



Air Force and Navy aircraft crossed Qaddafi's "Line of Death" to strike the terrorist state of Libya.

El Dorado Canyon

By Walter J. Boyne



THE United States on April 14, 1986, launched Operation El Dorado Canyon, a controversial but highly successful mission that hit Col. Muammar Qaddafi squarely between the eyes. Working with carrier aircraft of the US Sixth Fleet, Air Force F-111s of the 48th Tactical Fighter Wing flew what turned out to be the longest fighter combat mission in history. The crushing strikes caused a remarkable

During El Dorado Canyon, KC-10s refueled KC-10s, which in turn refueled F-111s for the 6,400-mile round trip from the UK to Libya. Keith Ferris based this painting—called “The Lesson”—on eyewitness accounts from F-111 crews.



The April 1986 bombing of a Berlin discotheque frequented by American servicemen helped convince President Reagan that it was time for the US to take action against Libyan-sponsored terrorism.

reduction in Libyan-sponsored terrorist activity.

In the mid-1980s, the F-111s of the 48th TFW, stationed at RAF Lakenheath in Britain, formed a key element of NATO power. If war came, the Aardvark's long range and night, low-level bombing capability would have been vital in defeating a Soviet attack. To the south, in the Mediterranean, the Sixth Fleet engaged Soviet warships in a constant game of mutual surveillance and stayed in more or less permanent readiness for hostilities.

Fate would dictate that the 48th TFW and Sixth Fleet carriers would be teamed in a totally unexpected quarter against a very different kind of enemy. They would strike not in or around Europe but on the North African littoral. They would go into action not against Soviet conventional forces but against an Arab state bent on sponsoring deadly terrorist acts.

Western nations had long been alarmed by state-sponsored terrorism. The number of attacks had risen from about 300 in 1970 to more than 3,000 in 1985. In that 15-year period, a new intensity had come to characterize the attacks, which ranged from simple assaults to attacks with heavy casualties such as the Oct. 23, 1983, truck bombing of the Marine Barracks in Beirut.

Qaddafi, who seized power in a 1969 coup, had long been an American antagonist. Each year, Libya trained 8,000 terrorists, providing false pass-

ports, transport on Libyan airliners, and access to safe houses across Europe. Libyan support for terrorist operations exceeded all nations except Iran. It disbursed \$100 million to Palestinian terrorists eager to strike Israel.

“Heroic” Actions

Qaddafi joined forces with one of the most notorious terrorists of the time, Abu Nidal. In November 1985, Abu Nidal's operatives hijacked an EgyptAir transport; 60 passengers were killed, many in the rescue attempt staged by an Egyptian commando team. On Dec. 27, 1985, Abu Nidal terrorists launched simultaneous attacks on airports at Rome and Vienna; 20 passengers and four terrorists were killed in these events. Qaddafi publicly praised the terrorists, called them martyrs, and applauded what he described as “heroic” actions.

President Ronald Reagan at about this time gave his approval to National Security Decision Directive 207, setting forth a new US policy against terrorism. He had decided that the US needed to mount a military response to Qaddafi and his brethren, but first he wanted to obtain cooperation from the Western Allies and allow time for the removal of US citizens working in Libya.

Meantime, the Sixth Fleet, based in the Mediterranean Sea, began a series of maneuvers designed to keep pressure on Libya. Two and sometimes three aircraft carriers (*Saratoga*, *America*,

and *Coral Sea*) conducted “freedom of navigation” operations that would take US warships up to and then southward across a line at 32 degrees 30 minutes north latitude. This was Qaddafi's self-proclaimed “Line of Death.”

The Line of Death defined the northernmost edge of the Gulf of Sidra and demarcated it—in Qaddafi's mind, at least—from the rest of the Mediterranean. The Libyan leader had warned foreign vessels that the Gulf belonged to Libya and was not international waters. The message was that they entered at their own risk and were subject to attack by Libyan forces. Thus Qaddafi, by drawing the Line, unilaterally sought to exclude US ships and aircraft from a vast, 3,200-square-mile area of the Med which always had been considered international.

The skirmishing soon began. On March 24, 1986, Libyan air defense operators fired SA-5 missiles at two F-14s. The Tomcats had intercepted an intruding MiG-25 that came a bit too close to a battle group. The next day, a Navy A-7E aircraft struck the SAM site with AGM-88A HARM missiles. At least two of the five threatening Libyan naval attack vessels were also sunk.

Tension further increased on April 2, 1986, when a terrorist's bomb exploded on TWA Flight 840 flying above Greece. Four Americans were killed. Three days later, a bomb exploded in Berlin's La Belle Discotheque, a well-known after-hours hangout for US military personnel. Killed in the blast were two American servicemen, and 79 other Americans were injured. Three terrorist groups claimed responsibility for the bomb, but the United States and West Germany independently announced “incontrovertible” evidence that Libyans were responsible for the bombing.

It's Time

President Reagan decided that it was time for the US to act.

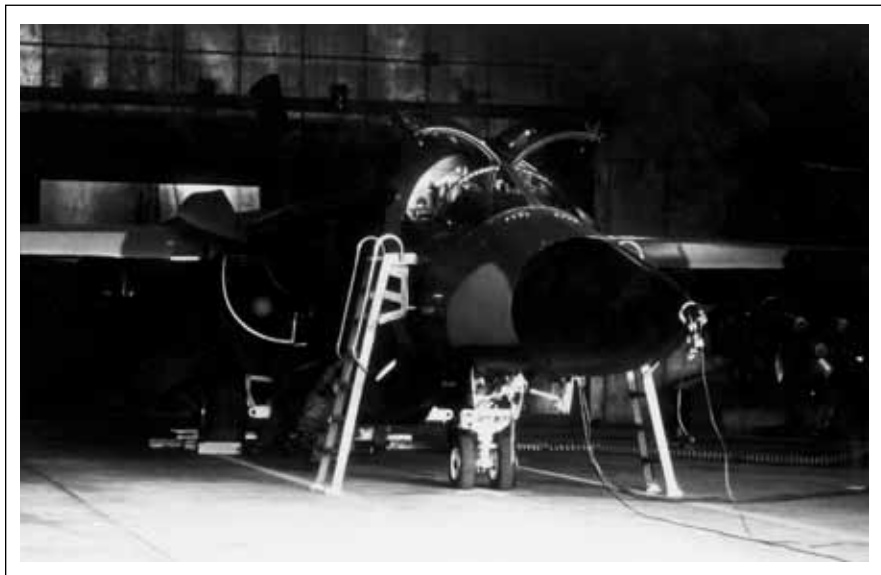
In the months leading up to the Berlin bombing, planners at USAF's 48th TFW had developed more than 30 plans for delivering a punitive blow against Libya. Most were variations on a theme—six or so Air Force F-111 fighter-bombers would fly through French airspace and strike selected military targets in Libya. Planners assumed that the attack would have the

benefit of surprise; the small number of F-111s made it probable that the bombers would be in and out before the Libyan defenses were alerted.

Later, when detailed speculation in the Western media lessened the probability of surprise, attack plans were changed to include support packages that would carry out suppression of enemy air defenses. These packages were to comprise Air Force EF-111 electronic warfare aircraft as well as Navy A-7 and EA-6B aircraft. This was the start of an Air Force–Navy liaison that would prove essential in the actual mission.

However, all the 48th's plans had been rendered obsolete by April 1986. Continuous media coverage, apparently fueled by leaks from very senior and knowledgeable sources in the White House, had rendered surprise almost impossible. Moreover, the US was having serious trouble with its Allies. Britain's Prime Minister Margaret Thatcher approved US use of British bases to launch the attack. However, Washington's other Allies lost their nerve. The fear of reprisals and loss of business caused France, Germany, Italy, and Spain to refuse to cooperate in a strike.

The faintheartedness of these countries forced the US to prepare a radically different attack plan. USAF F-111s would now navigate around France and Spain, thread the needle through the airspace over the narrow Strait of



USAF photo via Craig Brown

Inside a shelter at RAF Lakenheath, this F-111F, call sign Lujac 23, receives a thorough checkout. The Aardvark's long range and nighttime, low-level bombing capability made it a key element of NATO airpower in the mid-1980s.

Gibraltar, and then plunge on eastward over the Mediterranean until in a position to attack.

It would prove to be a grueling round-trip flight of 6,400 miles that spanned 13 hours, requiring eight to 12 in-flight refuelings for each aircraft. Inasmuch as a standard NATO F-111 sortie was about two hours, the El Dorado Canyon mission placed a tremendous strain on crews and complex avionic systems at the heart of the aircraft.

US authorities crafted a joint operation of the Air Force and Navy against five major Libyan targets.

Of these, two were in Benghazi: a terrorist training camp and the military airfield. The other three were in Tripoli: a terrorist naval training base; the former Wheelus AFB; and the Azziziyah Barracks compound, which housed the command center for Libyan intelligence and contained one of five residences that Qaddafi used.

Eighteen F-111s were assigned to strike the three Tripoli targets, while Navy aircraft were to hit the two Benghazi sites. Navy aircraft also were to provide air defense suppression for both phases of the operation. US authorities gave overall command to Vice Adm. Frank B. Kelso II, commander of the Sixth Fleet.

Enter the Air Force

The composition of the El Dorado Canyon force has stirred controversy. In his 1988 book, *Command of the Seas*, former Navy Secretary John F. Lehman Jr. said the entire raid could have been executed by aircraft from *America* and *Coral Sea*. This claim cropped up again in 1997; in a letter to *Foreign Affairs*, Marine Maj. Gen. John H. Admire, an operations planner in US European Command at the time, said, "Sufficient naval forces were available to execute the attacks." Both attributed USAF's participation to a bureaucratic need to placate the Air Force.

The fact of the matter, however, is the Air Force had long been preparing for such a raid. When Washington



F-14, A-7, and EA-6B poised on USS America's flight deck. Between America and USS Coral Sea, the Navy launched 14 A-6Es and six A-7Es for the attack, with F-14s for protection and six F/A-18Cs and an EA-6B for strike support.



F-111F Remit 31 receives a last check before takeoff from RAF Lakenheath. Eighteen Aardvarks were tasked to strike three targets in Tripoli. Remit 31 was among the F-111s that attacked Azziziyah Barracks.

decreed that there would be only one attack, it became absolutely necessary to mount a joint operation because only the inclusion of heavy USAF attack aircraft could provide the firepower needed to ensure that the operation would be more than a pinprick attack.

The Navy had only *America* and *Coral Sea* on station. According to Air Force officials involved in the plans, these two carriers did not have sufficient aircraft for effective attacks against all five targets in both Tripoli and Benghazi. At least one more carrier, and perhaps two, would have been required, said these officers.

The act of calling in a third or even a fourth carrier to handle both targets would have caused a delay and given away any remaining element of surprise. This fact was pointed out to the Chairman of the Joint Chiefs of Staff, Adm. William J. Crowe Jr. Crowe himself recognized that F-111s were needed if both Tripoli and Benghazi were to be struck at more or less the same time. They would also add an element of surprise and a new axis of attack.

For these reasons, the JCS Chairman recommended to Reagan and the National Security Council that the United States use both Air Force and Navy aircraft in the raids.

The F-111Fs of the 48th were special birds, equipped with two Pratt & Whitney TF-30 P-100 turbofan engines of 25,100 pounds of thrust each and

a highly classified AN/AVQ-26 Pave Tack bombing system. Pave Tack consisted of an infrared camera and laser designator. It enabled the F-111 crew to see the target in the dark or through light fog or dust obscurations (not heavy dust and smoke). When the target was seen, it was designated by the energy of a laser beam. The 2,000-pound GBU-10 Paveway II laser-guided bomb tracked the laser to the illuminated target. Pave Tack imparted to the F-111s a limited standoff capability, achieved by lobbing the bombs at the target. As events unfolded, the Pave

Tack equipment would be crucial to the mission's success.

On April 14, at 17:36 Greenwich Mean Time, 24 Aardvarks departed Lakenheath with the intent that six would return after the first refueling about 90 minutes out. Also launched were five EF-111 electronic warfare aircraft. This marked the start of the first US bomber attack from the UK since World War II. The tanker force was launched at roughly the same time as the F-111s, four of which joined up on their respective "mother tankers" in radio silence, flying such a tight formation that radar controllers would see only the tanker signatures on their screens. At the first refueling, six F-111Fs and one EF-111A broke off and returned to base. Beyond Lands End, UK, the aircraft would be beyond the control of any international authority, operating at 26,000 feet and speeds up to 450 knots.

To save time and ease navigation, tankers were to accompany the fighters to and from the target area. KC-10 tankers, called in from Barksdale AFB, La., March AFB, Calif., and Seymour Johnson AFB, N.C., were refueled in turn by KC-135s, assigned to the 300th Strategic Wing, RAF Mildenhall, and the 11th Strategic Group, RAF Fairford, UK.

Drastic Changes

What had been drafted as a small, top secret mission had changed dras-



With only the UK offering use of its bases, US aircraft faced a long flight to Libya. The round trip required eight to 12 in-flight refuelings for each airplane—this one, from Karma Flight, armed with 2,000-pound laser-guided bombs.

tically. The force now included 18 USAF strike aircraft and four EF-111F electronic warfare aircraft from the 42d Electronic Combat Squadron, RAF Upper Heyford, UK. The lead KC-10 controlled the F-111s.

The size of the attack force went against the judgment of the 48th's leadership, including that of its commander, Col. Sam W. Westbrook III. With the possibility of surprise gone, the 48th felt that the extra aircraft meant there would be too much time over target, particularly for the nine aircraft assigned to strike the Azziziyah Barracks. Libyan defenses, already on alert, would have time to concentrate on the later waves of attackers.

Secretary of Defense Caspar Weinberger, however, was an advocate of a larger strike, and he was supported in this by Gen. Charles A. Gabriel, Chief of Staff of the Air Force, Gen. Charles L. Donnelly Jr., commander of United States Air Forces in Europe, and Maj. Gen. David W. Forgan, Donnelly's operations deputy.

The three USAF officers believed the large force increased the possibility of doing substantial damage to the targets.

On the Navy side, the Sixth Fleet was to attack with the forces arrayed on two carriers. *Coral Sea* launched eight A-6E medium bombers for the attack and six F/A-18C Hornets for strike support. *America* launched six A-6Es for the attack and six A-7Es and an EA-6B for strike support. F-14s protected the fleet and aircraft.

A high alert status characterized Soviet vessels in the Mediterranean monitoring ship and aircraft movement. Libya's vast air defense system was sophisticated, and its operators were acutely aware that an attack was coming. In the wake of the raid, the US compared the Libyan network with target complexes in the Soviet Union and its satellites. Only three were found to have had stronger defenses than the Libyan cities.

The difficulties of the mission were great. Most of the crews had never seen combat. Most had never refueled from a KC-10, and none had done so at night in radio silence. The strike force did benefit from the presence of highly experienced flight leaders, many of them Vietnam combat veterans. They were flying the longest and most



Photo via Denis Giangreco

The Pavé Tack bombing system, with an infrared camera and laser designator, allowed the F-111 WSO to see the 500-pound bombs approaching the target, an IL-76 transport at the former Wheelus AB, Libya.

demanding combat mission in history against alerted defenses—and doing it in coordination with a naval force more than 3,000 miles distant.

Timing was absolutely critical, and the long route and multiple refuelings increased the danger of a disastrous error. The Air Force and Navy attacks had to be simultaneous to maximize any remaining element of surprise and to get strike aircraft in and out as quickly as possible.

Rules of Engagement

Mission difficulty was compounded by rigorous Rules of Engagement. These ROE stipulated that, before an attack could go forward, the target had to be identified through multiple sources and all mission-critical F-111 systems had to be operating well. Any critical system failure required an immediate abort, even if an F-111 was in the last seconds of its bomb run.

At about midnight GMT, six flights of three F-111Fs each bore down on Tripoli. Fatigue of the long mission was forgotten as the pilots monitored their terrain-following equipment. The weapon system officers prepared for the attack, checking the navigation, looking for targets and offset aiming points, and, most important of all, checking equipment status.

The first three attacking elements, code-named Remit, Elton, and Karma, were tasked to hit Qaddafi's headquarters at the Azziziyah Barracks. This

target included a command and control center but not the Libyan leader's nearby residence and the Bedouin-style tent he often used. Westbrook proved to be prescient in his belief that nine aircraft were too many to be put against the Azziziyah Barracks, as only two of the nine aircraft dropped their bombs. These, however, would prove to be tremendously important strikes.

One element, Jewel, struck the Sidi Balal terrorist training camp where there was a main complex, a secondary academy, a Palestinian training camp, and a maritime academy under construction. Jewel's attack was successful, taking out the area where naval commandos trained.

Two elements, Puffy and Lujac, were armed with Mk 82 Snakeye parachute-retarded 500-pound bombs, and they struck the Tripoli airport, destroying three Ilyushin IL-76 transports and damaging three others as well as destroying a Boeing 727 and a Fiat G. 222.

Flying in support of the F-111 attacks were EF-111As and Navy A-7s, A-6Es, and an EA-6B, using HARM and Shrike anti-radar missiles. Similar defense suppression support, including F/A-18s, was provided across the Gulf of Sidra, where Navy A-6E aircraft were to attack the Al Jumahiriya Barracks at Benghazi, and to the east, the Benina airfield. The Navy's Intruders destroyed four MiG-23s, two Fokker F-27s, and two Mil Mi-8 helicopters.

The Air Force F-111Fs would spend



Puffy and Lujac attack elements, armed with Mk 82 Snakeye parachute-retarded 500-pound bombs like these, struck the Tripoli airport. The operation led to F-111 changes that would make the aircraft invaluable in the Gulf War.

only 11 minutes in the target area, with what at first appeared to be mixed results. Anti-aircraft and SAM opposition from the very first confirmed that the Libyans were ready. News of the raid was broadcast while it was in progress. One aircraft, Karma 52, was lost, almost certainly due to a SAM, as it was reported to be on fire in flight. Capt. Fernando L. Ribas-Dominicci and Capt. Paul F. Lorence were killed. Only Ribas-Dominicci's body was recovered; his remains were returned to the US three years later.

Adrenaline Rush

As each F-111 aircraft exited the target area, they gave a coded transmission, with "Tranquil Tiger" indicating success and "Frostee Freezer" indicating that the target was not hit. Then the crews, flushed with adrenaline from the attack, faced a long flight home, with more in-flight refuelings, the knowledge that one aircraft was down, and the incredible realization that the raid's results were already being broadcast on Armed Forces Radio. The news included comments from Weinberger and Secretary of State George P. Shultz. One F-111F had to divert to Rota AB, Spain, because of an engine overheat. The mission crew was returned to Lakenheath within two hours.

Early and fragmentary USAF post-strike analysis raised some questions about the performance of the F-111s.

Even though all three targets had been successfully struck, only four of the 18 F-111s dropped successfully. Six were forced to abort due to aircraft difficulties or stringencies of the Rules of Engagement. Seven missed their targets and one was lost. There had been collateral damage, with one bomb landing near the French Embassy.

The combined Air Force-Navy raid resulted in 130 civilian casualties with 37 killed, including, it was claimed, the adopted daughter of Qaddafi.

Yet events were soon to prove that the raid had been a genuine success, and as time passed, its beneficial effects would be recognized. It quickly became obvious that Qaddafi, who had exultantly backed the bombing of others, was terribly shaken when the bombs fell near him. His house had been damaged and flying debris had reportedly injured his shoulder. He disappeared from the scene for 24 hours, inspiring some speculation that he had been killed. When he did reappear—on a television broadcast—he was obviously deeply disturbed, lacking his usual arrogance.

Libya protested but received only muted support from Arab nations. In

its comments, Moscow was curiously nonjudgmental and withheld a strong endorsement of Qaddafi. More importantly, the following months would see a dramatic decrease in the number of Libyan-sponsored, anti-American terrorist events. The Red Army Faction, one of the groups that had claimed responsibility for the La Belle disco bombing, reduced its activities. Other Libyan-sponsored groups followed suit.

Slight Praise

It became evident that the F-111s and the carrier attack aircraft, ably assisted by Air Force and Navy support units, had achieved a signal success. Ironically, that success was not to receive much formal recognition. There was slight praise for the aircrews. The Air Force declined a nomination for a Presidential Unit Citation, although the Navy awarded its forces a Meritorious Unit Citation. This situation, with an excellent description of the attack, is covered in Robert E. Venkus' book, *Raid on Qaddafi*.

Operation El Dorado Canyon was carried out in the finest tradition of the Air Force. Its crews and aircraft were pushed to the absolute limits of their capability. Yet they prevailed, destroying key targets and shocking Qaddafi as a raid on Benghazi alone would never have done. More important, the effect of El Dorado Canyon went far beyond Libya, registering with the entire terrorist world.

Moreover, the raid demonstrated that the United States had the capability, using fighters and large numbers of land-based tankers, to make precision strikes from land bases at very great distances.

Perhaps as important, F-111 problems surfaced during El Dorado Canyon and the Air Force set about fixing them. This was to pay great dividends five years later when, during Operation Desert Storm, the F-111F Pave Tack system flew more missions and destroyed more targets than any other aircraft in that war. ■

Walter J. Boyne, former director of the National Air and Space Museum in Washington, is a retired Air Force colonel and author. He has written more than 400 articles about aviation topics and 29 books, the most recent of which is Beyond the Horizons: The Lockheed Story. His most recent article for Air Force Magazine, "Stuart Symington," appeared in the February 1999 issue.