

**Israel's Attack on Osiraq:
A Model for Future Preventive
Strikes?**

Peter S. Ford

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ABOUT THE AUTHOR:

***Peter S. Ford**, Major, USAF, is an experienced fighter pilot with over 2,000 hours and more than 400 combat hours. He is currently assigned as an Operational Test and Evaluation Instructor Pilot in the F-15C at Nellis AFB, NV. He is a graduate of the US Air Force Academy. A graduate of the US Air Force Weapons Instructor Course, he has served in several operational assignments, most recently as a weapons officer in the PACAF theater at Kadena AB, Japan. He recently completed a Master of Arts in Security Studies (Defense Decision-Making and Planning) at the Naval Postgraduate School where he completed this thesis. During his course of study he traveled to Israel and interviewed several senior policymakers regarding the Osiraq attack and Israel's Counter-proliferation doctrine.*

Comments pertaining to this paper are invited; please forward to:

Director, USAF Institute for National Security Studies
HQ USAFA/DFES
2354 Fairchild Drive, Suite 5L27
USAF Academy, CO 80840
phone: 719-333-2717
fax: 719-333-2716
email: inss@usafa.af.mil

Visit the Institute for National Security Studies home page at
<http://www.usafa.af.mil/inss>

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FOREWORD

We are pleased to publish this fifty-ninth volume in the *Occasional Paper* series of the United States Air Force Institute for National Security Studies (INSS). The 1981 Israeli air raid on the Osiraq nuclear reactor to delay or destroy Iraq's nuclear weapons program is often raised as a possible model for preventive strike and direct action counterproliferation. In this paper, Peter Ford presents that raid in both strategic and operational detail, directly addressing its wider applicability as a model for contemporary military action. Ford reviews the operational details of mission planning and execution as seen through a pilot's eyes, but he also reviews the larger context of Israeli decisions and actions from both the domestic and international perspectives. Upon that history, he overlays a policy template to draw broader lessons and cautions for those contemplating preventive strikes in other contexts. The conclusion that they can, at best, buy time for other policy tools and efforts should not be lost on security planners today. This is a highly useful case study for the military classroom, and it also serves as a policy primer for practitioners at all levels.

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EXECUTIVE SUMMARY

Twenty-four years ago, Israeli fighter pilots destroyed the Osiraq nuclear reactor and made a profound statement about global nuclear proliferation. In light of the recent preventive regime change in Iraq, a review of this strike reveals timely lessons for future counterproliferation actions. Using old, new, and primary source evidence, this paper examines Osiraq for lessons from a preventive attack on a non-conventional target.

Before attacking Osiraq, Israeli policymakers attempted diplomatic coercion to delay Iraq's nuclear development. Concurrent with diplomatic actions, Israeli planners developed a state-of-the-art military plan to destroy Osiraq. Finally, Israeli leaders weathered the international storm after the strike. The paper examines Israeli decisionmaking for each of these phases.

The paper draws two conclusions. First, preventive strikes are valuable primarily for two purposes: buying time and gaining international attention. Second, the strike provided a one-time benefit for Israel. Subsequent strikes will be less effective due to dispersed/hardened nuclear targets and limited intelligence.

ISRAEL'S ATTACK ON OSIRAQ: A MODEL FOR FUTURE PREVENTIVE STRIKES?

INTRODUCTION

Twenty-four years ago, Israeli fighter pilots whistled, relaxing in the relative calm of the 100-foot low-level ingress as they raced toward a date with destiny and a profound statement on global nuclear proliferation.¹ In less than 90 seconds, eight Israeli F-16s demolished the Osiraq nuclear reactor. Before exercising this military option, Israeli policy makers attempted seven years of diplomatic, overt, and covert actions to stop Iraq's nuclear plans. Concurrent with its non-military efforts, Israeli leaders planned a state-of-the-art military operation. The execution and timing of this strike held marked political risks together with the obvious military dangers.

In light of the recent events, the Osiraq strike is important to current and future counterproliferation actions. Putting the Osiraq strike in perspective will confirm measures other nations may take before resorting to military counterproliferation actions. It also will indicate the level of success a second preventive strike can have.

Background

Israel's attack on Osiraq was a bold preventive strike. It reinforced Israel's doctrine regarding nuclear weapons. According to Menachem Begin, "Israel would not tolerate any nuclear weapons in the region."² Israel still espouses this "Begin Doctrine" today. This study determines lasting lessons from the first attack. These lessons are important as the world anticipates an Iranian nuclear weapon in several years.³

The purpose of the study is to determine the strategic implications of the 1981 Israeli attack on Iraq's Osiraq nuclear reactor complex. What are the lasting effects of using non-conventional weapons as a means of counterproliferation against a nuclear threat? The strike

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“killed” the Iraqi nuclear capability in the short term, but did this action diminish the long-term nuclear threat to Israel? This watershed event in the Middle East created new regional military and political realities,⁴ forcing nuclear proliferators to harden nuclear facilities that increased the cost to any regional country of going nuclear. However, the long-term consequences of the attack are global. A preventive strike would no longer be so easy to get away with, nor would the required intelligence assessments about nuclear proliferators be as easy due to a near universal emphasis on denial and deception following the Osiraq raid. This paper identifies several lasting ramifications United States policy makers contend with resulting from this strike.

The overarching question of this study is whether the Israeli strike on Osiraq was an effective counter to Iraq's nuclear weapons program. Evaluating the strategic factors that drove Israel to attack Osiraq frames the problem. How and when Israeli policy makers carried out the strike reveals the empirical results. Finally, the short- and long-term military, political, and diplomatic results paint a more complete picture of the strategic implications of this strike.

The study argues that the Osiraq strike had two major purposes. First, it slowed down the Iraqi nuclear weapons program. Second, it achieved domestic political benefits at a critical juncture. The strike had several unintended consequences, however. Other nuclear proliferators hardened their nuclear facilities or sought redundant facilities. These efforts reduced the time succeeding preventive strikes would buy. Furthermore, Saddam Hussein did not sacrifice his goal of developing nuclear weapons, but he did significantly change tactics toward achieving this goal. Although the preventive strike had several short-term benefits, this action demonstrated that deterrence is not a

long-term effect of such strikes. In fact, it is more likely that a country will restart a nuclear weapons program as soon as it clears the rubble.

Sources

My study uncovers new information from personal interviews about the Osiraq mission and the domestic political interaction preceding the strike. Aside from these first-hand sources, the study draws from selected books on the subject. It also incorporates numerous scholarly articles, government documents, recently declassified information, foreign policy speeches, and media sources worldwide.

Key Findings

This study confirms the short-term benefits of a successful preventive strike. It also illustrates the long-term drawbacks a nation must be ready for prior to ordering a preventive strike. A successful preventive strike, especially a conventional weapons strike on a non-conventional site like Osiraq, serves to buy time for the striker. In the case of Osiraq, the first modern conventional strike on a nuclear reactor, the strike bought Israel at least five to ten years of reprieve from an Iraqi nuclear threat. Another side effect of a preventive strike is the concomitant international media blitz the strike draws. The media results are both positive and negative. In the long term however, a preventive strike such as Osiraq may reinforce a state's desire to acquire nuclear weapons. Such was the case with Iraq.

The second conclusion of this study points to the importance of the diplomatic process of nonproliferation. Israeli decision makers attempted to counter Iraq's nuclear plans diplomatically for seven years before concluding a military option was the only appropriate solution. Israeli policy makers justified the strike based on their perception of apparent United States indifference toward Iraq's nuclear proliferation.

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US diplomats had many more tools at their disposal to allay Israeli fears that went unused.

The next preventive strike against a nuclear proliferator will neither be as successful nor buy as much time as the first. Other nations seeking a nuclear option also have learned valuable lessons from the strike on Osiraq. Second, the media backlash after a strike will radicalize the proliferator's stance toward accomplishing the goal of going nuclear. Third, as the global hegemon, US decision makers should balance the weight of nonproliferation system management wisely against valuable alliance considerations. Decision makers should make every attempt to work within the confines of current global constructs for stability. If this means taking diplomatic and economic actions against proliferators or pushing Israel to abandon the Begin Doctrine, then quick decisive action is best done through International Atomic Energy Agency (IAEA) or United Nations (UN) auspices with full United States backing. Lastly, US leaders must weigh the potential misperception between slow, steady pressure to reverse proliferation, and Israel's view of state survival. If US policy makers fail to take decisive action, Israeli decision makers may once again take preventive military action.

Organization

This study consists of five sections. The first section sets the stage by introducing the dilemma of proliferation in the Middle East and the Israeli Begin Doctrine. This section briefly covers Israel's Osiraq strike, and its importance for current proliferation matters in the region. The section then covers methodology, key findings, and organization.

The second section reviews Israeli defense principles to illustrate how key Israeli decision makers decided to attack Osiraq. Israel predominantly relies on deterrence, autonomy, preparation, and

aggressiveness as defense principles. Historically, these principles worked well to dissuade hostility against Israel. However, Israel's diplomatic, overt, and covert efforts did not dissuade the Saddam Hussein regime from attempting to build a nuclear weapon.

The third section presents the fine points of the attack itself and several previously uncovered facets of the strike. Israel faced significant domestic political pressures yet still employed sophisticated planning and execution well beyond the ability of its neighbors. The implementation of this strike speaks clearly of Israeli resolve regarding counterproliferation. Israel's past ability to employ western-style planning and execution lends credibility to Israel's ability to execute advanced military options against nuclear proliferators now.

The fourth section reviews the physical effects and political aftermath of the Osiraq strike. A distinct comparison between short-term goals and the long-term effects is readily apparent in the post-Operation Iraqi-Freedom environment of 2004 when this study was undertaken. Previous literature focused specifically on the short-term benefits of preventive strikes like Osiraq. This section also describes the domestic and regional ramifications of the attack.

The final section summarizes the paper's findings and identifies several policy recommendations regarding preventive strikes. It also gives a broad perspective on the applicability of the Begin Doctrine in current regional affairs and potential US policy maker actions vis-à-vis nuclear proliferation.

ANATOMY OF A DECISION

A dramatic chain of events began thirty years ago when Saddam Hussein approached Jacques Chirac requesting the purchase of a French nuclear reactor. Hussein perceived that Iraq, an oil-rich nation,

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needed a nuclear weapon to balance against Israel and as a status symbol. Israeli policy makers scrutinized the events altogether differently. According to Israeli government official and scholar Uri Bar-Joseph, unlike the superpowers' relationship of Mutually Assured Destruction (MAD) that stabilized a nuclear balance of power, Israel's leadership believed that a similar situation in the Middle East was a remote possibility "because of Israel's vulnerability and the nature of the Arab regimes—especially that of Saddam Hussein."⁵ This section explores the strategic factors that lead Israel to attack the Osiraq nuclear reactor. It first examines Israel's strategic doctrine regarding threats in the region. Second, it asks what the perceived threat from the Saddam Hussein regime was and whether this threat was credible and imminent. Third, the section examines the means and methods Israeli decision makers employed to prevent Iraq from developing a nuclear weapon. Although Israel was oversensitive to threats, its policy makers correctly perceived the threat from Saddam Hussein's regime. Fourth, the section shows the failure of Israel's overt, covert, and diplomatic actions to dissuade Iraq from obtaining nuclear weapons prior to the Osiraq strike.

Setting the Stage

Israel is in a dangerous neighborhood. Several factors influence how Israel copes with emerging threats. The most critical of these factors are Israeli defense principles and inherent tactical dilemmas. Israel's leadership creates doctrine that influences how it handles emerging threats. As Israel developed defense principles for nuclear weapons, it found several inherent problems with conventional defense principles.

Israeli Decision Makers: An elite group of policy makers has led Israel. These men and women have very similar backgrounds and

ideological values. According to Efraim Inbar, “Israeli decision making in defense matters has always been extremely centralized and has remained the coveted privilege of the very few. The defense minister is the most important decision maker. He has almost exclusive authority within his ministry.”⁶ This fact was especially true for Prime Minister Menachem Begin. Begin took over the job of Defense Minister as well as Prime Minister after Weizman resigned as Defense Minister. This made it much simpler to carry through with the decision to strike Osiraq. It also narrowed the amount of dissenting opinion the cabinet heard.

The policy-making elite are familiar with military affairs. Indeed, most of the members of Begin’s cabinet fought side-by-side in Israel’s wars. Inbar states that for the period 1973-1996, “Most decision makers, grew up in the defense establishment, and had a good grasp of national security problems.”⁷ During and after the time of the strike on Osiraq, most defense decision makers got their start in the Israeli Defense Force (IDF) and moved to politics once their military careers finished. This continuity gave Israel a relatively constant set of principles for its defense doctrines.

Israeli Defense Principles: Israel relies on a steady set of values regarding its defense. Decision makers believe deterrence, autonomy, preparation, and aggression each pay dividends in the nation’s defense. The most critical element is a strong deterrence stance without enticing an enemy into further aggression.⁸ According to Inbar, “A strong Israel is necessary for its acceptance as an unchallengeable fact, but Israeli military strength and the occasional use of force needed to maintain a reputation for toughness and readiness to fight could generate traditional fears in the Arab world regarding Israeli expansionism.”⁹ Prime Minister Begin acted upon this principle when he issued the

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directive that became Israel's nuclear doctrine. The Begin Doctrine is a clear order: under no circumstances would Israel permit a neighboring state on terms of belligerency with Israel to construct a nuclear reactor that threatens the survival of the Jewish state. This doctrine provides deterrence, preparation, and a foundation for aggression, and remains within Israel's defense principles.

The introduction of weapons of mass destruction exacerbated the Israeli sensitivity to loss of life. Even before the introduction of a nuclear threat, policy makers viewed the strategic environment with a much greater pessimism after the 1973 war. Inbar states, "The 1973 war...did not provide Israel with a sense of victory. Israel suffered a painfully high number of casualties during the hostilities, and afterward it was isolated internationally. It also shattered Israel's confidence in the IDF and caused the fundamentals of Israeli strategic thinking to be questioned."¹⁰ This lack of confidence forced decision makers to choose overaggressive postures on several occasions and reinforced Israel's need to act autonomously.

Tactical Dilemma: As Iraq sought a nuclear capability in 1974, Israeli leaderships' strategic outlook was pessimistic, and confidence in the IDF faltered. To Israeli policy makers, this shattered confidence combined with Israel's natural weaknesses accentuated their susceptibility to attack. Israel has very little geostrategic depth. It is approximately 220 miles long and 45 miles wide at its farthest points. The population of neighboring states outnumbers Israel more than ten to one. In the past, Israel's military preparedness and autonomy allowed it to succeed on the conventional battlefield. As Iraq grew closer to gaining a nuclear capability, however, it appeared conventional military deterrents, preparation, and autonomy would not overcome Israel's lack of strategic depth in population or territory.

This predicament forced Israel to compensate for weaknesses with alliances. US policy makers continually reaffirmed the alliance to allay any Israeli fears. This statement from Secretary of State Alexander Haig after the raid typifies the kind of information that affirmed the alliance but also reaffirmed Israel's need to be autonomous:

The United States recognized the gaps in Western military capabilities in the region, and the fundamental strategic value of Israel, the strongest and most stable friend and ally the United States has in the Mideast. Consequently, the two countries must work together to counter the full range of threats that the Western world faces in the region. While we may not always place the same emphasis on particular threats, we share a fundamental understanding that a strong, secure and vibrant Israel serves Western interests in the Middle East. We shall never deviate from that principle, for the success of our strategy depends thereupon.”¹¹

Israel sought an ironclad guarantee against nuclear attack, but no ally could provide that guarantee. In 1980, Secretary of State Edmund Muskie informed Israeli Foreign Minister Yitzhak Shamir, “In spite of being the leader of the West, the world's greatest superpower did not wield unlimited power...also international bodies experience difficulty in effective supervision on nuclear activity, because nuclear materials are available from a variety of sources, not all subject to control.”¹² Without the needed infallible pledge, Israel chose the Begin Doctrine as its strategic doctrine against potential nuclear threats in the region. It remained Israel's choice through 2004.

Know Your Enemy

Saddam Hussein made Israel's doctrinal choice an easy selection. His constant offensive rhetoric and abrasive foreign policy were clear signs of aggression. It is critical to view the perceived threat Hussein's regime projected to Israel with an equally important analysis of the credibility of that threat. Iraqi technological progress provides clear indication that Israel's perception matched the credibility of threat.

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Iraq also proved its hostility toward Israel by remaining outside the 1949 Armistice agreement and not recognizing the legitimacy of Israel as a state. Lastly, Saddam Hussein made it clear he would not hesitate to employ nuclear weapons if he possessed them. These indicators show Israel faced a rising credible threat matched to an unhesitatingly hostile regime.

Iraqi Technological Signs: Iraqi scientists were in the infancy stages of nuclear research in 1974. Scientific experiments in their Soviet-built nuclear reactor did not explore the full capability of the research reactor. According to Nakdimon, “The level of Iraq’s nuclear research at that time could not justify the acquisition of an Osiris reactor. The Iraqis had barely begun to take advantage of the research possibilities offered by their Soviet reactor. Their interests stemmed from its plutogenic [plutonium producing] traits.”¹³ Additionally, policy makers in the Soviet Union did not consent to releasing weapons-grade uranium to Iraq along with the reactor it supplied. This forced Iraq to search for a reactor with dual-use capabilities.

For Iraqi scientists, the two linked purposes of an Osiris-type reactor were to maintain a legitimate scientific front while possessing the ability to harness nuclear energy for a weapon. Legitimate purposes for nuclear reactors are primarily production of electricity. Nakdimon states, “Had the Iraqis indeed desired an electric-power reactor, they could have applied for one of the newer American-designed models the French were now manufacturing. But on learning that a gas-graphite reactor could not be supplied, the Iraqis showed no further interest, temporarily, in any French-built reactor.”¹⁴ Saddam Hussein pressured Jacques Chirac for a gas-graphite reactor and uranium enriched to at least ninety-three percent for Iraq’s nuclear reactor.¹⁵ To deliver such a reactor to Iraq, France had to supply an

older reactor type. Newer reactors were more efficient, less expensive, used Caramel (enriched to only twenty-thirty percent enriched uranium) fuel, and offered greater safety. Possessing an Osiris-type reactor offered two primary benefits to Hussein: its plutogenic traits offered him a potential source of weapons-grade nuclear material and the fuel used to run Osiris also was weapons-grade material.

Still at War: Iraq insisted on remaining in a state of war with Israel. All other Arab states signed armistice agreements with Israel in 1949. Iraq could not sign an armistice because it did not recognize Israel as a state. Iraqi soldiers have participated in every war against Israel. In 1969, Hussein ordered Iraqi Jews in Baghdad executed. Additionally, he took every opportunity to remind the Iraqi people they were at war with Israel. Nakdimon states, "In an interview published in the United States on May 16, 1977 Hussein stated, 'never shall we recognize Israel's right to exist as an independent Zionist state.'" On October 24, 1978, one week prior to the ninth Arab summit, an official statement from an Iraqi ambassador to India reaffirmed the continuing hostility, "Iraq does not accept the existence of a Zionist state in Palestine; the only solution is war."¹⁶ This state of affairs between the two countries did not allow any diplomatic contact, and any interaction between the two came through a third party.

The Butcher of Baghdad: Israel witnessed Hussein's repeated use of chemical weapons on his own people and fellow Arabs. During the Iran-Iraq war, Israel observed Iraq's merciless use of chemical weapons. Hussein showed no hesitation in launching the deadly poison as long as he received benefit from its use. Israel noted that Hussein's use of these weapons was against people whom he professed not to hate. How much more devastating would an attack be on those whom he professed to hate?

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Policy makers in Israel were convinced the Iraqi government under Saddam Hussein would employ nuclear weapons if they possessed them. Hussein and members of his regime also expressed this openly. Immediately after the final negotiations on Osiraq, in a September 1975 interview, Hussein stated “the Franco-Iraqi agreement was the first actual step in the production of an Arab atomic weapon, despite the fact that the declared purpose for the establishment of the reactor is not the production of atomic weapons.”¹⁷ Five years later, following two unsuccessful Iranian attempts to destroy the reactor, the Iraqi newspaper *ath-Thawra* quoted Deputy Prime Minister Tarik Aziz, “The Iranian people should not fear the Iraqi nuclear reactor, which is not intended to be used against Iran, but against the Zionist enemy.”¹⁸ For these myriad reasons, Israel correctly perceived the threat from Iraq’s nuclear program and foresaw with certainty that Saddam Hussein would not hesitate to use nuclear weapons on Israel.

Out of Options

Israel used countless means and methods to prevent Iraq from developing a nuclear capability. It planned each of these methods to delay or destroy Iraqi indigenous nuclear capability. None of these methods proved able to stifle Saddam Hussein’s motivation to join the nuclear club. Israel used overt methods consisting primarily of media reports and open contact with critical personnel. It reportedly used several covert methods to influence those involved in the Iraqi reactor project. Additionally, Israeli political leaders employed diplomatic tools to pressure the global community into stopping Saddam Hussein’s nuclear programs. These efforts failed to accomplish the overall task of dissuading Iraq from going nuclear.

The art of statecraft lies in manipulating international pressure to obtain an objective without resorting to violence. Israel employed

these schemes and processes for seven years before resorting to a military solution. Many actions happened from 1974 to 1981 that will never be known, but certainly, the most visible confirm the attempts and, more importantly, the methods Israel used.¹⁹ Thus, this list is not all-inclusive, but it does cover the preponderance of means used to persuade Saddam Hussein to abandon his nuclear ambitions.

Overt Methods: The primary overt method Israel used to influence international opinion was the media. Israel also used academic routes to present the threat,²⁰ but the most effective was through newspapers and magazines. Charting the timeline for overt actions, two specific events stand out: the first is the January 1976 revelation of the potential Iraqi nuclear capability by the *London Daily Mail*; the second is the July 1980 Israeli cabinet decision to invoke a media campaign globally.²¹

January 10, 1976	<i>London Daily Mail</i> wrote, “‘Iraq is soon liable to achieve a capacity for producing nuclear weapons. One of the most unstable states in the Arab world would be the largest and most advanced in the Middle East.’ The paper added that France would be powerless to impose effective control over the use to which the Iraqis would put it.”
May 1977	Eliyahu Maicy, Paris correspondent for Ha’aretz uncovered a “conspiracy of silence”: France violated the French constitution on banning French (of Israeli descent) workers inside France based on Iraqi pressure.
1977-1978	“Media revelations, domestic and foreign, forced the French government to admit that it did intend to supply Iraq with enriched uranium.”
March 1980	“Prodded by a barrage of Israeli reminders, the United States made an indirect attempt to induce the Italians to pull out of the project. Information leaked to the <i>New York Times</i> and the <i>Washington Post</i> by US intelligence agencies recorded that Italy was selling advanced nuclear equipment to Iraq, as well as training Iraqi

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	engineers and technicians at its nuclear centers.”
March 20, 1980	A London newspaper reported: Next year, Iraq will be capable of manufacturing a nuclear bomb-with the assistance of France and Italy. France provides the enriched uranium, Italy: the know-how and technology.”
Summer 1980	Osiraq was a matter of life and death to the Israeli and “in the summer of 1980 Israel gave a public declaration of intentions, although it was not an official one
July 1980	“US media published a startling declaration by President Carter: The United States would not attempt to impose it views upon states with a nuclear capability-such as France- with regard to the Mideast.”
July 7, 1980	“At a cabinet meeting, committee members “called for a propaganda campaign to alert public opinion in the world at large and in France in particular.”
July 15, 1980	In an interview with the German Die Welt, the director general of the Prime Minister’s office said, “Israel cannot afford to sit idle and wait till an Iraqi bomb drops on our heads.”
July 20, 1980	“The first public mention of a possible Israeli air strike at al-Tuwaitha. That day’s <i>Boston Globe</i> cited observers discussing a worst case scenario to predict that Israel could launch a pre-emptive strike to put the reactor out of commission.”
September 1980	“Israel’s campaign against the Iraqi nuclear program had hitherto been conducted behind closed doors. But the international media were given various signals of Israel’s resolve to deny Iraq a military nuclear option.”

Table 1: Overt Israeli actions against Iraqi Nuclear Program

Covert Methods: Any group or nation attempting covert action does not advertise its intentions or results. Normally, the results are attributed to a particular group after lengthy, classified investigation. However, this does not mean that nation or group actually accomplished the task. Undoubtedly, Israel accomplished many covert actions while attempting to prevent an Iraqi nuclear weapon. Some

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listed below may be their handiwork, while other events may not be tied to Israeli action.²²

April 6, 1979	The “French Ecological Group” claims responsibility for exploding both reactor cores in La-Seyne-sur-Mer. The French authorities never caught the group, but European authorities attributed the strike to the Israeli Secret Service, Mossad.
June 13, 1980	Yehia al-Meshad was murdered in his hotel room in Paris. The only witness was Marie-Claude Magal, a French prostitute. She, too, was murdered less than one month later. The scientist was in France to oversee the delivery of the first shipment of nuclear material for Iraq. The international media pointed fingers immediately at Mossad, but French authorities were unconvinced.
July 25, 1980	Iraq’s Ambassador to France revealed an Israeli plan to strike Iraq’s nuclear reactor in an effort to sabotage Iraqi nuclear efforts. He condemned this planning harshly, stating Iraq’s nuclear efforts were for peaceful purposes only.
August 7, 1980	Three bombs exploded at the Italian company SNIA Techint, the company responsible for manufacturing the hot separation labs Iraq needed to produce weapons material from spent uranium rods.
August and September 1980	Multiple threatening letters were sent to scientists and technicians involved anywhere in the process of enabling Iraq’s nuclear capability. The Committee to Safeguard the Islamic Revolution signed all of the letters.
January 20, 1981	<i>London Daily Mail</i> reported the Iraqi government caught and executed ten suicide attackers before they accomplished their mission inside Osiraq. Additionally, investigators found and dismantled two ten-pound bombs before any damage was done to the reactor complex. Regardless of who was truly responsible for this group, Israel was credited for the attack.

Table 2: Covert Israeli Actions against Iraqi Nuclear Program

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Diplomatic Means: Israel exerted seven years of diplomatic pressure on nations around the world in the attempt to prevent Iraq from getting the Osiraq reactor. France was the primary recipient of a majority of the diplomatic pressure from Israel. Israel also approached Italy and West Germany on the issue. The most important part of Israel's diplomatic effort is the sheer number of attempts Israel made to convince France to abandon its support of Iraq.²³

April 29-30, 1975	"The Israeli Foreign Minister, Yigal Alon, paid a working visit to Paris as the draft Franco-Iraqi agreement reached its final stages of completion.... In his talks with the three main pillars of the French administration, Pres. Giscard, Premier Chirac and Foreign Minister Jean Sauvagnargues, Alon conveyed Israel's concern over the possibility of Iraq's misuse of the nuclear technology and fuels whose purchase it was negotiating with France. They all gave the official French position, though not a party to the NPT, France would continue to behave as though its signature were appended to the treaty."
January 13, 1976	Israeli Director General for West European Affairs went to French Ambassador Jean Herly to clarify French contacts with Iraq on nuclear affairs.
January 27, 1976	Israeli Knesset member Dr. Yehuda Ben Meir voiced concerns over Iraq's dealings with France and France's acceptance of Iraqi offerings (especially in light of the fact that the Soviet Union refused to supply Iraq with weapons-grade uranium).
March 30, 1977	The new French Foreign Minister, Louis de Guiringaud visited Israel and discussed the Iraqi project with similar reassurances to Israeli.
July 15, 1977	Israeli Ambassador to Paris Gazit called on France to give Caramel fuel to Iraq, but France resisted the idea claiming the fuel was untested and not the fuel Iraq originally negotiated.
January 13, 1978	Gazit again visited Guiringaud to slow down plans for delivery until the Caramel fuel could be tested and substituted for delivery to Iraq. Again, the Frenchman

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	declared this was impossible, as the Caramel fuel was not the fuel Iraq originally negotiated.
October 19, 1978	Gazit again visited Guiringaud to question the weapons-grade uranium issue and ask when France would deliver it to Iraq.
January 1979	Foreign Minister Moshe Dayan visited French President Giscard and Premier Raymond Barre. Barre placated Dayan about Iraqi intentions, claiming Hussein and Hafez al-Asad had given up the idea of destroying Israel.
July 28, 1980	Israeli Foreign Minister Yitzhak Shamir met with French Ambassador to Israel, Jean-Pierre Chauvet. Shamir told Chauvet, "Israel holds France exclusively responsible for the results liable to arise from operation of the reactor and misuse of the nuclear fuel." Chauvet argued, "Acquisition of nuclear arms would be lunacy on the part of Iraq. After all, Israel's Jewish and Arab populations are intermingled, and anyone dropping a nuclear bomb on Israel ran the risk of annihilating many thousand of Arabs."
August 1980	Dr Meir Rosenne, the new Israeli Ambassador to France visited the French Premier about the Iraqi nuclear contract. He received the same answers as those before him
September 1980	Israeli Foreign Minister Shamir visited France's UN delegate Francois-Poncet during the UN meeting in New York. Bolstered by the recent Iraqi attack on Iran, Israel expected France to withdraw from the supply of weapons grade fuel. The meeting with the French delegate, however, proved worthless. "Shamir sensed that European cynicism left Israel with no choice other than the one it had repeatedly adopted in the past: to take its fate into its own hands."
November 1980	Shamir again met with Francois-Poncet and days later with President Giscard. Both of these meetings "were a well-nigh precise rerun of everything said at previous meetings."
January 1981	Labor party leader, Shimon Peres met with French President Giscard. This meeting found no new information favorable to Israel. Giscard told Peres,

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	“The best thing for Israel is a military pact with the United States. Thereby, your security will be guaranteed by the world’s number-one superpower.” Peres replied, “Israel does not want to be an American, or a European protectorate.”
Iran February 1977	Israeli Foreign Minister Yigal Alon met with a top-ranking Iranian official who served as the Iranian liaison for Israel. The two countries did not have any officially sanctioned diplomatic ties. The Iranian official knew Iraq was working with the French to develop a nuclear reactor that could also allow Iraq to produce nuclear weapons. However, the official would not join Israel in alerting the international community due to fear of highlighting Iranian plans to do the same thing.
Iran July 10, 1977	Israeli Foreign Minister, Moshe Dayan met with the same Iranian official to inquire if Iran was concerned at all with Iraq developing nuclear weapons. The official passed on Dayan’s comments to the Shah.
Iran Dec 27, 1977	Dayan met with the Shah of Iran to brief him on the progress of Israel’s peace negotiations with Egypt. Other Iranian government officials informed Dayan of Iraqi nuclear intentions. Iraqi officials reassured Iranians that any nuclear weapon was meant for Israel, not Iran.
Italy July 1980	After Moshe Dayan resigned from Begin’s cabinet, Yitzhak Shamir took over as Foreign Minister. He quickly sent a handwritten letter to the Italian Foreign Minister, Emilio Colombo in hopes of convincing Colombo and Italy to refrain from helping Iraq’s nuclear advance any further. “It is of the gravest when nuclear capability is endowed to a regime which achieved power by force, and which is constantly sustained by its fierce antagonism toward the Israeli people.”
W. Germany Summer 1979	Foreign Minister Dayan contacted West Germany to persuade them not to produce any components for the Iraqi reactor complex.
W. Germany	Israeli Ambassador to Bonn, Yohanan Meroz contacted West German Chancellor Helmut Schmidt in the attempt to have West Germany intercede on Israel’s behalf to

Sept 4, 1980	the French. Schmidt labored over the decision, but eventually decided not to intervene. He stated, "France's promises must suffice. I do not see what can be done now."
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Table 3: Israeli Diplomatic actions with France, Germany, Iran, and Italy

Lack of Results in United States: Israeli diplomats worked hard to convince US decision makers to act on their behalf. Israel requested American diplomatic assistance mostly against Iraqi aggression and French reticence. Israel spent almost as much time trying to convince US policy makers of the pending danger as they did trying to persuade France to forego its ill-conceived nuclear proliferation plans with Iraq. Two events caused Israel to lose faith in American anti-proliferation efforts. After initially vowing to take a hard-line nuclear proliferation stance, President Carter reversed plans in July 1980. He claimed his administration would not interfere with other nuclear-equipped countries and their Mideast affairs. Also in 1980, US policy makers decided to continue unfruitful diplomatic approaches with France instead of backing direct Israeli pressure on Iraq. The marked pressure of responsibility weighs differently as a superpower concerned with systemic problems than as a regional power concerned with survival.²⁴

October 1975	Israeli Prime Minister Rabin urged US Secretary of State Henry Kissinger to obstruct the French nuclear negotiations with Iraq on Israel's behalf. Kissinger claimed that he did try to intervene but to no avail.
Winter 1976	Internal debate raged in France over whether or not to supply Iraq with military grade uranium or bend to the Carter administration's demands to use Caramel fuel. Regardless of the internal fighting, France decided to press on with delivery of weapons-grade uranium.
February 1977	Disappointed in Iran, Israel now pinned its hopes principally upon the United States, which had conducted, since 1975, a most vigorous campaign

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	against dissemination of military nuclear technology. In view of the vigorous US anti-proliferation campaign, it was only natural for the United States to attempt to talk Paris into renegotiating its agreement with Iraq.” The Carter administration, elected in November 1976, vowed to take a hard-line stance on nuclear proliferation. Election promises pledged sweeping international actions against countries promising nuclear technology for sale. The United States slowed down the delivery of uranium and reactors to France and Germany. This slow-down was designed to reflect US policy maker’s disapproval of France’s deals with Pakistan and Iraq. Next, the administration encouraged France to supply only Caramel fuel (uranium enriched only 20-25 percent) to Iraq.
March 1980	US media sources criticized Italy and France over selling advanced nuclear equipment to Iraq.
July 16, 1980	Israel Ambassador to the United States met with Secretary of State, Edmund Muskie to inquire on the status of US diplomatic pressure on France vis-à-vis the Iraqi nuclear reactor. Whatever actions were taken proved fruitless in stopping France’s cooperation with Iraq. Additionally, President Carter made a public declaration that also did not help Israel: “the United States would not attempt to impose its views upon states with a nuclear capability—such as France—with regard to the Mideast.”
July 17, 1980	US Ambassador Samuel Lewis visited Prime Minister Begin regarding Iraqi nuclear weapons. Begin urged Lewis to bring the matter to the attention of the White House. Lewis urged Begin to “put his trust in President Carter.” “No president has been so concerned and so active in trying to stop the spread of nuclear weapons. I am certain if he can find a way to stop the French, he will do so.”
July 22, 1980	Israeli Ambassador Evron informed US Assistant Secretary of State Saunders that France again rejected America efforts to intercede on behalf of Israel. Evron and Israel suspected Washington of putting little effort into the developments in Iraq

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July 24, 1980	Ambassador Lewis informs Begin his concerns are on the desk of the President and Secretary of State.
December 1980	On results of President Carter's influence on France and informing incoming Reagan administration of Israel's concerns: "Was either effective? In both cases, the answer appears to be negative. There must have been some slipup in the transition from one administration to the next. Carter was to explain the omission by pointing out that "Reagan appointed his Secretaries of State and Defense 'at the last moment'; consequently, there was no one to receive the information."
December 1980	"Washington claimed to be under no illusions as the gravity of the danger to be expected from Iraq's possession of nuclear weapons; however the Administration held it preferable to pursue diplomatic approaches to France and Italy, rather than countenance direct Israeli pressure upon Iraq which, the Americans feared, could place obstacles before Mideast peace efforts."
April 1981	Secretary of State, Alexander Haig went to visit Prime Minister Begin and Foreign Minister Shamir in Israel. Haig confirmed Israel's worst fears: The United States had been unable to stop or delay French and Italian efforts to equip Iraq with a nuclear reactor and hot cell. According to President Carter, "They—France and Italy—are sovereign states, just like Israel. We have intervened with France and Italy-but in vain."

Table 4: Israeli Diplomatic Results in the United States

In October 1980, Israel held two critical cabinet meetings. On 14 October, Begin was in favor of military action, but desired more meetings with French and American diplomats. Shortly thereafter, Israeli Ambassador Evron informed Begin that Iraq now possessed 30 kilograms of weapons-grade uranium. Begin's next cabinet meeting was an emergency meeting, and he was convinced of the action to take. According to Nakdimon, "Begin now urged the Cabinet to adopt a decision in principle, as recommended by a majority of the ministerial

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team, in favor of destroying the reactor.”²⁵ Begin's decision now was simply a matter of when to strike the reactor.

Conclusion

After the 1973 war, Israel's strategic outlook was insecure. The presence of potential Iraqi nuclear weapons only exacerbated the insecurity. When Israel considered the known behavior of Saddam Hussein, now hot on the trail of nuclear weapons, it concluded submissiveness was not an option. Israel elected to attack the Iraqi nuclear reactor by overt, covert, and diplomatic means first. This attack started in 1974 and concluded when Begin decided to switch the attack to military means. In 1981, Israel proved it lived by the Begin Doctrine. Once Israeli policy makers saw the ineffectiveness of other methods, they elected to strike.

THE ATTACK

The Israeli strike on Osiraq ranks among the most important aerial bombardments of the twentieth century. Every nation seeking to acquire nuclear weapons took notice, especially those in the Middle East. This strike added fuel to a region already ablaze with turmoil. According to Jason Burke, “In 1979...several massive events shook the Muslim world: a peace deal between Israel and Egypt, the Islamic Revolution in Iran, the Soviet invasion of Afghanistan, and the occupation of the grand mosque at Mecca by a radical Wahhabi group.”²⁶ In 1981, Israel's strike was yet another unsettling event in a region still marred by conflict. This section examines how Israel attacked Osiraq, and why the means and timing Israel chose for this attack are important. The section first examines Israeli political pressures influencing the attack timing. Next, it examines the alternatives Israel had to carry out this strike and the problems involved

in each choice. Finally, the section describes Israel's tactical execution of the attack and its immediate strategic impact. The section concludes that Israel was the only country in the region that had the means to accomplish this demanding strike and chose the timing of the strike primarily in response to domestic political pressures.

Setting the Stage

Israel can take virtually no action without significant ramifications beyond its borders. It must constantly weigh domestic political demands against regional threats and US Middle East policies.

Israel had no shortage of international and domestic political constraints as it contemplated, planned, and executed the strike on Osiraq. Mired in the first Intifada, growing tensions in Lebanon, surface-to-air-missiles in the Beka'a valley, the volatile Egyptian peace process, and facing enormous inflation domestically, Israeli policy makers found each decision crucially interconnected. Israel faced Knesset elections in 1981 amidst these building security concerns.

Prime Minister's Role in Foreign Policy: Israeli Foreign Policy is usually opaque and reactive. Driven by a myriad of factors, the primary author of Israeli Foreign Policy is the Prime Minister. According to Lewis Brownstein, "Since the establishment of the state in 1948, Israeli foreign policy decision making has tended to be highly personalized, politicized, reactive, ad hoc, and unsystematic."²⁷ The Prime Minister's relative power within the Israeli coalitional government is the prevailing feature on foreign and security matters.

The Prime Minister's control is a function of personality, political authority vis-à-vis other Israeli political elites, public confidence, and the publicly perceived security environment. Brownstein implies the formative years of Prime Minister David Ben-Gurion established the dominant role of the Prime Minister in Israel's foreign policy

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formulation. “Improvisation was the rule because it was the only choice. There can be no question that the memory of those years and of the monumental successes...resulted in a collective memory on the part of the leadership. It would be difficult to overemphasize the influence of those years on the pattern of Israel’s decision-making in foreign policy.”²⁸ Consequently, Israeli foreign policy ebbs and flows primarily with Prime Ministerial decisions.

The Prime Minister’s decisions are responsive to his coalitional government. Therefore, domestic political factors within Israel drive foreign policy, counter to Brownstein’s theory. The Prime Minister is the pre-eminent member of the policy elite with the foremost say on the direction of foreign policy, but his power extends only as far as the Knesset allows. According to Juliet Kaarbo, “Executive power is concentrated in the prime minister and the cabinet. While legitimacy lies with the parliament and the cabinet must maintain the confidence of the legislative assembly, the power to initiate and carry out policy making is to be found in the cabinet.” For parliamentary democracies, Kaarbo contends, “Power and resources are more fragmented and are divided along policy or ideological party lines.”²⁹ The Prime Minister must constantly weigh driving security matters against his resident authority within the coalition government.

Israeli Political Pressures: Prime Minister Menachem Begin drove Israeli Foreign Policy starting in 1977. His Likud party came to power in Israel after several smaller political parties won enough seats in the 1977 Knesset elections to overthrow the Labor majority. Rabin lost due to allegations of corruption, political in-fighting, and mediocre policy decisions. Zachary Lockman states, “[Begin’s] new talent and new policies were to replace the stagnations and entrenched machinery of the Labor Party bureaucracy which had dominated Israel for

decades.”³⁰ Begin gained the confidence of the National Religious Party based on his uncompromising foreign policy stance.

Israeli Foreign Policy in 1981 reflected the hard-line attitude of Prime Minister Begin. Indeed, Begin kept his hard-line policy direction throughout his time in office. He could remain relatively sheltered in his foreign policy for several reasons. According to Brownstein, “Israel has no independent ‘think tanks’ or councils where academics and government officials can come together to exchange views.”³¹ In addition, the Likud party had virtually none of the academic communication links the Labor party possessed. Nor, did the Likud party foster any interaction among academia and government decision makers. The cabinet remained moderately sheltered and the Prime Minister was one-step further secluded than his cabinet. Hence, Menachem Begin deserved his reputation as an autocratic leader who rarely sought advice from his cabinet.

Domestic Political Timing of the Attack: Domestic political factors within Israel affected many foreign policy directives. Although Begin kept his hard-line policy posture, he could not act with impunity. According to Melvin Friedlander, “because Begin enjoyed only a narrow majority in the Knesset those right-wing groups and their representatives in the cabinet possessed a virtual veto over government decisions.”³² A junior party, the National Religious Party, established foreign policy as an area of influence under its coalitional agreement with Begin and the Likud party. This junior party demonstrated its power in 1979 during negotiations with Egypt. According to Kaarbo, “the autonomy talks were the second part of the Camp David Peace Treaty. The junior party...in coalition with Likud was successful at getting hard-line conditions adopted for these talks in May 1979 and

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subsequently deadlocking them.”³³ Therefore, domestic political factors were the primary influence on Israeli foreign policy

Israel had a Knesset election scheduled for November 1981. The Labor party, lead by Shimon Peres, was gaining ground on Begin's Likud party. Prime Minister Begin faced difficulties from unrest in Lebanon, dissatisfaction over the Palestinian issue, and a severe economic crisis. Inflation in Israel was over 120 percent during 1980. According to Zachary Lockman, “The Begin government, on the advice of such luminaries as Milton Friedman, has revised long-standing Labor policies that subsidized consumer goods, protected local industry, encouraged exports and controlled currency exchanges.”³⁴ This economic predicament combined with the increasing frustration over security issues did not bode well for the Likud party.

In May 1981, Begin lagged behind Labor party leader Shimon Peres in voter polls. Although the Labor party offered no significant change to policies enacted by Begin, public opinion saw Menachem Begin as ineffective. His political capital was in decline, and a military action could bolster his hard-line reputation. In late 1980, Lockman guesses, “Begin might choose to gamble on a major military adventure, perhaps against the Syrians and Palestinian forces in Lebanon. Other scenarios are also possible.”³⁵ Indeed, Begin readied plans for striking Osiraq as pressure of the Knesset election mounted.

Begin's desire to solidify his political position by a strike on Osiraq coincided with a strong opinion on Israeli defense measures. Indeed, from the outset of his tenure as Prime Minister, Begin revealed concern over the Iraqi nuclear program. However, Begin held strong memories of atrocities done to the Jews from World War II. Shlomo Nakdimon states, “But above all, what shaped Begin's course, and his personal philosophy, was the Holocaust—that national calamity in which his

own father and mother perished, as did most of his family.”³⁶ He saw the Iraqi nuclear program as another potential means to destroy the nation. In late 1977, Begin issued clear guidance within his cabinet that no belligerent states in the region could threaten Israel with nuclear weapons.

The Political Costs of Osiraq: A strike against Osiraq would serve multiple purposes. A successful strike could sway voters to view Begin as a decisive man of action willing to buck world opinion to protect Israel. Additionally, a strike destroying another potential holocaust device before it could be unleashed on Israel matched Begin's personal philosophy. If the strike was a failure, Begin stood no chance at retaining his role as Prime Minister.

Furthermore, Begin believed Peres would opt for diplomatic means over action against Iraq. Shimon Peres was close friends with French President Francois Mitterrand, who opposed French involvement in Iraqi nuclearization. Four years of diplomatic exertion to prevent France from delivering a nuclear reactor to Iraq, however, yielded only failure. In addition, Begin believed Peres would not risk launching the strike even if diplomatic efforts fell short. Prime Minister Begin, therefore, saw this state of affairs as solely his responsibility. It was his job to protect Israel's right to exist, but time was running out—for him and for Israel.

The strike on Osiraq came about in this background of intense domestic political pressure and steady Iraqi nuclear advance. The domestic political payoffs for Begin offered significant rewards compared to the risks. Thus, Israeli domestic political pressure acted as Begin's primary impetus for ordering the strike.

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Choices...Choices

The government of Israel possessed several means of attacking the Osiraq reactor. Prior to June 1981, Israeli policy makers primarily used diplomatic pressure to preempt construction of the Iraqi reactor. They pressured many nations, but mainly France and Italy, to prevent them from supplying Iraq with the Osiris-type reactor and the fuel to run it. Italy also supplied technical training to Iraqi scientists and a specially designed shielded laboratory called a hot cell to extract plutonium and handle radioactive material. The hot cell was a particularly telling purchase. It allowed technicians to extract and harvest bomb-grade fuel. It could have no other purpose for Iraqi technicians. Israel's diplomatic coercion was its first line of defense against an Arab bomb, and it failed.

International Legal Factors: The implications of the strike were legally intimidating. According to McKinnon, "The Israelis expected Iraq to charge that any military action would be illegal, a violation of international law, and would therefore be considered an act of aggression."³⁷ However, the Iraqi regime never signed a peace agreement with Israel and refused to recognize Israel as a nation. Iraqi decision makers repeatedly confirmed their policy of aggression towards the "Zionist entity." Thus, Israeli policy makers considered the strike legal based on the wartime status of the two countries.

Other international law attorneys claim the strike legality based on Israel's right to anticipatory self-defense. Anticipatory self-defense is defined as the entitlement to strike first when the danger posed is instant, overwhelming, leaving no choice of means, and no moment for deliberation.³⁸ Several decision makers claimed the strike was legal due to the overwhelming nature of nuclear weapons.

Anthony D'Amato, a well-respected international law professor at Leighton University, however, claims neither of these reasons made the Israeli strike legal. Israel had no right to a legal strike in an illegal war (as D'Amato claims the shaky relationship between Israel and Iraq was at the time of the strike). D'Amato also notes that Article 51 of the United Nations Charter (the provision that includes the self-defense clause) only allows action "if an armed attack occurs."³⁹ D'Amato declares the strike was legal because Israel acted for the international community as a surrogate on the attack. If international law is designed "to create the precondition for peace and human rights,"⁴⁰ then the law provides the international community a right to act upon any aggressive state willing to use nuclear weapons as blackmail.

Israel's action against Iraq gave the world relief from this potential global Iraqi threat. Regardless of the legal reasoning, Israel pressed ahead undaunted by the repercussions that would follow the attack.

Risk versus Reward: Israeli planners weighed the risks and rewards of each method of attack on Osiraq. Once overt, diplomatic, and covert intelligence operations failed to produce results, Israeli policy makers had two basic military choices for destroying the Osiraq reactor: a military raid with Israeli Defense Forces (IDF) commandos in the lead or a precision aerial strike with the Israeli Air Forces (IAF) in the lead.

In 1977, Begin and his cabinet contemplated an attack against Iraq. At that time, Defense Minister Ezer Weizman approached Israeli Air Force Chief of Staff David Ivry with a proposal: plan and practice a long-range aerial attack of greater than 650 nautical miles.⁴¹ Weizman, a pilot and father of the modern Israeli Air Force, knew the IAF could complete the mission. Ivry worked hard to prove his mentor correct. Using the most advanced platform the IAF possessed, the F-4, Ivry

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foresaw great risk but a mission that was not impossible. Ivory had several missions flown to determine the true distance an appropriately loaded F-4 would fly.⁴² The risk appeared great in 1977, but still within the realm of possibility.

Decision against Commando Raid: The Israeli military had several commando teams available to attack Osiraq. Israel's military was familiar with complex commando operations. In 1976, Israeli commandos completed a complex raid on Entebbe, Uganda, freeing trapped Israeli hostages. However, a raid deep into Iraq would face significantly different challenges than the Entebbe raid. IDF planners focused on the three main parts of a Special Forces operation: the insertion, the operation, and the extraction. Insertion and extraction were difficult due to Osiraq's location greater than 1000 kilometers from Israel and surrounded by open desert. This would require a combination of large helicopters, heavy airlift, light-attack helicopters, and a multitude of logistics components. The operation at the reactor also would have serious risks. Israeli planners expected casualties among their commandos, the Iraqi guards, and a large number of international scientists in Osiraq.⁴³ At a minimum, well over 200 people would participate in a ground raid.⁴⁴ Additionally, maintaining complete secrecy with many participants would be difficult. Planners concluded the risks of launching a multifaceted ground raid would far outweigh its benefits, and Israeli policy makers would not accept such a narrow margin of success.

Decision on Air Strike: Israeli planners concluded the best option was to assign the IAF with a precision strike mission directly against the core of the reactor. According to Amos Perlmutter, "The total destruction of the nuclear reactor would in that case be achieved at the lowest risk to human lives and the smallest damage to Israel in terms of

world public opinion.”⁴⁵ The IAF Planning Branch gathered all available information on the Osiraq reactor. This tasking gave Colonel Aviem Sella, chief of the planning branch, the opportunity to prove airpower's central role in security of the small state. In 1980, the IAF had approximately 650 airplanes, most of which were second- and third-generation fighter aircraft.⁴⁶ Based on number and type, the IAF was the third best Air Force in the world and arguably, the most experienced in modern tactical jet warfare. In the late 1970s, the Israeli government spent over 50 percent of its defense budget modernizing the IAF. Sella and the IAF took the Osiraq raid as the opportunity to justify the air force's budget allocation.

By 1980, the IAF had several different airplanes it could employ against Osiraq. Israel possessed the A-4N Skyhawk, the KFIR C-2, the F-4 Phantom, the F-15 Eagle, and the F-16 Fighting Falcon.⁴⁷ The Skyhawk and the C-2 were Israel's primary air-to-ground delivery platforms. However, they lacked the range to reach Osiraq without refueling. They also lacked speed for an effective egress from the target. The Phantom barely had the range to reach the target and would risk two lives (pilot and weapons systems officer) during the sortie. However, it was Israel's only means of delivering precision weapons on target at the time. The Eagle and Falcon were Israel's newest aircraft and the only third-generation fighters in the region at the time of the strike. These airplanes could fly the sortie without refueling. Furthermore, both had advanced Inertial Navigation Systems allowing them to fly long distances without the need for ground-based navigation aids. The IAF had the right tools to accomplish the mission.

Employment Considerations: Operation Babylon, the code name for the Osiraq strike, was a simple, well-planned operation. The IAF Planning Branch chose non-precision weapons delivered by third-

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generation aircraft to strike Osiraq. In choosing this option, the IAF planners kept focus on their primary task: absolute destruction of the Osiraq nuclear reactor. Their choice of weapon and delivery platform ensured the best odds of meeting this objective. Their ability to remain focused on a specific mission is the critical part of the Israeli planners' professionalism. Israeli planners rejected several tactical options based on the overall goals of the operation. For example, the F-4 Phantoms' standoff weapons could minimize potential losses by not exposing Israeli aviators to enemy Anti-Aircraft Artillery (AAA) and Surface to Air Missiles (SAMs) surrounding Osiraq. If inclement weather obscured the reactor, however, the ability to guide the precision munitions to the target would decrease. The resulting strike would be less effective than a non-precision weapon delivered by a professional aviator in a smart machine. Given Israeli sensitivity to loss of life, it is remarkable military planners were given this option by government officials. Therefore, Israeli military and government planners made the choices that gave the mission the best chance of success.

Launch the Fleet!

Israel was the only nation in the region with the ability to plan, practice, and execute this mission. Israeli tacticians were planning the mission even before the arrival of its second squadron of F-16s, which would be equipped with under-wing fuel tanks.⁴⁸ To be successful, each phase of the mission called for detailed maps, navigation routes, weather data, aircraft performance charts, bomb fuse timing, release angles, target area flows, and contingency plans. This meticulous planning began in 1977, four years prior to the attack.

The Plan: The plan for Operation Babylon remained a secret even from those practicing for the mission. All were aware of the fuel and time constraints of the secret mission without knowing the actual

target.⁴⁹ Other than the cabinet members Begin consulted on the decision, only a handful of military members knew the complete details of the mission. Initially, only three of the men in the F-16 formation knew Osiraq was the target. Details about the pilots in the F-15 formation remain classified. However, it is safe to assume less than a handful of pilots knew of the actual target. In this manner, Israeli decision makers limited the risk of spilling secrets that could potentially endanger the strike's success. According to Perlmutter, "It is estimated that at least 80-100 people knew in advance of the intention to destroy the Iraqi nuclear reactor at some time and that a smaller number had knowledge of the precise day in advance once it was finally decided."⁵⁰ In this manner, the secrecy surrounding Operation Babylon secured the chance Israeli fighters would begin their attack as a surprise.

Practice...Practice...Practice: Pilots involved in the strike practiced over nine months before the actual attack. Israel is a small country approximately 210 nautical miles from north to south and approximately 45 nautical miles from east to west. According to McKinnon, "Most combat flights in Israel are less than an hour long. It is 68 miles to Damascus from Ramat David, so long flights just are not part of the Israeli fighter pilot's regimen. It took a lot of retraining in the skills of max-endurance flying for an Israeli pilot to convince himself to remain airborne for nearly three hours."⁵¹ The low-level route to the target would take more than 90 minutes. However, the true stress lay beyond the extraordinary length of the sortie.

The pressure point in the mission was the target run and the crucial pull up to safe-arming altitude. At this point, the pilots exposed the jet to ground fire, yet had to concentrate solely on aiming the jet for weapon delivery. The two-thousand pound bombs used to destroy the

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Osiraq reactor had slightly delayed fusing to increase the cratering effect against the reactor dome.⁵² The explosion of this type bomb extends vertically 2800 feet and horizontally 3400 feet within nine seconds of impact. Israeli safe-arming altitude was 3800 feet. This meant any bomb released below this altitude would come off the jet unarmed since it held high potential to destroy the airplane that just dropped it. The key to hitting the reactor successfully was the rapid shift from climbing flight (to get above safe-arming altitude) to nose-low stabilized on the target. According to McKinnon, "The Israeli pilots practiced and practiced and practiced so they could handle the mission so swiftly that their apex was less than 5000 feet above the ground and they could virtually drop the bombs with their eyes closed." Moreover, to practice visual identification of a target, McKinnon states, "They all practiced dive-bomb targeting on an Israeli radar dome site in the Negev. It realistically portrayed the reactor dome."⁵³ This practice allowed Israeli pilots to limit their exposure in the target area and quicken the intervals between their attacks. After more than nine months of practice, the IAF was prepared for Operation Babylon.

Execution: Operation Babylon launched from Etzion Air Base. Starting on Friday, 5 June, Israel staged six F-15s and eight F-16s at Etzion Air Base in the southeast part of the Sinai desert. These airplanes staged into Etzion early to avoid suspicion. Monday was Shavuot holiday and most Israelis expected limited military operations during the holiday break. The pilots flying in Operation Babylon stayed together 5-7 June in makeshift quarters waiting to carry out the mission. The briefing outlined intricate details of the flow of the mission. It covered every conceivable contingency operation, including how to handle ejection over Iraq. Months of practice made the tactical details of the mission seem mundane. IAF commander

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Major General David Ivri and IDF Chief of Staff General Raphael Eitan attended the brief to support the mission first hand. After the brief, the pilots stepped to their aircraft.



Figure 1: Overhead View of the Strike

The level of professionalism displayed by each member of the strike team reinforced the reputation of the IAF. The ingress to the target lasted one hour and thirty-three minutes. The aircraft flew in a relatively close formation at approximately 360 knots and 100 feet above the desert floor. No radio calls or radar emissions, which could tip enemy outposts to the coming attack, came from the formation of F-15s and F-16s. At the briefed locations, the F-15s split into two-ship formations, turned on their radars and climbed to cover the F-16s. Approaching the initial point, where the F-16s would make final

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preparations to strike the target, the final two F-15s climbed away from the strike formation and turned on their radars and external electronic counter-measure pods. These aircraft served the dual purpose of protecting the F-16s from hostile aircraft as well as hostile search radars.⁵⁴ Shortly thereafter, the F-16s spread their formation out for proper target spacing. Each two-ship arrived over the reactor as the explosion from the last formation subsided. In less than two minutes, Israeli F-16s dropped more than fourteen metric tons of ordnance around the center of the sixty-foot reactor. According to Perlmutter, “In all, sixteen Mk84 iron bombs were dropped on the reactor. The accuracy of the bombing, considering the IAF used no smart bombs, was astonishing. All but two were direct hits within thirty feet from the center of the target.”⁵⁵ The strike on Osiraq unfolded precisely as Israeli tacticians planned.

The battle damage assessment revealed the success of the mission. Israel most likely used in-flight video tape recorders (VTRs) to assess the reactor's destruction.⁵⁶ According to McKinnon, the tapes from aircraft number seven and eight reveal the reactor dome completely caved in and a destroyed cooling pool.⁵⁷ However, Perlmutter claims a specially equipped F-15 flew by the reactor after the bombing on a special reconnaissance pass to verify the damage. Regardless of how Israel verified the damage, the Israeli fighters destroyed the Osiraq reactor.

Reinforced IDF Dominance: Criticism of the strike covers important details, but neglects the most critical factor shaping this Israeli success. They each overlook the root cause of success: Israeli tacticians employed each weapon system in a well-suited mission. The IAF used the F-15, designed for long-range detection and air superiority, in its optimal role: protecting strikers as they dropped their

munitions. Similarly, the IAF used the F-16 in its optimal role as a strike fighter against heavily defended targets. Israel was the only nation in the region that possessed these aircraft and tactical knowledge about their optimal use.

News of the strike came out of Israel on 8 June 1981 and had immediate domestic and regional implications. Begin received the political boost he envisioned. It also disheartened Israel's enemies and reinforced the perception of IDF dominance. The strike also produced immediate international ramifications. Both the United Nations (UN) and the International Atomic Energy Agency (IAEA) condemned Israel strongly for the strike. Only US involvement forced these agencies to stop short of punitive actions. Israel's Osiraq strike was a resounding vote of no confidence on IAEA safeguards. According to Shai Feldman, "Whatever else might be said about the Israeli attack on the Osiraq nuclear reactor near Baghdad, we now know that there is at least one effective anti-proliferation policy in the world."⁵⁸ Menachem Begin and Israel predicted harsh responses from the international community. They interpreted every condemnation short of punishment as leaders "going through the motions"⁵⁹ of international diplomacy.

Domestic Perceptions: The strike emboldened the Israeli population and carried Menachem Begin to a Knesset election victory. According to Shai Feldman, "Primarily, its brilliant execution enhanced the credibility of Israeli deterrence. The 7 June operation was a further indication of Israel's superior military capabilities."⁶⁰ The biggest dilemma the strike alleviated was the short-term likelihood for a nuclear equipped Iraq. Thus, as an immediate strategic impact, the strike strengthened Israel's military standing, bought time vis-à-vis the Iraqi nuclear program, and boosted Begin's domestic political position.

Conclusion

Israeli decision makers planned the Osiraq strike to obtain short-term gains, but the long-term consequences are now unappealing. According to Perlmutter, “The short-term price Israel had to pay for the operation was rather minimal. In early June 1982, Begin, Sharon, Eitan and other supporters of the raid could look back at the decision and conclude that the events of the passing year had proved it to be highly justified.”⁶¹ Domestically, Begin gained substantial political capital within Israel. In addition, the strike set Iraqi nuclearization back by ten years. However, long-term implications may counter these short-term benefits. According to Feldman, “The raid increased the Arabs’ motivation to accelerate their efforts in the nuclear field. Such acceleration is regarded by the Arabs as a form of resistance to Israel’s perceived intention to maintain nuclear superiority indefinitely.”⁶² In the future, Israel might not have the military capability to accomplish another Osiraq. In essence, the strike on Osiraq was a one-time counterproliferation operation for Israel and the global community.

EFFECTS AND AFTERMATH

This section identifies the deterrent effects of the Israeli strike on the Osiraq reactor and assesses the political impact of the preventive raid on the Iraqi nuclear weapons program. The section first examines Israeli political actions following the strike and analyzes Israel’s perception of the mission. Then it reviews empirical results of the strike from the Iraqi perspective, as well as political factors facing the Iraqi government after the strike. Finally, the section identifies the repercussions of preventive military strikes to provide policy makers lessons related to future preventive military actions.

Setting the Stage

Tactically, the strike on Osiraq was a brilliant success. However, Israeli leaders needed confirmation of the reactor's destruction. Several avenues existed to validate battle damage. The foremost means was the amount of secondary explosions reported by the aviators after their bombs hit the target. Next was the Video Tape Recordings (VTR) of the F-16's Heads-Up-Display (HUD), which showed the bomb impacts. Israel normally had the means to receive classified US satellite imagery, which would allow verification of the strike, but US imagery was restricted after the attack became public. Months later, when Israel finally received US satellite imagery, it verified that 14 of the 16 bombs dropped on the Tammuz reactor struck within 30 feet of the center of the reactor structure.⁶³ Achieving tactical surprise for all 14 Israeli fighter aircraft was a success in its own right. Striking the target with seven of eight aircraft, however, exceeded the Israeli leaders' expectations.

Domestic Factors in Israel: Israeli Prime Minister Menachem Begin perceived the strike as vital to shield Israel from Saddam Hussein's growing military capability. Begin believed the Iraqi leader was a new "Hitler." The Prime Minister referred to Hussein as the "Butcher of Baghdad."⁶⁴ In 1979, Iraq's military had an army of 190,000 men, 2,200 tanks, and over 400 attack aircraft. These conventional forces were formidable, yet Iraq was building chemical, biological, and nuclear weapons. Although Hussein was threatening Iran during this time, Begin saw Hussein as the foremost regional threat facing Israel. Thus, he justified his decision to strike based on the threat a nuclear-equipped Iraq posed to Israel. News of the mission's success produced celebration at the Prime Minister's house.⁶⁵

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Domestic political considerations, more than the Iraqi threat, obligated Begin to order the strike. At the time of the strike, Begin was both Prime Minister and Defense Minister. Pushing for Begin's retirement, former Defense Minister Ezer Weizman had planned to succeed the Prime Minister at the Herut Party conference of 1979.⁶⁶ However, Begin maintained his position and further consolidated his power within the party. This forced Weizman to resign his position as Defense Minister. Improving his domestic political support was critical for Begin as a decision on the fate of Osiraq drew near (initially the strike was to happen in October 1980). When word on the strike spread among Israeli policy makers, however, "the October decision was no longer the property of a select few."⁶⁷ Labor party members were urging political caution on the hope diplomatic relations with France would yield results. High-ranking military advisors and intelligence officials also questioned the necessity of military action. In a secret memo to the Prime Minister, Shimon Peres, the Labor Party leader, stated, "I speak as a man of experience...what is intended to prevent can become a catalyst."⁶⁸ To these advisors the preponderance of evidence suggested Iraq would not have enough material to field a nuclear weapon until 1985 at the earliest. Begin saw the critical part of the equation not in terms of uranium but in domestic political capital.

Knesset Elections: The Likud party controlled the Knesset during June 1981, but elections were scheduled later that year. According to Perlmutter, "Begin saw the reactor as a clear and present danger. He also knew that it represented a political weapon which could be used against him in more ways than one."⁶⁹ Begin limited the decision makers on the strike to three: himself, Finance Minister Ariel Sharon, and Foreign Minister Yitzhak Shamir. Sharon and Shamir held similar strong opinions on Israel's defense vis-à-vis Iraq. Begin warned his

cabinet about taking action against the reactor lightly. Ordering a strike of this magnitude was a high-stakes international and domestic political gamble. If the strike failed the Likud and Begin would certainly lose the election, but most importantly, Iraq would still have a viable nuclear program. Conversely, even if the strike succeeded the Israeli population might see the raid as only a political ploy taken to bolster Begin in the polls. Therefore, regardless of the strike's outcome, the result politically was far from secure. Most politicians take action designed to keep them in power. However, Begin later stated, "If we had not done this, if we had not acted, I would never have forgiven myself."⁷⁰

The Likud party won the following election and consolidated power. The Labor party attempted to spin the Osiraq attack as a political display, yet a professional poll taken the week of the strike showed a five percent increase in Begin's approval rating. Governmental support also increased to its highest levels since Begin took office. Perlmutter states, "The contest was no longer between Likud and Labor but between Begin and Peres...the 1981 elections centered on a personality contest: Peres won the TV debate—but Begin won the votes."⁷¹ The resulting elections favored Likud by 46 seats to 40 for Labor in the 120-seat Knesset. The other seats went to lesser parties. Many of these lesser parties (National Religion, Shinui, and Shas parties), however, backed Likud during this time. Begin's government used action to voice its position clearly on nuclear weapons proliferation in the region. The election results illustrate the general Israeli approval of the Osiraq attack.

International Factors after the Strike: International political ramifications were significant for Israel, but did no lasting damage. Other than Iraq, Egypt stood the most to lose from the Israeli attack.

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Egypt strongly reprimanded Israeli for the attack, but it could not afford to be “weak” toward the Zionist entity. In reality, Egypt could not afford the perception among other Arab nations it had abandoned the Palestinians. In this case, Israel stretched the loosely held boundaries between itself and Egypt by striking three days after the conclusion of the Sadat-Begin summit of Ophira.⁷² The Egyptian press raged against the Israeli attack. In addition, Egypt cancelled joint Israeli-Egyptian delegations discussing commercial ventures and agricultural planning altogether. Likewise, many European nations joined the international community in condemning the strike, but took no action to penalize Israel. The Israeli strike hurt France, in particular. The technology transfer from France to Iraq was lucrative and over one-quarter of Iraq's \$3.5 billion defense spending went to France. During the strike, Iraq used French and Soviet equipment in its air defenses, and use of these systems did not stop the attack. Further highlighting their equipment's inability in combat against US military equipment would not increase global estimation of their value. After the attack, France's flow of material and technology to Iraq would slow but would not cease, and diplomatic channels with Israel never closed.

The United States joined the global outcry against the attack, but took no long-term action against Israel. The United States took three short-term actions against Israel. After issuing a strong verbal condemnation against the strike, the Reagan administration suspended the delivery of four F-16s to Israel. The State Department and Congress also officially initiated an investigation of the legality of the Israeli raid vis-à-vis the Arms Export Control Act. This act limits Israel's employment of US military hardware only to defensive acts. The media within the United States was extremely outspoken against the raid, however. All of the attention paid to Osiraq quickly took a

lesser spotlight in July 1981 as Israel bombed Palestinian Liberation Organization (PLO) headquarters in Beirut.

IAEA Aftershocks: The International Atomic Energy Agency (IAEA) initially drafted a resolution calling for Israeli removal from the IAEA. However, according to Shai Feldman, “The draft was opposed by the American delegation which argued ‘that punitive action against Israel would do great harm to the agency and to global nonproliferation.’”⁷³ The result was a resolution recommending Israeli IAEA suspension. This suspension passed but did not punish Israel significantly. Israel expected much worse. In essence, Israel’s strike on the Osiraq reactor was a long-distance vote of “no confidence” in IAEA safeguard measures. To the IAEA, this represented a possible Pandora’s Box, with other threatened nations taking up arms to strike the nuclear facilities of their enemies. Due to United States intervention, the IAEA did not expel, nor did it apply devastating new sanctions against, Israel.

The Israeli attack forced the IAEA to interact with the UN Security Council. For the two regimes, this interaction was a significant transformation in the international order. According to David Fischer, “the Board sent a report to the Security Council after the Israeli bombing...however, it was the Gulf War ten years later that brought the IAEA for the first time into direct consultation with the Council.”⁷⁴ The first report condemned Israel: ten years later the IAEA called for the complete dismantling of Iraq’s nuclear facilities. As non-proliferation became critically important for international regimes, the IAEA looked back on actions in 1981 as a starting point. Israel’s vote of no confidence made a lasting contribution to the effectiveness of the international nonproliferation regime.

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United Nations Resolutions: The United Nations (UN) published a Security Council Resolution censuring Israel for the attack. However, this Resolution called for no punitive action against Israel since the United States again resisted such actions. Surprisingly, Iraq did not force a UN vote to expel Israel when it had the chance. According to Ghassan Bishara, "Iraq's willingness to extricate the United States from a terribly embarrassing vote against the rest of the Security Council members is still puzzling."⁷⁵ If Iraq forced an embarrassing veto on the US Ambassador, however, it would alienate Washington's Arab allies as well as the United States in the process. Such an action would not portray Saddam Hussein to other Arabs as a potential pan-Arab leader, as he so strongly desired. Another reason Iraqi delegates did not force the US delegation to veto was the relative warmth of the relationship with the United States at that time. The United States required a regional Arab ally, and Iraq, deep into the war with Iran, needed aid from the United States. Shai Feldman states the results: "The Iraqi-US cooperation in drafting the post-operation U.N. Security Council Resolution was a natural consequence of this requirement."⁷⁶ Thus, Israel managed to escape with a very meager reprimand considering the gravity of its actions against Osiraq.

Bomb Damage

Damage to the Tammuz 17 reactor complex at Tuwaitha was significant. Verifiable information about BDA open to international scrutiny was, at best, sketchy from the Government of Iraq. Unclassified reports indicate Iraq had two French nuclear reactors, one Russian nuclear reactor, and several reprocessing facilities at Tuwaitha.⁷⁷ There were several technical laboratories surrounding Osiraq, the largest of the French reactors. Osiraq, named after the Egyptian god of the dead, was the only Iraqi reactor capable of

significant plutonium production. After the Israeli attack, Osiraq was no longer capable of producing plutonium.

Physical Results at the Osiraq Reactor: Iraq lost incredible nuclear assets in the Israeli strike on Osiraq (Figure 4).⁷⁸ Khidhir Hamza was a senior Iraqi scientist trained in America at Massachusetts Institute of Technology. He was a nuclear weapons designer in the Iraqi scientific community. His office was in the Tuwaitha complex. Hamza states the results of the Israeli strike: “The place was a disaster. The reactor dome was completely gone. The reactor cavity, kind of a swimming pool where the fuel rods were cooled, was cratered beyond any hope of repair. The uranium, however, was safe.”⁷⁹ Yet, there were larger problems than the physical destruction of the reactor. Primarily, Iraqi scientists were now unable to use plutonium in developing the necessary fissile material for a bomb. The next most available route was to enrich uranium through a centrifuge process. This process was more time consuming and wrought with expensive, sophisticated, and scarce scientific material. The Osiraq reactor alone had cost the Iraqi government \$300 million dollars to purchase from the French government. Iraq was now funding two wars, one against the Iranians and the other against nuclear non-proliferation.

Immediate Strike Implications: The strike on Osiraq punished Iraq more in time than financial penalties. Milan Vego states, “Battlefields wax and wane in combat, but lost time is irreplaceable.”⁸⁰ Iraqi scientists began courting French officials in the effort to purchase Osiraq in the early 1970’s. The official purchase did not occur until 1974. Safeguarding radioactive material and manufacturing highly technical equipment take enormous quantities of time. Thus, Tuwaitha was not operational until five years after purchase. According to Feldman, “There is no doubt that Osiraq’s destruction slowed the pace

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of Iraq's nuclear program. Even if Iraq could replace its loss with an identical reactor, which now seems likely, some 3 to 4 years will have been gained."⁸¹ Eight Israeli F-16s destroyed five years of work in less than 90 seconds. On 8 June 1981, Iraq was once again years away from obtaining a nuclear weapon.

After the strike on Osiraq, Iraqi scientists faced new obstacles in constructing a nuclear weapon. They were only able to obtain "Caramel" fuel; a lower grade radioactive material enriched only 7-10 percent and used singly for experiment reactors.⁸² Yet, the strike on Osiraq did not destroy all of Iraq's enriched Uranium. However, the scientists with expertise to use this Uranium were the most difficult piece to replace. Iraqi scientists, studying abroad, sought shelter from Saddam Hussein and refused to return to Iraq. Those who remained took the risk of losing their lives when traveling internationally. Yehia al-Meshad was murdered while in Paris attempting to buy enriched Uranium from the French government. The French police attributed the murder to robbery, but Iraqi scientists suspected Israel's intelligence community as the culprit.⁸³ Regardless of who accomplished this, fear slowed the Iraqi scientific community significantly.

Domestic factors in Iraq: Domestically, Saddam Hussein faced political ramifications from the strike, but none that jeopardized the government. The Iraqi population was largely unaware of what Tuwaitha held. More importantly, the war with Iran offered a public diversion. Saddam Hussein's Ba'athist government formed around the inspiration of a strongman ruling an equally strong-willed people. Thus, much of Hussein's political legitimacy focused on the leader's strength in conflict. Yet, the Iraqi government did not launch a media attack immediately decrying the illegitimacy of the raid as they did in

the Gulf War and Operation Iraqi Freedom. Instead, Israel was the first to announce the strike. Uri Bar-Joseph states, "Under these circumstances it was quite clear that the official Israeli announcement concerning the surprise attack came as the second shock for Saddam Hussein's regime."⁸⁴ Politically, the attack appeared to Hussein as a setback in prestige and resulted in a 72-hour blitz against Zionism from Radio Baghdad. Bar-Joseph continues, "It was still interesting to note that Saddam Hussein himself kept quiet for ten days after the raid. As leader of the Iraqi people, he probably knew that some other reaction apart from the propaganda campaign against Israel was needed."⁸⁵ Iraq, however, was in no position to oppose Israel militarily.

Arab Responses: Arab sentiment against the Israeli attack was evident but did not convert into military action against Israel. The Iran-Iraq war divided Arab sentiment in the early 1980's, but once again, the Israeli strike unified the Arab world against the "Zionist entity." Syria had much to gain from destruction of Iraqi nuclear weapons. Iraq's Ba'ath party has always labored against Syrian Ba'athists. However, Syria vehemently declared Arab solidarity of action against Israel. Likewise, Saudi Arabia publicly condemned the Israeli strike calling for Arab unity. In addition, King Khalid offered to contribute funds to rebuild the Iraqi reactor. According to Uri Bar-Joseph, "It [the attack] was seen as an insult to the whole Arab world. This was the genuine feeling and perception of every Arab. The image of the Israeli pilot as Superman—similar to the one that existed following the Six Day War—had also been reinforced upon the Arabs."⁸⁶ Egyptian President Anwar Sadat also publicly condemned Israel. Fresh from the peace accords with Begin, he needed to limit his isolation from the Arab community. According to Feldman, "Egypt attempted to return to inter-Arab activity by-among other things-aiding Iraq in its war with

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Iran. Thus, some military aid had been extended by Cairo to Baghdad.”⁸⁷ Privately, all Arab states recognized Iraqi aims at hegemony and saw a nuclear-equipped Iraq as a destabilizing force in the region. The Arab nations needed a nuclear-equipped state to offset Israel's nuclear ability, but did not want Iraq to be that state.

The global uproar against the Israeli attack resulted in some compensation for Iraq. In the early 1980's, the Reagan administration was in search of a regional ally (other than Israel) to replace Iran. In turn, Iraq was desperately in need of equipment and funding during the conflict with Iran. The Osiraq attack acted to stop Iraq's nuclear proliferation, but simultaneously opened diplomatic avenues for the United States. Every meeting with United States officials reinforced Saddam Hussein's stature and prestige to Iraqi citizens and brought some form of reimbursement. However, global aid and Arab solidarity could not replace the time and money Iraq lost during the strike.

The Value of Preventive Strikes

The overarching question remains: did Iraq lose all interest in obtaining a nuclear weapon after the Osiraq strike or did they redouble their nuclear efforts? The strike devastated Iraq's nuclear program, decimated the regime economically, and hardened Saddam Hussein's desire to become the leader of a nuclear nation. In his case study review, Patrick Morgan links deterrence to controlling conflicts by using appropriate threats and indicates that in spite of taking the correct deterrence steps, a motivated challenger can attack. The motivation of the challenger is a decisive issue in the level of success a deterrent relationship will have. Peter Lavoy indicates that a deterrence association between states can be offensive as well as defensive in nature. “The case studies show that many new actors plan to use unconventional deterrents both to support the status quo and to change

it.”⁸⁸ Iraq clearly desired nuclear weapons as an unconventional deterrent against the Zionist entity. Thus, in this study deterrence includes offensive actions such as preventive strikes and allows the examination of motivating factors in both Israel and Iraq.

Short-Term Value: The policy of the Government of Iraq was a direct reflection of Saddam Hussein’s private desires. His regime implemented his policy without question. Khidhir Hamza mentions his unflinching obedience to illogical orders due to the deadly consequences of disobedience. According to Morgan, “No wonder it was difficult to deter Iraq...the trouble was the coalition promised to damage Iraq’s economy and society...that was entirely ‘bearable.’ The way to deter Iraq was to have promised to kill him [Saddam Hussein] or remove him from power—the only things he really cared about.”⁸⁹ Power and regional hegemony motivated the Iraqi leader. In this manner, much of Iraq’s coarse foreign policy was a reflection of its dictator’s desire for power.

Saddam Hussein’s attempt to obtain nuclear weapons was a natural extension of his need for influence. The Israeli strike on Osiraq occurred before the reactor went critical. Thus, the bomb-grade Uranium was still available to Iraqi scientists. According to Khidhir Hamza, they salvaged 25 kilograms from the rubble. Within six years after the strike, Hamza estimates Iraq had twelve thousand scientists and technicians working to develop a nuclear weapon. Economically, following the strike, Iraq poured an estimated ten billion dollars into its now buried nuclear facilities scattered throughout Iraq. These scientists were able to work relatively uninterrupted for four years before Desert Storm hampered their efforts. They developed viable shaped charges, manufactured their own explosive caps, and cast their own Uranium sphere. Although Iraqi scientists accomplished significant milestones

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in design technology, they lacked an enriched core able to sustain a significant explosion.⁹⁰ It was only a matter of time before Iraqi scientists obtained this fissile material. However, Desert Storm interrupted this attempt and further thwarted the Iraqi dictator's plan for nuclear weapons. Thus, the Israeli strike on Osiraq delayed Iraq's nuclear development, but did not dissuade Hussein's search for "the bomb."

In attempting to dissuade Iraq, the Israeli government did not view Hussein as irrational. An intelligence dossier on Hussein correctly reported him as a power-hungry, calculating risk-taker. Lavoy states, "The common assumption is that we [the deterrers] are rational, they [the challengers] are constrained by culture."⁹¹ Israel chose to restrain Saddam Hussein by attacking one of his instruments of power. While this action did not discourage Hussein from his desire for nuclear weapons, it did buy time for Israel in the conflict. One condition of successful deterrence is having a proper perspective of the challenger. While the Israeli preventive strike on Osiraq served several short-term goals for Israel, it had long-term repercussions for the world.

Long-Term Value: The Israeli preventive strike solidified a long-term change in the deterrence landscape. The strike was the first example in the Middle East of a precision aerial attack on another nation's nuclear facilities. This Revolution in Military Affairs (RMA) opened new realms of possibility based on a modern air force's capability. According to Morgan, "Why is this a revolution? The best answer is that it should greatly affect the way force can be used. Force has usually been a blunt instrument."⁹² Morgan claims nations with precision strike ability will now find deterrence much more appealing. This is incorrect. Precise force is still force. Military action should be the last resort any statesman chooses, due to its life and death nature.

As quick and surgical as any precision strike appears *prima facie*, the long-term effects lie within the deterrence relationship of the states and not the effects of the weapons. Eliot Cohen states: “The days of Osiraq-type raids on a single, easily located, and above-surface nuclear facility are over. Secrecy, camouflage, deception and dispersion will make preemption a far more extensive and uncertain operation than ever before.”⁹³ Osiraq was a one-time good deal for the Israelis. The lessons since Osiraq prove Cohen correct so far. The long-term effects of any surprise attack will produce the following results: “harder” targets and more staunchly antagonistic enemies. This does not mean this author condemns military strikes to serve the state’s purpose. On the contrary, a military strike should be devastating and used when a nation is prepared to follow with additional military action.

Domestic political aspects often override significant international political factors. This was the case with Israel in June 1981. Every intelligence indicator Begin received indicated Israel had time to mitigate Iraq’s nuclear reactor by other than military means. Begin saw the attack as a political launching pad and his ideological responsibility to the people of Israel. Concerning domestic issues Morgan states, “there is recurring evidence that governments, elites, and leaders are often barely moved by general deterrence threats that they ought to take into account. Often short-term thinking, not attuned to larger implications and potential consequences of what they are considering, drives them. They seem caught up in domestic political or ideological preoccupations.”⁹⁴ Strategically, Israel has a lack of geostrategic depth and extreme sensitivity to loss of Israeli lives. A nuclear weapon in the hands of a staunch, determined enemy provoked strong reactions in Begin’s government. Morgan also states, “Top decision makers rarely understand the military preparations made to deal with crises, resulting

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in force postures unsuitable for deterrence situations.”⁹⁵ Such was not the case in Israel, Begin and his trusted advisors were all very familiar with the Israeli Defense Force’s capabilities. The ideological and domestic political factors drove Begin for an early June strike.

Asymmetric Effects: Military actions after a preventive strike require significant resolve by the deterrer. Historically, the Government of Israel has a poor record of accomplishment in deterrence. Morgan chose Yair Evron’s deterrence case study on Israel. Evron concludes, “Deterrence failed even though Israel was militarily superior, its resolve was clear, and it communicated threats clearly. The failures arose out of Arab domestic political pressures and the impact of crisis on Arab decision making.”⁹⁶ Later in the case study Morgan confirms, “Nuclear weapons are not irrelevant but not dominant.”⁹⁷ The first lesson in the aftermath of Osiraq is nuclear weapons were nice (and expensive) distracting mechanisms with little significant effect. By striking Osiraq, Israel demonstrated its resolve to deny nuclear weapons in Arab nations in accordance with its policy. However, the nature of this attack is “bearable” according to Morgan. It did not threaten the full sovereignty of Iraq. Thus, Saddam Hussein continued developing nuclear weapons clandestinely. Morgan states the second deterrent principle, “Where the threat is less than destruction of the regime, it is possibly ‘bearable’ so deterrence is less likely to work consistently and may have to be sustained by fighting, perhaps repeatedly.”⁹⁸ The last principle is a corollary of the second; that the challenger must be willing to employ the threat on the deterrer in order to prove credibility. Thus, most deterring nations limit the threat in order to facilitate credibility. This succeeds in making the deterrence “bearable.” Morgan states this last lesson, “deterrence will more often involve not just threats but force and will be less likely to work quickly,

requiring repeated applications of force in repeated confrontations. This will make deterrence expensive, difficult, and hard to sustain over a long period, markedly eroding its effectiveness against opponents determined to outlast it.”⁹⁹ The Osiraq reactor disappeared in 90 seconds of bombing, but the remains haunt deterrence theory effectively today.

Conclusion

Preventive strikes are relatively simple to plan and execute. They make a global statement immediately. However, the repercussions of these strikes are lasting and costly. Currently, the United States can see the truth of this implication daily. Policy makers eagerly looked for a precision Navy Tomahawk or TLAM to meet momentary political needs in the Middle East several years ago. Now the United States is seeing the long-term consequences. The conclusion of *Planning the Unthinkable* encourages United States decision makers to be prepared.¹⁰⁰ A one-size-fits-all precision strike course of action will not produce good results.

CONCLUSIONS

Israel is willing to enforce nonproliferation in spite of stepping beyond international standards and regimes. The attack on Osiraq did counter Iraq's nuclear program in the decade following the strike. However, the strike also virtually guaranteed the need for future military action against Iraq. This section reviews a summary of research findings and offers policy recommendations for US policy toward Israel and future counterproliferation actions.

Summary of Findings

After the 1973 war, Israel's strategic outlook was insecure. The presence of potential Iraqi nuclear weapons only exacerbated the

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insecurity. When Israel considered the known behavior of Saddam Hussein, now in search of nuclear weapons, it concluded passivity was not an option. Israel elected to attack the Iraqi nuclear reactor by overt, covert, and diplomatic means first. This attack started in 1974 and concluded when Begin decided to switch the attack to military means

In October 1980, Israeli decision makers held two critical cabinet meetings. On 14 October, Begin was in favor of military action, but desired further work in the diplomatic arena. At Begin's next cabinet meeting, an emergency session, he was convinced of the action to take. He implored his cabinet to vote for the destruction of the reactor. Once Israeli policy makers saw the ineffectiveness of other methods, they quickly elected to strike. After gaining approval, Begin's decision was simply a matter of when to strike the reactor. In 1981, the timing was right, and Israel proved it lives by the Begin Doctrine.

Israeli decision makers planned the Osiraq strike to relieve short-term pressure, but the long-term consequences are uncertain. The strike set Iraqi nuclearization back a decade, and domestically, Begin gained substantial political capital within Israel. However, continuing uncertainties may counter these short-term benefits. Two of these uncertainties are an intense desire among most Arab states to counter Israeli military dominance by going nuclear, and motivation for the prestige associated with being in the nuclear club. In the future, these factors may suggest military means to accomplish another preventive strike are significantly reduced as Israel copes with future nuclear proliferators who also learned lessons from the strike on Osiraq. In essence, the strike on Osiraq was a one-time good deal for Israel and the global community.

The policy implications from a single military action taken over twenty-three years ago still apply today. Preventive strikes are simple

to plan and execute compared to major military actions on the national strategy scale. Moreover, in spite of their simplicity, they make a global statement immediately. Media attention serves to highlight the importance of the problem. In the long term however, a preventive strike such as Osiraq may reinforce a state's desire toward nuclear proliferation. Such was the case with Iraq.

This study results in three findings. First, future preventive strikes against nuclear targets will be less successful. Other nations seeking a nuclear option also have learned valuable lessons from the strike on Osiraq: dispersal and redundancy of facilities. Thus, while a future strike may hinder nuclear plans temporarily, the time will not be measured in years unless followed with more strikes. Second, the media backlash after a strike will serve as an impetus to radicalize the proliferator's motivation toward going nuclear. Third, decision makers should make every attempt to work within the confines of current global constructs for stability. Regimes such as the IAEA and UN require cooperation for strength. By working within international norms, nonproliferation may take longer than through other means, but it stands a chance to be far more effective in the end.

Policy Recommendations

This leads to two policy recommendations. First, US policy makers should recognize the consequences of diplomatic failure on the process of nonproliferation. Israeli decision makers attempted to counter Iraq's nuclear plans diplomatically for seven years before concluding a military option was the only appropriate solution. Israeli policy makers justified the strike based on their perception of apparent US vicissitude toward Iraq's nuclear proliferation. US diplomats had many more tools at their disposal to allay Israeli fears that went unused.

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Currently, US policy makers, in consensus with global partners France, Germany, and the United Kingdom, have condemned Iran's nuclear proliferation efforts and called for international action.

The latest collaboration produced a joint statement encouraging Iran to stop its nuclear proliferation and open all facilities to IAEA inspection. While there was no automatic trigger for the IAEA to alert the UN Security Council if Iran failed to comply, the diplomatic pressure exerted through the regime was a good start. Coordinating activities between the IAEA and the UN Security Council is the best remedy to stop nuclear expansion.

As the global hegemon, the next decision point for US policy makers is balancing the weight of nonproliferation system management wisely against valuable alliance considerations. Decision makers should make every attempt to work within the confines of current global constructs for stability. If this means taking diplomatic and economic actions against proliferators or pushing Israel to abandon the Begin Doctrine, then quick decisive action through IAEA or UN auspices with full United States backing are the best options. US leaders must weigh the potential misperception between slow, steady pressure to reverse proliferation, and Israel's view of state survival. If US policy makers fail to take decisive action, Israeli decision makers may once again take preventive military action.

The second policy recommendation is to reinforce that a one-size-fits-all, precision-strike course of action will not guarantee good results. However, if US decision makers see the need to explore the preventive strike option—such as on Iran or the DPRK—the factors covered in this study warrant consideration. The US military is the best in the world at global precision targeting on demand. Nevertheless, striking a target, regardless of the level of damage inflicted, does not alter the

motivating factors behind its existence. Before, choosing a military option, leaders should confirm that all other options are exhausted and remain ineffective. Along with the initial strike, military planners should plan contingency follow-on strikes and outline triggers for when to launch these strikes. The strike on Osiraq proved deadly, but did not prevent Saddam Hussein's Iraq from rebuilding with vigor after the shock of the first strike subsided. Diplomats should arrange to coordinate incentives for stopping proliferation in conjunction with follow-on strike actions. These incentives may reduce the radical tendencies of a nuclear proliferator when leaders see the benefits of not going nuclear.

Finally, the United States should continue pressuring Iran via the IAEA and UN, continue working in consensus with global partners, and pay close attention for Israeli signs of independent military action. The Osiraq attack is the benchmark for military counterproliferation actions. The world will judge the success of future strikes in comparison to the Israeli military action of 1981. However, a better standard of success should be the dedication a nation devotes to nonproliferation via diplomatic means.

REFERENCES

- Albright, David, and Mark Hibbs. "Iraq's Nuclear Hide-and-Seek." *Bulletin of the Atomic Scientists* 47, no. 7 (Fall 1991).
- Bishara, Ghassan. "The Political Repercussions of the Israeli Raid on the Iraqi Nuclear Reactor." *Journal of Palestine Studies* 11, no. 3 (March 1982).
- Brownstein, Lewis. "Decision Making in Israeli Foreign Policy: An Unplanned Process." *Political Science Quarterly* 92, no. 2 (Summer 1977): 259-79.
- Burke, Jason. *Al-Qaeda : Casting the Shadow of Terror*. London: I. B. Tauris, 2003.

Ford—Israel's Attack on Osiraq

Cohen, Avner. "The Lessons of Osirak and the American Counterproliferation Debate." In *International Perspectives on Counterproliferation*, edited by Mitchell Reiss and Harald Muller, 73-102. Washington D.C.: Woodrow Wilson Center for International Studies, 1995.

D'Amato, Anthony. "Israel's Air Strike against the Osiraq Reactor: A Retrospective." *International and Comparative Law Journal* 10, no. 259 (Dec 1996).

Dunn, Lewis A, Peter R. Lavoy, and Scott D. Sagan. "Conclusions." In *Planning the Unthinkable*, edited by Peter R. Lavoy, Scott D. Sagan and James J. Wirtz. Ithaca: Cornell University Press, 2000.

Feldman, Shai. "The Bombing of Osiraq Revisited." *International Security* 7, no. 2 (September 1982).

———. *Israeli Nuclear Deterrence : A Strategy for the 1980s*. New York: Columbia University Press, 1982.

Fischer, David. *History of the International Atomic Energy Agency: The First Forty Years*. Vienna: The Agency, 1997.

Friedlander, Melvin A. *Sadat and Begin : The Domestic Politics of Peacemaking*. Boulder, Colo.: Westview Press, 1983.

Hamzah, Khidhir Abd al-Abb as, and Jeff Stein. *Saddam's Bombmaker : The Terrifying inside Story of the Iraqi Nuclear and Biological Weapons Agenda*. New York: Scribner, 2000.

Inbar, Efraim. "Israeli National Security, 1973-96." *The Annals of the American Academy of Political and Social Science* 555, no. 1 (January 1998): 62-81.

"Interagency Intelligence Assessment; Implications of Israeli Attack on Iraq." In *Declassified Government Intelligence Assessment via internet* <http://www.foia.cia.gov/>, edited by Central Intelligence Agency, 9. Washington D.C.: CIA, 1981. [Last accessed 21 July 2004]

Israel Weighs Strike on Iran (26 September 2003) [Internet]. JANE'S INTELLIGENCE DIGEST, 2003 [cited 15 April 2004]. Available from <http://80-www4.janes.com.libproxy.nps.navy.mil/>. [Last accessed 15 April 2004]

Kaarbo, Juliet. "Power and Influence in Foreign Policy Decision Making: The Role of Junior Coalition Partners in German and Israeli Foreign Policy." *International Studies Quarterly* 40, no. 4 (Dec 1996): 501-30.

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Lavoy, Peter R., Scott Douglas Sagan, and James J. Wirtz. *Planning the Unthinkable : How New Powers Will Use Nuclear, Biological, and Chemical Weapons*, Cornell Studies in Security Affairs. Ithaca, NY: Cornell University Press, 2000.

Lockman, Zachary. "Israel at a Turning Point." *MERIP Reports*, no. 92 (Winter 1980): 3-6.

McKinnon, Dan. *Bullseye One Reactor*. Shrewsbury: Airlife, 1988.

Morgan, Patrick M. *Deterrence Now*. Cambridge, UK ; New York: Cambridge University Press, 2003.

Nakdimon, Shelomoh. *First Strike: The Exclusive Story of How Israel Foiled Iraq's Attempt to Get the Bomb*. New York: Summit Books, 1987.

"Nuclear Weapons." In *Strategic Assessment: Engaging Power for Peace*. Washington, D.C.: National Defense University, March 1998.

"Osiraq and Beyond." *Air Force Magazine*, August 2002.

Perlmutter, Amos. *The Life and Times of Menachem Begin*. 1st ed. Garden City, N.Y.: Doubleday, 1987.

Perlmutter, Amos, Michael I. Handel, and Uri Bar-Joseph. *Two Minutes over Baghdad*. 2nd ed. London; Portland, OR: Frank Cass, 2003.

Vego, Milan N. *Operational Warfare*. Rhode Island: Naval War College, 2000.

Wilson, Heather. "Missed Opportunities: Washington Politics and Nuclear Proliferation." *The National Interest* Winter 1993/94 (December 1993).

Ya'ari, Ehud. "Hi Eastward." *Monitin* September 1985, 25-27.

NOTES

¹Personal interview, 5 Aug 2004, with retired IAF Colonel Dov 'Doobi' Yoffe at his home in Israel after viewing the Heads Up Display (HUD) video of the 7 June 1981 strike. The video was a compilation of all F-16 aircraft that participated in the raid. It included take-off, ingress, pre-strike maneuvering, footage of the attack, post-strike defensive maneuvering, and egress back to Israel. Doobi whistled to relax, while others talked to themselves or verbally rehearsed critical portions of the attack.

²Quoted in Avner Cohen, "The Lessons of Osirak and the American Counterproliferation Debate," in *International Perspectives on Counterproliferation*, ed. Mitchell Reiss and Harald Muller (Washington D.C.: Woodrow Wilson Center for International Studies, 1995), 85.

³*Israel Weighs Strike on Iran* (26 September 2003) [Internet] (*Jane's Intelligence Digest*, 2003 [cited 15 April 2004]); available from <http://80-www4.janes.com.libproxy.nps.navy.mil/>.

⁴"Interagency Intelligence Assessment; Implications of Israeli Attack on Iraq," in *Declassified Government Intelligence Assessment via internet* <http://www.foia.cia.gov/>, ed. Central Intelligence Agency (Washington D.C.: CIA, 1981), 1.

⁵Amos Perlmutter, Michael I. Handel, and Uri Bar-Joseph, *Two Minutes over Baghdad*, 2nd ed. (London; Portland, OR: Frank Cass, 2003), xl.

⁶Efraim Inbar, "Israeli National Security, 1973-96," *The Annals of the American Academy of Political and Social Science* 555, no. 1 (January 1998): 63.

⁷*Ibid.*: 64.

⁸Efraim Inbar indicates a similar but fundamentally different set of strategic elements. However, deterrence is at the heart of both and drives most other parts of Israel's Defense Principles. The Begin Doctrine is meant to deter Israel's enemies. However, it also forces Israel to remain prepared for any regional nuclear threat and speaks to Israel's willingness to act autonomously if necessary.

⁹*Ibid.*: 74.

¹⁰Inbar, "Israeli National Security, 1973-96," 63.

¹¹Shelomoh Nakdimon, *First Strike: The Exclusive Story of How Israel Foiled Iraq's Attempt to Get the Bomb* (New York: Summit Books, 1987), 273.

¹²*Ibid.*, 148.

¹³*Ibid.*, 58.

¹⁴*Ibid.*, 54.

¹⁵From: *1998 Strategic Assessment: Engaging Power for Peace*, Ch. 12 "Nuclear Weapons", National Defense University, Washington, D.C., March 1998.

¹⁶See Nakdimon pages 79 and 97 for these two quotations. There are multiple references inferring Iraq's intent to remain at war with Israel and the Iraqi government's stated intent of removing the Zionist entity from the

Palestinian land. Nakdimon's most telling account of these facts are from a Kuwaiti newspaper, the *a Siasia* on 24 Mar 1978 [see 89-90].

¹⁷Nakdimon, *First Strike*, 59.

¹⁸*Ibid.*, 156.

¹⁹There are four books in English on this subject. *First Strike*, *Two Minutes over Baghdad*, *Bullseye One Reactor*, and *Raid on the Sun*. Each one has strengths and weaknesses the others do not. By far the best work on the overt, covert, and diplomatic work done before the strike is Shlomo Nakdimon's *First Strike*. This book is a translated version from the original in Hebrew, *Tammuz in Flames*. A newer version, in Hebrew, is in print. The new version does not use fictitious names and elaborates on details the first could not. It is not currently in English, so it will not be included. This section will also not introduce the varied conspiracy theories that follow a subject such as this. Instead, it will focus on known quantities/actions to determine success or failure of those actions.

²⁰Very similar to the way this study is presented. The author went to Israel and accomplished interviews and this study presents new information received in Israel, but while spreading the new information, the study is also an academic route to present information for Israel.

²¹From: Nakdimon, *First Strike*, 63,79,114,115,115,125,126,131,132,133, and 147.

²²From: Nakdimon, *First Strike*, 101,120,122,123,137, and 181.

²³From: Nakdimon, *First Strike*, 56,63,66,75,83,88,96,99,138,144,152,174, 180.

²⁴From: Nakdimon, *First Strike*, 59,73,75,115,125,126,131,135,147,154, 174,175,186.

²⁵Nakdimon, *First Strike*, 160.

²⁶Jason Burke, *Al-Qaeda : Casting the Shadow of Terror* (London: I. B. Tauris, 2003), 54.

²⁷Lewis Brownstein, "Decision Making in Israeli Foreign Policy: An Unplanned Process," *Political Science Quarterly* 92, no. 2 (Summer 1977): 260.

²⁸*Ibid.*: 267.

²⁹Juliet Kaarbo, "Power and Influence in Foreign Policy Decision Making: The Role of Junior Coalition Partners in German and Israeli Foreign Policy," *International Studies Quarterly* 40, no. 4 (Dec 1996): 503.

³⁰Zachary Lockman, "Israel at a Turning Point," *MERIP Reports*, no. 92 (Winter 1980): 3.

³¹Brownstein, "Decision Making in Israeli Foreign Policy: An Unplanned Process," 275.

³²Melvin A. Friedlander, *Sadat and Begin : The Domestic Politics of Peacemaking* (Boulder, Colo.: Westview Press, 1983), 310.

³³Kaarbo, "Power and Influence in Foreign Policy Decision Making," 526.

³⁴Lockman, "Israel at a Turning Point," 4.

³⁵*Ibid.*: 6.

³⁶Nakdimon, *First Strike*, 82.

³⁷Dan McKinnon, *Bullseye One Reactor* (Shrewsbury: Airline, 1988), 88.

³⁸Anthony D'Amato, "Israel's Air Strike against the Osiraq Reactor: A Retrospective," *International and Comparative Law Journal* 10, no. 259 (Dec 1996): 261.

³⁹*Ibid.*

⁴⁰*Ibid.*: 262.

⁴¹Personal Interview with Retired IAF Chief of Staff, General David Ivry, 1 August 2004.

⁴²Personal Interview with Retired General Avraham Barber, 1 August 2004. General Barber flew the F-4 and helped verify the F-4's inability to fly the long route. It would take a refueling over hostile territory to stretch the F-4's range. The risk increased incrementally with additional aircraft and the necessity of these aircraft to refuel.

⁴³Personal Interview with Retired IAF Chief of Staff, David Ivry, 1 August 2004.

⁴⁴Perlmutter, Handel, and Bar-Joseph, *Two Minutes over Baghdad*, 86.

⁴⁵*Ibid.*

⁴⁶Second and Third Generation fighter aircraft exhibit more advanced avionics, engines, and weapons respectively. An example of first generation jet fighters is the F-86/F-100. Second generation: MiG-21/23/F-4 and Third Generation: F-15/16.

⁴⁷Lockheed Martin built the F-16s used in the raid on Osiraq for the Iranian Air Force. Ironically, Israel received these F-16 Falcons because the Iranian revolution dismembered the US-Iran Foreign Military Sales agreement.

⁴⁸External tanks attach under the wing and fuselage to extend the range of the aircraft. Once the pilot depletes the fuel in these tanks, they are jettisoned to decrease the overall drag of the aircraft. This effectively doubles the range of a fighter.

⁴⁹Personal Interview with Retired Colonel Dov “Doobi” and Michal Yoffe at their home in Israel, 5 August 2004. Early books on the subject claim Ilan Ramon, Zeev Raz, and Amir Nachumi were the only pilots who knew of the target. Ramon was responsible for the fuel planning and Raz and Nachumi were the flight leaders. However, Doobi Yoffe, whose mother was the stenographer for Menachem Begin also knew. And, Yoffe also confided in his wife, Michal. Michal Yoffe was Ezer Weizman’s daughter. After Ezer Weizman resigned from the cabinet, he was not privileged to the details of the strike’s timing. However, his daughter knew these details and could not share them with her father. She spent three tense days with her parents as Yoffe was flying the mission. Only after the mission did she tell her father. The newest book on the subject, *Raid on the Sun*, by Rodger Claire further expands on these facts.

⁵⁰Perlmutter, Handel, and Bar-Joseph, *Two Minutes over Baghdad*, 101.

⁵¹McKinnon, *Bullseye One Reactor*, 109.

⁵²Israeli F-16s used the Mark 84, 2,000-pound bomb, or Israeli equivalent, for the strike. The IAF started with USAF safety measures in altitude and timing and subsequently reduced these numbers as practice warranted. See McKinnon section 14 and 16.

⁵³McKinnon, *Bullseye One Reactor*, 115.

⁵⁴Personal interview with Retired IAF Chief of Staff, David Ivry, 1 August 2004. Other accounts of the strike do not note this fact. Other works describing the strike match most other information Mr Ivry described during the interview. However, the external ECM (electronic countermeasures) carried by the last two-ship of Israeli F-15s coincide with other details recorded by Iraqis during the strike. In *Saddam's Bombmaker*, Khidhir Hamza, noted severe electronic interference moments prior to the Israeli strike. For the most technical account of the strike read McKinnon’s work, *Bullseye One Reactor*.

⁵⁵Perlmutter, Handel, and Bar-Joseph, *Two Minutes over Baghdad*, 125.

⁵⁶After: “Osiraq and Beyond,” *Air Force Magazine*, August 2002.

⁵⁷Personal Interview with Colonel Retired Dov “Doobi” Yoffe on 5 August 2004. Israel used the HUD film of number six, Col Iftach Spector, to verify Osiraq’s destruction. Spector was the only IAF pilot to miss the target. He misidentified the dome on his roll in to the target and subsequent maneuvering brought his aircraft perilously close to the dome

as the delayed fuses of the first four aircraft detonated. Fortunately, his aircraft filmed the explosion as he corrected his flight path. Although his bombs missed, he provided valuable information for Israel with his HUD film. The HUD film of number seven and eight reflect this damage also, but not as vividly as Spector's film.

⁵⁸Shai Feldman, *Israeli Nuclear Deterrence : A Strategy for the 1980s* (New York: Columbia University Press, 1982), 130.

⁵⁹McKinnon, *Bullseye One Reactor*, 190.

⁶⁰Feldman, *Israeli Nuclear Deterrence : A Strategy for the 1980s*, 126.

⁶¹Perlmutter, Handel, and Bar-Joseph, *Two Minutes over Baghdad*, 172.

⁶²Feldman, *Israeli Nuclear Deterrence : A Strategy for the 1980s*, 141.

⁶³Perlmutter, Handel, and Bar-Joseph, *Two Minutes over Baghdad*, 124-5.

⁶⁴Amos Perlmutter, *The Life and Times of Menachem Begin*, 1st ed. (Garden City, N.Y.: Doubleday, 1987), 361.

⁶⁵Perlmutter, Handel, and Bar-Joseph, *Two Minutes over Baghdad*, 125.

⁶⁶Personal Interview with Retired Colonel Doobi Yoffe and his wife, Michal, 5 August 2004. Michal Yoffe is Ezer Weizman's daughter. Most political accounts claim Ezer Weizman left his position in the Begin government over a budget dispute with the Prime Minister. Others guess that Weizman disagreed with Begin's handling of the Peace Accords with Egypt. However, this interview uncovered the real reason was a desire to be the next Prime Minister of Israel.

If Weizman left the government, perhaps he could induce a vote of no-confidence on the faltering Begin leadership. Begin was an astute politician and garnered support to counter the threat. Beyond the desire for power, Weizman believed Begin was too callous toward the peace process with Egypt. Early in the Camp David talks, Weizman convinced Moshe Dayan, frustrated at Egyptian hard-line bargaining, to stay the course of peace. In this manner, Weizman unlike Begin, embraced the chance for Israel to gain peace with Egypt above domestic political considerations.

⁶⁷Perlmutter, *The Life and Times of Menachem Begin*, 362-5.

⁶⁸*Ibid.*, 364.

⁶⁹*Ibid.*, 365.

⁷⁰Ehud Ya'ari, "Hi Eastward," *Monitin* September 1985, 27.

⁷¹Perlmutter, *The Life and Times of Menachem Begin*, 370.

⁷²Shai Feldman, "The Bombing of Osiraq Revisited," *International Security* 7, no. 2 (September 1982): 138.

⁷³*Ibid.*: 136.

⁷⁴David Fischer, *History of the International Atomic Energy Agency: The First Forty Years* (Vienna: The Agency, 1997), 432.

⁷⁵Ghassan Bishara, "The Political Repercussions of the Israeli Raid on the Iraqi Nuclear Reactor," *Journal of Palestine Studies* 11, no. 3 (March 1982): 68.

⁷⁶Feldman, "The Bombing of Osiraq Revisited," 129.

⁷⁷David Albright and Mark Hibbs, "Iraq's Nuclear Hide-and-Seek," *Bulletin of the Atomic Scientists* 47, no. 7 (Fall 1991): 18.

⁷⁸After: Section 12. "Nuclear Weapons," in *Strategic Assessment: Engaging Power for Peace* (Washington, D.C.: National Defense University, March 1998).

⁷⁹Khidhir Abd al-Abb as Hamzah and Jeff Stein, *Saddam's Bombmaker : The Terrifying inside Story of the Iraqi Nuclear and Biological Weapons Agenda* (New York: Scribner, 2000), 129.

⁸⁰Milan N. Vego, *Operational Warfare* (Rhode Island: Naval War College, 2000), 47.

⁸¹Feldman, "The Bombing of Osiraq Revisited," 125.

⁸²*Ibid.*: 117.

⁸³Hamzah and Stein, *Saddam's Bombmaker*, 133.

⁸⁴Perlmutter, Handel, and Bar-Joseph, *Two Minutes over Baghdad*, 142.

⁸⁵*Ibid.*, 144.

⁸⁶*Ibid.*, 169.

⁸⁷Feldman, "The Bombing of Osiraq Revisited," 138.

⁸⁸Lewis A Dunn, Peter R. Lavoy, and Scott D. Sagan, "Conclusions," in *Planning the Unthinkable*, ed. Peter R. Lavoy, Scott D. Sagan, and James J. Wirtz (Ithaca: Cornell University Press, 2000), 235.

⁸⁹Patrick M. Morgan, *Deterrence Now* (Cambridge, UK ; New York: Cambridge University Press, 2003), 267.

⁹⁰Hamzah and Stein, *Saddam's Bombmaker*, 334-5.

⁹¹Dunn, Lavoy, and Sagan, "Unthinkable," 254.

⁹²Morgan, *Deterrence Now*, 217.

⁹³Heather Wilson, "Missed Opportunities: Washington Politics and Nuclear Proliferation," *The National Interest* Winter 1993/94 (December 1993). Quoted from an Interview with Cohen.

⁹⁴Morgan, *Deterrence Now*, 115.

⁹⁵*Ibid.*, 146.

⁹⁶*Ibid.*, 147.

⁹⁷*Ibid.*, 165.

⁹⁸*Ibid.*, 276.

⁹⁹*Ibid.*, 223.

¹⁰⁰Peter R. Lavoy, Scott Douglas Sagan, and James J. Wirtz, *Planning the Unthinkable : How New Powers Will Use Nuclear, Biological, and Chemical Weapons*, *Cornell Studies in Security Affairs*. (Ithaca, NY: Cornell University Press, 2000), 257.