involves the first-ever national foresight exercise of Turkey, together with three more sub-projects that aim at collecting and evaluating data on the current science, technology and innovation capacity of the country. It is an ongoing project, which aims to build an S&T vision of Turkey, and to develop S&T policies for a time period of 20 years.

- Technologies and components for joint use

A fund of $700 million has recently been allocated for the National Aeronautics and Space Project which was designed under this program. The Defence, Aeronautics and Space Industries Group envisage the following targets for 2023:

TARGETS FOR THE DEFENSE INDUSTRY

	2002	**2023**
Defense expenditure per capita ($)	130	534
Defense spending ($ billion)	9	48
Defense spending /GDP (%)	0.05	0.03
Ammunition, equipment spending ($ billion)	5	14.4
Local equipment and R&D spending ($ billion)	0.9	11.5
Production per employee in the sector ($/ man year)	50,000	250,000
Exports per employee in the sector ($/ man year)	10,000	58,500
Personnel employed in the sector	25,000	60,000
Defense R& D personnel	1,500	10,000