

Iran

I. Current National Security Situation¹

Since the toppling of Shah Reza Pavlavi, long-standing international economic sanctions against Iran, combined with the conservative Shia Islam of the ruling religious mullah elite with great antipathy to the West and Israel have produced complex national security requirements for Iran. Striving to re-establish its traditional sphere of influence in the Persian Gulf region as its major player, Iran faces challenges not only from the West, and especially the United States, but also from local powerful and influential potentates.

Iran's primary national security concerns are predominantly "local" relating to maintaining the internal security of the country. This translates to maintaining the security of the fundamentalist revolution that began with the overthrow of the Shah in 1979. Iranian security has three focal points: securing the country against opposition elements like Iraqi sponsored Mujahedin operating along Iran's border with Iraq; maintaining territorial integrity against long standing potential secessionist movements in Azerbaijan and Kurdistan; and preventing the incursions of religious ethnic insurgents into Iran from Iran's neighboring states. Such incursions could originate especially from those states in the process of decomposition such as Iraq and Afghanistan or in conflict like Azerbaijan and nearby Tajikistan.

Military requirements

The mission of Iran's Armed forces is to assure the territorial integrity of the country.² Subsequent to the end of the eight-year Iran-Iraqi conflict that decimated Iran's military capability, Iran has been in a gradual armament and military infrastructure rebuilding process. Given the political isolation Iran faces and the multitude of its threats from a US presence in the region, a hostile Iraq to the west and uncertain ethnic tensions within the states to its north and east, Iran has embarked on a substantial rearmament program.

The immediacy of Iran's concerns for its internal security posed by threats on all its flanks will preoccupy its military to concentrate on diminishing the likelihood that the stability inherent in those regions does not spread to Iran. Accordingly, Iran has concentrated its military strategies on two primary goals:

- Maintain the internal security of Iran to prevent the rise of nationalistic uprisings among its ethnic-religious minorities. The potential for these uprisings is fueled by conflicts in countries to the north of Iran as well as in Afghanistan to the east.
- Confine the access of the United States to the Persian Gulf. Iran's deployment of anti-ship missiles such as the Chinese Silkworm system at the Strait of Hormuz and the purchase of submarines with mine-laying capabilities support this objective.

The Iranian ground forces remain incapable of modern combined arms combat. This is due to its adherence to outmoded doctrinal concepts, an inappropriate force structure largely relying on straight infantry formations and an inability to effectively integrate air and ground operations throughout Iran's rugged terrain, large size and great operational depth.³ Iran's air and air defense forces are the weakest link in the overall defense posture of the country. This situation will remain so until the modernization of Iran's aircraft occurs, the numbers of such aircraft increase and the training of its pilots and depth of its repair parts inventory improve. The majority of the inventory of the replacements to its aging U.S. manufactured fighters and fighter-bombers is a mix of Russian and Chinese aircraft. Despite serious problems that are currently being addressed through foreign arms acquisitions and the indigenous development and production of Azarakhsh and Tandar military trainer aircraft, Iran's air force has a modest offensive capability. However, Iran remains vulnerable to attack from the air due to the poor state of its air defenses.⁴

The navy is perhaps Iran's most important military service. The Persian Gulf must remain open for Iranian commerce since the Gulf is the primary route for all of Iran's oil exports and most of its trade. However, Iran's current navy structure is outdated and in need of substantial modernization, an effort that Iran is gradually attempting to accomplish. For the present, Iran's naval capacity remains limited and barely supports its status as essentially a coastal defense force.⁵ Iran's economic dependence on the free and interrupted use of the Persian Gulf for its commercial shipping combined with its past lessons in confrontations with the United States Navy in the 1987-88 time frame have reinforced Iran's determination to rebuild its naval forces.

As a result of its vulnerability to air attack due to the significant deficiencies in its strategic air defense system, Iran is building up its strategic missile forces as a cost effective way of countering the stronger air forces of its neighbors and compensating for its weakness in this area.⁶ Iran's strategic weapons development program is its top military priority; by all indications, the portion of the budget devoted to this program remains substantial despite the fact that severe financial pressures have forced major cuts elsewhere. Iran's effort will continue to be focused on building the infrastructure needed to produce nuclear weapons, the production of biological weapons and the acquisition or production of missiles and strike aircraft to deliver them.⁷

Defense expenditures

In 1997, Iran's military expenditures were \$4.7B (1997\$US), compared with \$6.7B (1997\$US) in 1991.⁸ This placed Iran 26th globally.

II. National Defense Industrial Base

Iran's modern defense industrial base was developed during the period of the Shah by an import substitution strategy, in which Iran would learn to produce, assemble, repair and maintain military equipment. The United States and the UK were principal suppliers of aircraft, armor, and small arms. Beginning in the mid-1970's, Iran signed co-production

agreements for licensed manufacture of aircraft, helicopters, surface-to-air missiles, and computer and electro-optic equipment.⁹ Four state-owned organizations constituted the main elements of the defense industrial base. The Military Industries Organization (MIO) was the main control center, and also produced small arms, rockets, mortars, and artillery. The Iran Aircraft Industries (IAI) focused on fighters, the Iran Helicopter Industries (IHI) on helicopters, and the Iran Electronics Industry (IEI) on defense electronics.

After the revolution of 1979, the resulting Western arms embargo and the outbreak of hostilities with Iraq motivated both expansion of Iran's defense industries and the short term acquisition of arms on the clandestine market.¹⁰ In 1981 military production facilities were consolidated under a new Defense Industries Organization of the Ministry of Defense.¹¹ In 1983 the establishment of other military industries (under the control of the Islamic Revolutionary Guards Corps (IRGC)) was also authorized.

By the mid-1980's, Iran had the capability to make armored vehicles, light and heavy weaponry, some advanced missile systems, some aircraft parts, and artillery. Iran could also adapt imported missile systems components, assemble fighters and some tanks, and produced other modern systems under licensed production agreements. By 1990, there were over 240 factories and some 12,000 privately owned smaller concerns producing armaments, employing about 45,000 people.¹²

Expanding capabilities

The Iran-Iraq war provided the principal motivation for the expansion of the defense industrial base. The creation of a modern indigenous arms industry became an Iranian national goal. Large quantities of weaponry were needed, and there was a very high consumption of ammunition and logistics supplies. The international arms embargo, coupled with the rising costs of purchasing advanced equipment on the international market, forced the defense industry to focus on cheaper and less complex armaments. Surface-to-surface missiles emerged as a primary focus. In 1985 Iran decided to create a comprehensive missile production capability and associated technological base as a strategic national goal.¹³ Other areas of focus included small arms, artillery, and aircraft parts.

The defense industrial base was also distributed throughout the country, which helped local economies to develop. In addition to its traditional areas, the MIO expanded to missiles and missile technology, and the IAI expanded to the repair of aircraft and aircraft engines, and the production of radar and air defense systems. The IRGC industries focused on missiles, missile warheads, and aircraft. Iran also began to concentrate on the development of increased naval production capabilities. In all of these developments, direct and indirect technical help from many countries made it possible for Iran to rapidly expand the technical capabilities of her defense industrial base. These countries included China and North Korea, Pakistan, Israel, Argentina, Brazil, West Germany, East Germany, Taiwan, and the USSR.¹⁴

Overall, Iran's defense industrial base includes industries providing aircraft servicing and manufacture, and the production of mini-submarines, missiles, vehicles, mortars, artillery, small arms, mines, multiple rocket launchers, and ammunition. Iran lacks strong technical expertise, and the absence of a well-developed industrial and research infrastructure has inhibited Iran from indigenously developing and manufacturing advanced armaments.¹⁵ This weakness has given impetus to the strengthening of Iran's electronics industry as a main pillar of the future defense industrial base.¹⁶

Iranian Global Top 100 Defense Industries

Iran had no companies in the Global Top 100 defense industries in the decade of the 1990's.

III. National Armament Strategy

Although the Rafsanjani government, upon election, took steps to begin military modernization, it was the Gulf War that made it clear that a major modernization of both the armed forces and the defense industrial base was needed. It became apparent that during the period of time in which Iran was rebuilding her own defense industrial base to produce weaponry needed for the Iran-Iraq war, her neighbors were arming with much more advanced technology systems, mostly purchased from the West. Iran's air and naval forces were obsolete by comparison. Iran became committed to a strategy of defense self-sufficiency as an urgent national requirement.¹⁷ The objective of total self-sufficiency remains today.¹⁸ The benefits of self-sufficiency also include significant savings in hard currency, which is badly needed to retire Iran's very large foreign debt in order to help overall economic development.

Import strategy

Iran's armament strategy, which actually began in the mid-1980's, heavily depended on imports, and especially those from the Soviet Union, in order to achieve some kind of parity with Iraq and Saudi Arabia.¹⁹ The collapse of the Soviet Union has not appreciably changed that strategy, and potential suppliers have been willing. The former Soviet republics continued to provide arms in return for the hard currency obtained from Iranian oil, China and North Korea provided SSM, fighter, and other technologies, and European and Third World suppliers, in a decreasing domestic arms market, increased their interest in the Iran market. The net result has allowed Iran to continue to depend on its import strategy, and at lower costs because of the increased competition for market entry.²⁰

Iran has especially worked to develop arms trade relationships with China, North Korea, and Russia. Other suppliers include South Korea, Libya, Syria, Taiwan, Brazil, Sweden, Argentina, Switzerland, Pakistan, and some Eastern European countries.²¹ Additionally, in order to develop the expertise necessary to use the imported weaponry, Iran depends on Third World nations to provide training and technical expertise, including Libya, Syria, Pakistan, and Eastern European countries.²²

Self-sufficiency

Iran has declared self-sufficiency in several critical areas. Besides small arms and artillery, these include armor, and selected naval systems. In May 1998, an official announced that Iran was self-sufficient in the production of armored equipment, achieved by “acquiring sophisticated technology in related fields.”²³ In late 1997, Iran’s navy chief declared that the country was “full self-proficient” in “sea-warfare technology.” The Iranian Navy is “manufacturing its own equipment and other essential items through the work of domestic experts and the naval research center.”²⁴

Iran has also worked to become self-sufficient in the production of spare parts for weapon systems. In early 1999, the acting commander of the ground forces announced that Iran is now producing 14,000 various kinds of aircraft parts. The domestic manufacture of spare military parts has saved the equivalent of 30 billion rials in hard currency. Iran is also producing the clear majority of parts needed by its armed forces, an Iranian armed forces official announced in early 1997. This year, the army’s aviation wing will produce 90 percent of its spare parts requirements. In 1999, Iran’s Minister of Defense stated that Iran’s defense industrial base is now capable of producing the “fundamental hardware” needed by Iran.²⁵

In 1991 Iran announced the first domestic production of ballistic missiles.²⁶ Although Iran currently claims a significant degree of self-sufficiency in missile technology, there nevertheless appears to be heavy involvement of Russian, Chinese and North Korean technology.

In spite of Iran’s claims of self-sufficiency, some foreign experts believe that Iran lacks the industrial or technical capability to do “much more than enhance or splice foreign-designed weapons systems.”²⁷ As a result, Iran still has significant foreign dependencies in its armament process. In 1995, Iran contracted with India to provide specialists to upgrade and maintain its Russian-provided armaments.²⁸ In 1999 Iran also contracted with China to upgrade Iran’s F1-10 anti-ship cruise missile.²⁹

Continued development

Iran continues to seek Russian designs and equipment in order to help modernize its defense-industrial base. For example, In 1995, Iran purchased a production license for jet engines from the Russian VPK MAPO in order to gain additional expertise. The license authorizes the Iranian State Industrial Aircraft Company to produce 60 TV-117 turboprop engines for installation on Ukrainian and Russian passenger jets that also will be purchased or produced under license.³⁰ In mid-1997, Iran opened a plant to produce Russian-designed T-72 main battle tanks under license. Then-President Akbar Hashemi Rafsanjani hailed the plant as a “significant step toward technology transfer and strengthening of engineering design in Iran.” In 1999 Iran announced a domestically produced jet engine, the Tolou-4 “mini-jet,” produced by the state-own aviation industry “under the control of Iran’s defense ministry.”³¹

Although Iran uses counter-trade of oil wherever possible to finance imports in order to save scarce hard currency, Iran has not yet adopted the traditional form of offset requirements that other countries now normally impose on foreign armament suppliers.³²

Arms import level

In 1997, Iran's arms import level was \$850M (1997\$US), compared with \$1.8B (1997\$US) in 1991.³³ This placed Iran 15th globally.

IV. Perspectives on the International Arms Export Market

Beginning in the late 1980's, Iran began to try and exploit the capabilities of her new defense industrial base to provide products and services to the international arms market. Retrofits, upgrades, and overhauling existing equipment was a primary service, moving toward the sale of completed systems with time. Rockets and artillery and defense electronics were target areas of sales.³⁴ At an international arms show in Gabon in 1989, Iran offered several missiles, an APC, several mortars, and communications equipment.³⁵ Subsequently Iranian products have been displayed at other arms shows.

Recently, Iran has taken initiatives to exploit the relaxation of tensions between the Arab states to expand her international arms sales. Iran has made limited sales of armaments to the African countries (e.g., Katyusha 122 mm multiple launchers to Sudan). However the larger objective is to establish Iran as a provider of technical services, and armaments, to the Arab Gulf states. In 1999, Iran dispatched a defense industry delegation to International Defense Exhibition in Abu Dhabi that included producers of electronics, missiles, ordnance, aircraft, and small arms. However Iranian leadership believes that it may take 5-10 years to establish a market. If relations with the West continue to improve, Iranian defense companies would also like to establish partnerships with Western companies that would provide assistance and technology that would allow Iranian production of equipment to meet Western military standards.³⁶

Arms export level

In 1997 Iran's arms export level was only \$30M (1997\$US), compared with \$23M (1997\$US) in 1991.³⁷ This placed Iran 31st globally.

V. Transformations in the Defense Industrial Base

When Rafsanjani was elected as president in 1989, efforts were initiated to consolidate the defense industries and management structure so as to provide a more workable capability than the two-track (Ministry of Defense, Ministry of IRGC) structure that had developed over the previous ten years. The IRGC ministry was dissolved. At the same time, expansion of the overall defense industrial base was initiated, using the technology transfer from imports as a main facilitator.³⁸

Another source of transformation was the end of the Iran-Iraq war. Since that time, many defense industries have been significantly underutilized, with some firms operating at only 10-15 percent of their production capacity. The Iran defense industrial base currently comprises about 15-10 percent of the country's industry. Defense conversion is one solution that is being tried, as well as the privatization of some of the state-owned companies to facilitate conversion.³⁹

Currently the Iran Electronics Industries, which is Iran's largest defense company, has 80 percent of its production capacity focused on commercial electronics products. Commercial sales of radios, televisions, and cell phones have resulted in the tripling of the IEI sales volume over the past three years.⁴⁰ Iran Aircraft Manufacturing Company, another leading defense industry, is still heavily focused on defense work, but is also looking for commercial opportunities. AMC will soon start cooperative licensed-production of a Ukrainian Antonov 140 dual-use transport aircraft.⁴¹

VI. Risks and Concerns

- Iran's economy has been deteriorating for several years in the aftermath of revolution, collapsing oil prices, and war, that dictated greater state control over resources, means of production, and responsibility for domestic services. The situation has been aggravated by the population explosion. Internal deadlock in Iran between protectionist advocates vs. free trade proponents has made it difficult to move forward and to create funds for investment in technology and infrastructure. Arms imports have received significant expenditures to date. How long Iran will be able to continue its import-dependent armament strategy is an issue.
- Iran fears economic and technological isolation from a world in which other distinct economic poles have developed that, with the exception of oil revenues, have resulted in little benefit to the Middle East. This has been a principal driving force in Iran's push toward self-sufficiency, and also to move to establish regional efforts to overcome the effects of isolationism.

VII. Observations

- Iran's armament strategy, coupled with its actual infrastructure capabilities, suggest an armament situation with several internal contradictions. Indigenous capacity to produce lower technology weaponry has advanced. Iran is still import-dependent for advanced technology systems and their maintenance and may have a long-way to go before actually obtaining an indigenous capability for these systems. Ballistic missiles are a main focus, but still with help from abroad.
- Defense industrial transformations to improve competitive positions on the world market have not yet materialized in Iran. If her arms export objectives continue, there will probably need to be significant changes of the kind that have been underway in other countries if Iran is to be competitive, even in Third World markets.

- Iran is one of a few nations that is trying to achieve a totally self-sufficient armaments capability.
- Iran is entering the arms export market for the reasons many other countries have: to reduce costs and reduce excess capacity. As a late entrant, Iran may easily find that this is not a viable market, even for ballistic missiles. If this happens, there could be severe tensions between the cost of Iran's defense industrial base, Iran's overall economic situation, and Iran's goal of self-sufficiency in armaments production. Prevailing oil prices, a situation not under Iran's direct control, may be the factor that will determine how Iran will be forced to resolve the tensions.

ENDNOTES

¹ Material in this chapter has been synthesized from several sources, including: "IRGC Navy Commander: Decisive In Safeguarding Territorial Waters," *IRNA*, December 3, 1997; "Iran Able To Manufacture Airplane, Tank, Helicopter," *IRNA*, 6 February 6, 1997; "Iran Says to Produce Locally Built Fighter Plane," *Reuter*, April 14, 1997; "Iran Launches T-72 Tank Plant," *Xinhua*, July 8, 1997; Steve Rodan, "New Iran Missile 'Will Have Nonconventional Capability'," *Jerusalem Post*, July 31, 1998; "Iran, Tajikistan Review Expansion of Defence Cooperation," *IRNA*, January 21, 1999; "Army's Ground Forces Manufacture 14,000 Aircraft Parts," *IRNA*, April 12, 1999; AFP, "Iran Carries Out Test of Surface-to-Surface Missile," April 14, 1999; *IRNA*, "Mass Production of New Helicopters Begins," May 4, 1999; "Iran Carries Out Unmanned Aircraft Air Show," *Xinhua*, July 19, 1999; "Iran Continues to Develop Domestic Arms Industry," *STRATFOR*, October 21, 1997; and *STRATFOR* Global Intelligence Update. Individual sources are also cited on specific points. Portions of Section I have been adapted from Bruce Jackson, J. Battilega et al, *Trends in Foreign Perspectives on Foreign Military Operations and Associated Space Dependencies*, Science Applications International Corporation, SAIC-99-6014&FSRC, Denver, November 1999.

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⁵ *Ibid.*, p. 42.

⁶ *Ibid.*, p. 129.

⁷ Eisenstadt, op. cit., p. 101.

⁸ *World Military Expenditures and Arms Transfers, 1998*, Department of State Bureau of Arms Control, Washington, DC, January 2000.

⁹ Unattributed, "IRAN (Market Overview)," Forecast International/DMS Market Intelligence Report, May 1993, p. 2.

¹⁰ In April 1987, the US government published a list of forty-one countries that had supplied Iran with armaments, either directly or indirectly, during the period 1980-1986. ["IRAN (Market Overview)," op. cit., p.7].

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¹³ "Hashemi-Rafsanjani's Remarks," *NHK Television Network*, June 11, 1985 [FBIS-SA, June 12, 1985, p. 11].

¹⁴ Ehteshami, 1990, op. cit., pp. 44-46.

¹⁵ "IRAN (Market Overview)," op. cit., pp. 3-4.

¹⁶ Iran Defense Minister Admiral Ali Shamkhani, "Minister: Policy of Defense Industry Dependent on Electronics Sector," Tehran, November 29, 1999, *Iran News Agency*.

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- ²¹ "IRAN (Market Overview)," op. cit., p. 8.
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