

## **XI. COMMAND, CONTROL, COMMUNICATIONS, INTELLIGENCE, AND BATTLE MANAGEMENT**

### **11.0 The Problems of High Command**

It is obvious from the preceding history of the Iran-Iran War that the relative effectiveness of Iranian and Iraqi armed forces was heavily affected by problems in their high command. These points have already been discussed at length, but they are critical to any understanding of why both sides had such severe difficulties in realizing their military potential. It also is easy to forget the problem of high command and to blame subordinate commanders, troops, and equipment, or strategy and tactics. One of the key lessons of the Iran-Iraq War, however, is that the armed forces of autocratic states are ultimately no more effective than their autocrat.

It may be years, if ever, before the details of the actions taken by the Iranian and Iraqi high command become public. The details that are now available are so filled with rumor, often generated by the opponents of the regime involved, that it is impossible to establish the facts. There is ample literature, for example, that criticizes Rafsanjani for constantly imposing his own ideas and beliefs on the conduct of the war. Similarly, there is ample literature criticizing Saddam Hussein for over-centralizing authority, and for politicizing his command structure. The problem is in establishing the truth, particularly in states where so little outside knowledge exists about the actions and decisions of subordinate commanders and where rumors about senior officials are infinitely easier to acquire than the facts.

What is clear, regardless of the personalities involved, is that both nations confronted their military with serious problems in acting on a basis of their military judgments, and that both states created major barriers to improving the professionalism of the military forces. It can be argued that this is true of all states and systems of government, and that the Western democracies have often had major problems in their high command that seriously degraded the performance of their forces. Iran and Iraq, however, unquestionably created unusual problems and ones that had unusual effects.

In the case of Iran, the ability of its senior Mullahs to take power over the state and armed forces meant that military decisions were shaped throughout the war on the basis of a belief in some form of divine mandate, in the primacy of revolutionary forces over military professionalism, and in the effectiveness of revolutionary fervor and human wave tactics over organization and technology.

In the end, this resulted in casualties and a lack of military effectiveness that were key factors in Iran's defeats in 1988, and in forcing it to accept a ceasefire.

In the case of Iraq, it took nearly a decade to fully realize that the Iraqi Army and other armed forces had to be reorganized on a professional basis, and that the force structure, command system, and training had to be reorganized to create a force capable of effective maneuver warfare. It is to Iraq's credit that it did eventually learn these lessons and develop far more effective forces. At the same time, even shortly before the ceasefire, Iraq's largely ineffective People's Army was still forcibly drafting men in the streets of Baghdad and Saddam Hussein or his senior colleague were interfering in command decisions that should have been left to local commanders.

The key lesson from this experience is that the effectiveness of Third World forces, like that of any other force, must be judged on the basis of careful review of the nature of its high command. Assuming that the strength of armies is a function of their size, equipment, training, and the skill of their professional military is simply unrealistic in the case of states where civil leaders interfere directly and constantly in all levels of military activity. This is particularly true in the case of highly ideological or authoritarian states where the armed forces are assumed to require constant ideological supervision and/or are a threat to the regime. It is also particularly true of the many states whose leadership and armed forces have no real prior experience in large scale warfare. Under these conditions, leadership elites are likely to seriously undermine the effectiveness of their forces and to seriously degrade the entire process of command at virtually every level.

### **11.1 Threat Assessment Technologies and Warning and Surveillance Systems<sup>1</sup>**

The major problems in Iran and Iraq's ability to develop effective and objective intelligence have already been discussed in detail in the initial chapters of this book. They were more political than technical, but it is important to note that neither side began the war with advanced technical intelligence assets, and neither could do more than acquire a few scattered improvements to its capabilities before the ceasefire.

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<sup>1</sup> This analysis does not deal with the U.S. and Soviet problems in developing adequate satellite coverage of the region. The USSR, for example, was forced to reschedule its satellite coverage during the more intense periods of tension between Iran and the West. In November and December, 1987, it was forced to alter the orbit of its Kosmos 1983 PHOTINT satellite to lower it to an altitude of only 170 kilometers over the battlefield between Iraq and Iran. Similarly, it altered the orbit of Kosmos 1985 in a way that implied it either had night coverage of the battlefield or was covering U.S. activity at Diego Garcia. Jane's Defense Weekly, December 19, 1987, p. 1400.

Neither Iraq or Iran made effective use of SIGINT, and little use was made of ELINT until Iraq improved its performance during the last year of the war. While both sides had communications with commercial quality encryption, and some decryption gear, it is unclear to what extent use was made of secure communications and how well either side could decrypt such communications even at the end of the war. Further, extensive use was made of land lines, directional microwaves, and personal conferences, and this would often have made intercepts extremely difficult.

Iraq seems to have received some intelligence data based upon such sources from third countries, but had few capabilities of its own. PHOTINT was limited largely to fighter reconnaissance aircraft, using fair weather daylight photography, during most of the war. The data obtained was slowly processed and poorly interpreted, and the evidence was then often subordinated to ideological considerations.<sup>2</sup> Iraq does, however, seem to have improved its reconnaissance capability after 1986, and to have gradually produced less politicised targeting and damage assessment data.

Both sides had developed remotely piloted vehicles (RPVs) by 1987, and may have used these systems successfully during some phases of their operations in 1987-1988. Iraq seems to have found such systems to be an important way of providing survivable real time reconnaissance over the battlefield of a kind that its fighter-reconnaissance aircraft could not provide because of their vulnerability, lack of real-time sensor/data links, and limited endurance. While neither side seem to have used such systems in great numbers, and at least the early Iraqi systems had serious sensor coverage and data link problems, both sides exhibited improved systems after the ceasefire, and felt that RPVs had great potential value.

Although numerous air control and warning radars, naval radars, battlefield radars and night vision devices were also available, the Iran-Iraq War was also very much a "visual range war". It was fought by two sides who have bought large numbers of sophisticated weapons without the proper targeting, threat and damage assessment, and warning and surveillance systems to use them. Further, the intelligence system of both sides remained heavily ideological and politicized, and much of the HUMINT it produced remained worthless from the start of the conflict to the ceasefire.

### **11.1.1 The Intelligence Problem**

It should be noted, however, that the mix of urban, marsh, rough desert and mountain terrain where the war was fought, and the heavy emphasis on night movement and dug-in positional warfare, present a challenge to the

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<sup>2</sup> ELINT = Electronic Intelligence; COMINT = Communications Intelligence; SIGINT = Signals Intelligence, and PHOTINT = Photo Intelligence.

intelligence assets of any Western state. It is extremely difficult for even sophisticated Western systems to accurately assess infantry movements, and to assess the intentions and timing of forces constantly poised for the attack.

There is no question that sensors like SAR, SLAR, FLIR, electro-optics, and added night vision devices, could have provided warning against many of the attacks conducted during the war. There also are far more sophisticated data processing assets than are available to Iran and Iraq. These could help improve the performance of Western forces under similar circumstances. The history of the war has also shown that both sides could benefit from RPVs and ELINT aircraft, and by unattended ground sensors, just as Israel used many of these systems and technologies successfully in June 1982.

Nevertheless, many Western systems sensor depend on predictable patterns of deployment, on movements of major combat vehicles and aircraft, and on the ability to intercept and analyze comparatively objective and apolitical military communications. If the intelligence target has a command structure that lies to itself, consists of many scattered elements with limited coordination, and acts without prior plans or signals of intent, intelligence coverage is difficult. This is particularly true in the case of trying to detect and predict low level actions or escalation, and the point at which long standing infantry build-ups turn to actual attacks.

Sensor technology cannot triumph over the self-inflicted wounds of ideology and self-delusion. Technical intelligence assets are heavily dependent on the accuracy of data transmitted through the C<sup>3</sup> net, on the ability to monitor land forces by tracking the movement of armor and heavy equipment, and on predictable unit effectiveness. None of these collection conditions are present in the case of Iran, and it is unclear than any Western state has yet combined the intelligence, hardware and software into systems or subsystems suited for the conditions encountered in the Iran-Iraq War--conditions which may be typical of those in other Gulf or low-level conflicts.

### **11.1.2 Air Defense Sensors**

Neither Iraq nor Iran were able to make effective use of the air warning and surveillance systems they built up before the war. The Iranian radar network--which mixed FPS-88 radars and Marconi S-330 Surveillance Radars with a semi-automated air defense system called "Seek Sentry"--was constructed during the Shah's regime.

The full Iranian system was never completed because of the revolution. Long-range FPS-100 and FPS-113 long range radars were deployed on mountain tops and TPS-43 and ADS-4 sites were scattered throughout Iran. Individual sites have been active, but they do not seem to have been operational as a unified system, or to have played a significant role in guiding air intercepts.

Iran could not correct this situation during the war because of its lack of access to supply from the U.S. or any other source of advanced equipment.

The improved Hawk anti-aircraft missiles which were linked to the Iranian radar network also seem to have had relatively little early warning or central control. While some hits must have occurred against Iraqi aircraft, there is still no confirmed instance of an Iranian Hawk missile hitting an Iraqi aircraft.<sup>77</sup>

The ineffectiveness of Iran's Hawks and other sophisticated ground-based air defenses may have a great deal to do with the over-complexity of the original design for the Seek Sentry/Peace Ruby C<sup>3</sup> system. When the Shah was in power, he purchased the most prestigious (and often the most complex) weapons of the American arsenal. The improved Hawk was one of those systems. A 1976 U.S. Senate Subcommittee report went so far as to doubt the ability of the Imperial Iranian Air Force to effectively operate the Hawk prior to the mid-1980s. Yet, the Hawk missile is a "wooden round," and Iran's problems in using the system with its own radar are unclear. Technology transfer should not have presented this serious a problem, although the combined impact of the revolution and withdrawal of foreign technical support may largely have deprived Iran of the benefits of technology transfer.<sup>4</sup>

The Iraqi early warning and SAM network was equally ineffective throughout the entire war. Although Iraq had a 10,000-man air defense force, at least ten major radar sites, hundreds of radars, and SA-2, SA-3, and SA-6 missiles when the war began. However, the Iraqi system was not netted and integrated effectively; training and readiness were dismal. The management of sensor and C<sup>3</sup>I links to aircraft and missiles was poor; and the system left major gaps in low altitude coverage.

In 1979 and 1980, low-flying Iranian aircraft continually penetrated into Iraqi airspace without incurring serious losses from the more than 3,000 major SAMs incorporated into the Iraqi air defense network. Iraq's SA-2s and SA-3s never seem to have been effective. As a result, these Iranian aircraft inflicted enough damage on Iraqi air bases and infrastructure to force the Iraqis to pull back their air units and to deploy large numbers of mobile SA-6 missiles to provide additional protection to various Iraqi facilities and Basra. Iran's ability to launch large numbers of air strikes was soon cut severely by maintenance and support problems, but Iraq never succeeded in establishing effective 24 hour air control and warning coverage of even the front along the Iranian-Iraqi border. This required Iraq to acquire and deploy large numbers of French short range

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<sup>3</sup> See Bussert, "Iran War Turns Strategic," Defense Electronics (September, 1984), pp. 136-139. Reports in late 1986 did indicate, however, that Iran had used Hawk to kill several Iraqi fighters during attacks on Kharg Island.

<sup>4</sup> U.S. Senate Committee on Foreign Relations, Subcommittee on Foreign Assistance, U.S. Military Sales to Iran (Washington: U.S. Government Printing Office, 1986).

surveillance radars -- and lighter missiles like the SA-8, SA-9, Crotale, and Roland -- to act as point defenses and fillers. <sup>5</sup>

The Iranians do seem to have begun the war with an effective IFF system, but Iraq either lacked an effective ground-based IFF capability, or relied on "Corridor" tactics. The Iraqis tried to avoid the problem of aircraft Identification Friend of Foe (IFF) by intercepting hostile aircraft as far away from defended targets as possible. All Iranian aircraft that penetrated the Iraqi fighter screen were then subjected to attack by ground-based defenses. This forward fighter screen system was intended to eliminate the problem of identifying whether a plane was hostile or friendly. The Iraqis, however, found this tactic to be unsuccessful. Their ground-based radars could not provide the appropriate amount of early warning necessary to engage their fighters or even properly employ their SAMs in point defense. Throughout the war, they were unable to detect Iranian fighters flying at low altitudes.<sup>6</sup>

The IFF/detection problem was further complicated throughout the war by the close proximity of many Iraqi targets to the front. Iraq lacked the technology to compensate for its lack of strategic depth. Data transfer from GCI sites was poor. The various export models of the MiG-21 and MiG-23 available to Iraq had no real "look-up" or "look-down" capability, and lacked the radar range and air-to-air armament to use GCI data effectively. The French Mirage F-1 has since reduced some of these problems in terms of aircraft capability, but Iraq remains unhappy about the quality of its Soviet-supplied AC&W and GCI equipment, and has actively sought more advanced West European and improved Soviet equipment since the ceasefire .

### **11.1.3 The Need for an AWACS and Satellite Capability**

Terrain was a critical factor in determining the effectiveness of various sensors and command and control systems. Both sides suffered badly from the lack of airborne sensors or AEW or AWACS aircraft, although Iran exploited terrain making of ground-based radar at the start of the conflict.

Iranian pilots displayed considerable initiative and managed to use terrain masking effectively on their approach to Iraqi targets. This pilot initiative was the result of a decision on the part of the Iranian leadership to release a number of previously incarcerated air force officers.

In contrast, the Iraqi Air Force initially flew "textbook" medium altitude approaches and used comparatively high altitude, weapons delivery profiles, and tried to bypass Iranian SAM defenses. This greatly aided Iranian air intercepts,

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<sup>5</sup>Colin Legum, et al., Middle East Contemporary Survey, Vol. IV (New York: Holmes and Meier, 1981), p. 41.

<sup>6</sup>See Bussert and Nick Cook, "Iran-Iraq: The Air War," IDR (November 1984), pp. 1605-1607.

and helped give Iran the ability to win air superiority during the time Iran could keep its air force highly operational.

Iraq did develop a relatively low cost airborne Early warning aircraft at some point in the mid-1980s, which it called the Baghdad 1. This aircraft was a Soviet IL-76 Candid, equipped with a modified Thompson CSF Tiger radar. This radar is built under license in Iraq and is called the SDA-G. This Aircraft could provide warning and coverage of Iranian high and medium altitude air movements over a limited area. The aircraft, however had limited sensor range; could not cover targets flying at very low altitudes; and lacked any advanced airborne identification, intelligence, and control features.

The lesson regarding the potential value of an AWACS-type aircraft, and satellite coverage, is obvious. The U.S. had the advantage of having the only AWACS and maritime patrol aircraft that could sustain regular coverage in the area. The U.S. monopoly of AWACS capabilities, supported by U.S. Navy shipborne radars, gave the U.S. a degree of coverage of air and naval movements in the Gulf that often proved to be of critical value in monitoring Iranian and Iraqi movements.

Airborne coverage was particularly important. The rough terrain of the area blocks or limits the coverage of surface based radar, and thermal ducting in the Gulf reflects or alters radar returns. The U.S. ability to provide airborne radar and night vision coverage of the Gulf with its E-3As, E-2Cs, ships, and other platforms was valuable from 1980 on, and proved critical to the success of U.S. operations during 1987 and 1988. It is interesting to note that U.S. willingness to share the results of such data was also often of critical value to the West European countries operating in the Gulf in 1987 and 1988. The need for an AWACS coverage is a critical lesson of the war, but maritime patrol and AEW aircraft also proved to be of great value.

The West and the USSR enjoyed a near-monopoly of satellite coverage, although both Iran and Iraq bought some commercial satellite data from France towards the end of the war. While the details involved remain classified, press accounts make it clear that intelligence satellites often gave the U.S. excellent intelligence coverage of all of Iran and Iraq.

## **11.2 Effective and Secure C<sup>3</sup>I**

As has been touched upon earlier, neither Iran or Iraq had particularly effective or secure communications. Both also lacked advanced communications intelligence collection and decryption capability. European sources indicate that both nations had field radios that could use commercial quality secure communications in some areas by the later years of the war, but that they generally had poor communications security and discipline. This is likely to be a major vulnerability in many Third World states, although the extent of this vulnerability may be offset by the use of landlines and the emphasis on face-to-face meetings and conferences.

Iraqi and Iranian communications also presented another problem. Long before the war, Iraq and Iran had established a history of using their C<sup>3</sup>I systems to "lie to please" at every command level. In Iran's case, this "command, control, and communicate by lie" was compounded by the disruption caused by the revolution.

The command structure of the Iranian Army was a near shambles when the war broke out. Iran then suffered from severe uncertainties regarding the chain of command, and from orders and policies coming from conflicting centers of power within the government.

During 1979 and 1980, Iran failed to expand and improve its C<sup>3</sup>I system in proportion to the vast expansion in its land force manpower. Communications equipment was lacking and a clear C<sup>3</sup>I system was often lacking. Soldiers sometimes vetoed the appointment of officers or had unpopular leaders removed from office. Revolutionary councils were formed, and these councils further hindered the chain of command.<sup>7</sup> The new revolutionary guards served as a parallel army with a separate command structure. In addition they lacked modern communications equipment proportionate to their strength and were often unresponsive to the Iranian Army and Air Force during joint operation.<sup>8</sup>

The power struggle between Iranian President Bani-Sadr and the mullahs in Tehran was particularly serious during the first two years of the war, and created splits within the Iranian command structure that played havoc with the Iranian chain of command until the ceasefire. Bani-Sadr aligned himself with the regular military and tried to capitalize on the pro-military feelings the public displayed following the Iraqi invasion. As a result, Bani-Sadr served as a highly visible commander-in-chief, who, in the minds of many clerics, functioned to isolate the army from the influence of the Islamic revolution.

The cleric-dominated Supreme Defense Council responded by emphasizing revolutionary and popular volunteer forces and by appointing

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<sup>7</sup> Hickman, *op. cit.*, pp. 10-11.

<sup>8</sup> Edgar O'Ballance, "The Iran-Iraq War," *Islamic World Defense*, Vol. 1 (Autumn 1981), p. 16.

permanent representatives, or religious commissars, to supervise regular forces. These individuals limited the influence of Bani-Sadr and served to exacerbate Iran's chain of command problems until his ouster.<sup>9</sup>

Bani-Sadr's political defeat and exile in the Summer of 1981 reduced these command problems within the Iranian military, but then left a parallel religious and military chain of command in place with mullahs "guarding the revolution" in every regular army, navy, and air force unit. Further, Khomeini continued to show his distrust or fear of "anti-revolutionary" activity in the regular forces and again strengthened the Revolutionary Guards relative to the regular army in 1986.

Although Tehran announced the formation of a joint military command under the commanders of the Army and the Revolutionary Guard as early as 1982, such a command never really developed and the situation was made worse by constant interference by the senior Mullahs.

Repeated efforts were also made to integrate the Revolutionary Guard and Army C<sup>3</sup>I systems. These efforts included the provision of Guard officers to command army units and army commanders to command guard units. The more experienced commanders of both the Revolutionary Guards and the regular forces also increased their role in planning and executing Iran's offensives after the defeat of the "revolutionary" and "Islamic" offensives in early 1984.

Tensions remained, however, and reports of clashes between clerics, officers of the regular forces, and officers of the Revolutionary Guards continued through 1988. While it is impossible to accurately trade the details of all the disputes involved, it is clear that when armed forces are even partially divided against each other, and then against the state, they lose a great deal of their effectiveness.<sup>10</sup>

The Iraqis also had a confused and heavily politicized military chain of command at the beginning of the war. Iraq's chief problem was gross over-centralization of command, mixed with high levels of politicization and incompetence at all levels of command. At the early stages of the fighting, junior officers and NCOs were so rigidly controlled that they were unwilling to advance without orders or to maneuver around a strong point once they had been ordered to advance. This often caused Iraq to fail to exploit its tactical advantages and

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<sup>9</sup> Reports in 1986 also indicated that the regular army high command had been changed to strengthen the Pasdaran, and that the Guards were to be given most of the new equipment purchased from the PRC, including F-6 and F-7 fighters. William F. Hickman, Ravaged and Reborn: The Iranian Army 1982, (Washington: Brookings Institution, November 1983), pp. 22-24. Also, see "Iraq's Hussein Confirms New 80 mile War Front," Washington Star (December 26, 1980), p. A-9, and William Branigan, "War Becomes Political Boon for Bani-Sadr," Washington Post (October 13, 1980), p. 61.

<sup>10</sup> Hickman, Ibid., p. 31.

take many more casualties than necessary. At the same time, higher level officers often refused to report bad news and exaggerated their successes.

These problems in Iraq's chain of command caused Iraq to make some extremely costly blunders throughout the war. They were particularly damaging at the start of the war and at Faw in 1986. According to several sources, the Iraqis twice entered and abandoned Susangerd at the start of their offensive, and then gave up critical positions near Dezful, during their initial offensive because they lacked clear orders and responsive command. The Iraqis also appear to have entered the conflict with only radio relay communications equipment to provide them with C<sup>3</sup> over a longer range. This radio relay system required a series of line-of-sight relay stations and broke down when Iraq had to deploy deep into Iran. A better system would have allowed Iraq operate over a wider area using less C<sup>3</sup> equipment and requiring fewer personnel.<sup>11</sup>

It is doubtful, however, that Iraq's lack of advanced C<sup>3</sup>I technology influenced the outcome of the fighting during either the start of the war, or at any time up to the ceasefire. Iraq's key C<sup>3</sup>I problems were political: Iraq had put its pre-war emphasis on political control to prevent coups and simply was unready to use C<sup>3</sup>I technology effectively.<sup>12</sup>

Like Iran, Iraq's C<sup>3</sup> capabilities also improved after the beginning of the war. By 1988, the Iraqi C<sup>3</sup> system had far better radio and land line links, and more flexibility at the major and mid-level command level. However, the fighting in 1986 and 1987 showed that Iraq's C<sup>3</sup>I system could still be a "system of lies." Iraq's command structure also often still proves remains too inflexible for effective counterattacks, combined arms, and combined operations.

These lessons regarding Iranian and Iraqi C<sup>3</sup>I present both risks and opportunities to the West. The risks are the potential breakdown of or weaknesses in the C<sup>3</sup>I organization, technology, and training of friendly local forces, and in their potential lack of inter-operability with Western forces, particularly at the larger unit or higher command level. Opportunities will occur for the West to exploit these weaknesses in threat forces and to give friendly local forces an edge through suitable technology transfer tailored to the needs of a given friendly state. Such transfers could range from ensuring the availability of suitable radio and command equipment to the transfer of a major air and maritime C<sup>3</sup>I system like the "Peace Shield" system the U.S. is selling Saudi Arabia.

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<sup>11</sup> See "The Gulf War: Continuing Stalemate," Armed Forces, Vol. 4, No. 8 (August 1985), pp. 290-293; Bussert; Cook; and William O. Staudenmaier, "Iran-Iraq (1980-?)," Lessons of Recent Wars (Lexington, KY: 1985), pp. 211-239.

<sup>12</sup> Interviews conducted by the author in Iraq.

It is also likely that sophisticated Western forces like USCENTCOM can exploit the technical advantages they will gain from superior C<sup>3</sup>I organization and technology, and could use a combination of electronic warfare, targeting, and strike systems that massively degrade the C<sup>3</sup>I assets in Third World Forces. The experience of Iraq and Iran indicates such strikes might cripple many Third World air forces and critically weaken their regular armies, particularly if they hit at both military and civil C<sup>3</sup> links.