

# Iran's Air Forces: Struggling to Maintain Readiness

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## Brief Analysis

Recent events, including the launch of Iran's first space imaging satellite, the announcement that Russia is selling Iran twenty-nine Tor-M1 (SA-15 Gauntlet) mobile short-range surface-to-air missile systems for \$700 million, and the crash of an air force C-130 transport plane into an apartment block in Tehran, have focused attention on Iran's evolving air and aerospace power capabilities, as well as on Iran's longstanding problems in maintaining its aging fleet of military and civilian aircraft.

## A Force Divided

Iran's air forces are divided between the Islamic Republic of Iran Air Force (IRIAF) and Islamic Revolutionary Guards Corps Air Force (IRGCAF).

The IRIAF is by far the larger and more capable service. Its main role is to defend Iran against foreign enemies; in the event of invasion, this might include long-range offensive missions. To this end, it operates some two hundred and twenty combat aircraft (F-14A Tomcats, F-4D/E Phantoms, F-5E/F Tigers, Su-24MKs, MiG-29A/UBs, Mirage F-1EQs, and F-7Ns) at various states of readiness; around fifteen reconnaissance aircraft (RF-4Es and RF-5As); at least one hundred training aircraft (F-5B Simorghs, FT-7s, PC-7/S-68s, and F-33 Bonanza/Parastooos); some forty-five transport/tanker aircraft (Boeing 707s and 747s, C-130E/H Hercules, and Fokker F27 Friendships); around thirty-five helicopters used for search and rescue and transport; and four P-3F Orions for maritime surveillance of the Persian Gulf and the Gulf of Oman. The IRIAF also operates a unit equipped with the Zelzal surface-to-surface missile, which has a range of up to 300 kilometers (the IRGC also deploys Zelzal missiles).

The IRGCAF provides close air support (CAS) and lift capabilities for the IRGC's rapid reaction units. The backbone of the IRGCAF consists of ten Su-25 Frogfoot attack aircraft (including seven flown from Iraq to Iran during the 1991 Gulf War, kept airworthy with the help of Georgian technicians) and around forty EMB-312 Tucanos -- its main CAS aircraft. The IRGCAF also maintains thirty Y-12 and Dassault Falcon 20 light transports, as well as MFI-17 Mushaqs and Super Mushaqs trainers and locally built Ababil and Mohajer reconnaissance unmanned aerial vehicles (UAVs).

The IRGCAF also operates a sizeable rotary-wing force consisting of around twenty Mi-171 helicopters for transport

and armed assault roles, and a large transport force out of Shiraz, equipped with around fifteen ex-Iraqi Il-76s (originally operated by the IRIAF) and twelve An-74T-200 transports. Due to its internal security function, the IRGC puts great importance on rapid deployment and airborne operations and regularly practices the airborne insertion of troops and equipment over relatively long ranges.

Finally, the IRGCAF operates several hundred short- and medium-range mobile ballistic missiles, including the Shahab-3/3B with a range of up to 2,000 kilometers, which is the mainstay of Iran's strategic deterrent. If Iran ever produces nuclear weapons, the IRGCAF will likely control them.

### **Institutional Rivalries and Tensions**

Rivalries between the IRIAF and the IRGCAF during the early stages of the Iran-Iraq War precluded effective cooperation between the two air services. The war taught the IRGC commanders that they needed to be able to operate independently, which required organizing their ranks into ground, air, and naval arms like the regular armed forces. As a result, in 1986 Ayatollah Ruhollah Khomeini ordered the creation of three separate branches of the IRGC, including an air force. Not surprisingly, the new service lacked the necessary technical expertise, and the ruling clerics instructed it to pass its first "advanced" fighter aircraft, Chinese Chengdu F-7s, on to the IRIAF. Since then, the IRIAF and the IRGCAF have had a tense relationship. They are not known ever to have held a single joint exercise; it is therefore unclear whether they could operate together effectively in the event of a crisis.

Despite its current status as junior partner, the IRGCAF could eventually supplant the IRIAF as the dominant air service as a result of its relatively generous funding, its active recruitment of the best graduates from technical degree granting programs, and the rising influence of IRGC-affiliated politicians, such as President Mahmoud Ahmadinezhad. In contrast, the IRIAF has been struggling to compensate for the loss of growing numbers of experienced technical personnel and aircrews to retirement; it has responded by pooling its existing technicians into centralized task forces. In the early days after the Islamic Revolution, it failed to create the training infrastructure needed to grow a new generation of technical specialists -- a problem only partly rectified by the creation of Sattari Air University following the war with Iraq. In light of these problems, it is not inconceivable that Iran's two air arms might eventually merge in order to create a leaner, more efficient, and more effective organization better able to deal with future challenges.

### **Aviation Industry**

The Islamic revolution resulted in the departure of more than 40,000 American military advisors from Iran. In March 1979 the U.S. government banned any further foreign military sales or transfers to Iran, and by November 1979 the U.S. government officially suspended all licenses for export to that country. Compounding Iran's problems, Iraq invaded in September 1980.

Sanctions forced Iran toward self-sufficiency in operating, maintaining, repairing, and modifying its existing American-built systems. The IRIAF was at the forefront of these efforts, as it had been the military branch most dependent on American assistance.

The IRIAF initially decided to produce aircraft spare parts for its own use. Teams of experts established relationships with local universities and technical schools, and by the final stages of the Iran-Iraq War, the IRIAF's Self-Sufficiency Jihad directorate (formerly the Industrial Research Unit) had set up depot-level maintenance shops in several air bases around the country. These shops were responsible for repairing systems worn out or damaged by the war.

While doing depot-level maintenance and repair, IRIAF experts drew up blueprints for aircraft parts, so that they might be reverse-engineered, using methods very similar to those used by China. A close relationship developed between the military-industrial complexes of the two countries. Many Western systems were shared with Beijing, which in turn helped Iran set up production lines for the local manufacture of these parts.

Today, Iran's aviation industries produce flight avionics and communications gear, two types of engines, airframes, in-flight refueling gear, and flight simulators. In addition, the IRIAF has produced a variety of ordnance, including both "dumb" (unguided) and "smart" (guided) bombs and air-to-air, air-to-ground, and surface-to-air missiles, including the Fatter air-to-air missile (a Sidewinder lookalike), the Sedjil (an air-to-air version of the Hawk surface-to-air missile), the AGM-379/20 Zoobin, the GBU-67/B Qadr, and the Sattar laser-guided air-to-ground missile.

The IRIAF has also begun producing aircraft. Recent examples include the Tazarve jet-trainer and the Saegheh fighter (the latter is based on the F-5E, but has a twin vertical tail configuration to improve takeoff and maneuvering performance). Both aircraft remain in the prototype stage, and Iranian industry still has a ways to go to establish a viable design and production base.

As for the IRGCAF, it has improved its technical base by concentrating most of its capability in a semicorporate entity, the Pars Aviation Services Company, which maintains the IRGCAF's own combat and transport fleet and provides services to local airlines that operate seventeen Tupolev Tu-154 passenger planes. Yet despite significant strides in this area, Iran continues to experience problems maintaining its aging fleet of military and civilian aircraft, a fact that has contributed to a number of major aviation disasters in the past decade.

### **Current Trends**

Iran is the only country in the region that does not receive ongoing support from the original manufacturers of its weapons systems. Until very recently, Russia had not been deeply involved in the maintenance of Iran's Eastern bloc weapon systems. Moreover, as a result of U.S. pressure, Russia has refused to provide Iran with newer combat aircraft beyond those ordered in the late 1980s and early 1990s, though Russia recently agreed to upgrade and modernize the avionics and weapons systems in Iran's existing fleet of MiG-29 and Su-24 aircraft. As far as new purchases are concerned, Iran has largely had to settle for semi-obsolescent designs from China.

Nonetheless, the Iranian air and air defense forces can count on the advantage conferred by strategic depth and a domestic military-industrial capacity, which has enabled Iran to keep aloft an aging aircraft fleet in the face of wars and sanctions.

Iran's senior military leaders know that its air forces would not be able to resist an invasion by a major power such as the United States. As a result, Iran has not focused on creating a large military, but rather has emphasized making the most of its existing capabilities by developing the abilities to conduct continuous, day and night operations through the development of night vision equipment; to wage asymmetrical warfare by creating a large popular militia (the Basij) and sea denial capabilities; and to strike even its most distant enemies by acquiring reconnaissance satellites, high altitude reconnaissance and strike UAVs, and short- and medium-range ballistic missile systems.

*Farzin Nadimi is an expert on the Iranian military.*



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