It was justifiably called "the airlift that saved Israel."

Nickel Grass

By Walter J. Boyne

USAF's Operation Nickel Grass airlifted war materiel to Israel during the 1973 Mideast war. As part of the commemoration of the airlift's 25th anniversary, aviation artist Gil Cohen recently completed this painting, depicting a typical scene at the Lod/ Ben-Gurion air complex near Tel Aviv, Israel. The painting hangs at the Air Mobility Command Museum at Dover AFB, Del.

New to USAF's fleet, the C-5 proved itself in Nickel Grass, hauling in oversize items like tractors, helicopters, and M-60 tanks (above). The first C-5 airlifter to land at Lod delivered 97 tons of 105 mm howitzer shells.

One of the most critical but least celebrated airlifts in history unfolded over a desperate 32 days in the fall of 1973. An armada of Military Airlift Command aircraft carried thousands of tons of materiel over vast distances into the midst of the most ferocious fighting the Middle East had ever witnessed—the 1973 Arab–Israeli War. MAC airlifters—T-tailed C-141s and C-5As—went in harm's way, vulnerable to attack from fighters, as they carved a demanding track across the Mediterranean, and to missiles and sabotage, as they were off-loading in Israel.

Though not as famous as the 1948–49 Berlin Airlift or as massive as the 1990–91 Desert Storm airlift, this 1973 operation was a watershed event. Code-named "Nickel Grass," it restored a balance of power and helped Israel survive a coordinated, life-threatening Soviet–backed assault from Egypt and Syria. It proved the Air Force concept of global mobility based on jet-powered transport aircraft. The airlift also transformed the image of the C-5 from that of expensive lemon to symbol of US might.

A quarter of a century ago, in summer and fall 1973, the Mideast seethed with tensions. Six years earlier, in June 1967, Israeli forces conquered vast swaths of land controlled by Egypt, Syria, and Jordan. Cairo and Damascus failed over the years to persuade or force Israel to relinquish its grip on the land and, by 1973, the stalemate had become intolerable. Egypt's Anwar Sadat and Syria's Hafez al-Assad meticulously planned their 1973 offensive, one they hoped would reverse Israeli gains of the earlier war and put an end to Arab humiliation. The war was set to begin on the holiest of Jewish religious days, Yom Kippur.

Trapped by Complacency

The Arab states had trained well and Moscow had supplied equipment on a colossal scale, including 600 advanced surface-to-air missiles, 300 MiG-21 fighters, 1,200 tanks, and hundreds of thousands of tons of consumable war materiel. On paper, the Arabs held a huge advantage in troops, tanks, artillery, and aircraft. This was offset, in Israeli minds, by the Jewish state's superior technology, advanced mobilization capability, and interior lines of communication. Despite unmistakable signs of increasing Arab military capability, Israeli leaders remained unworried, even complacent, confident in Israel's ability to repel any attack.

The Israeli government became unequivocally convinced of impending war just hours before the Arab nations attacked at 2:05 p.m. local time, Oct. 6. Prime Minister Golda Meir, despite her immense popularity, refused to use those precious hours to carry out a pre-emptive attack; she was concerned that the US might withhold critical aid shipments if Washington perceived Israel to be the aggressor.

On the southern front, the onslaught began with a 2,000-cannon barrage across the Suez Canal, the 1967 cease-fire line. Egyptian assault forces swept across the waterway and plunged deep into Israeli–held territory. At the same time, crack Syrian units launched a potent offensive in the Golan Heights. The Arab forces fought with efficiency and cohesion, rolling over or past shocked Israeli defenders. Arab air forces attacked Israeli airfields, radar installations, and missile sites.

Day 4 of the war found Israel's once-confident military suffering from the effects of the bloodiest mauling of its short, remarkably successful existence. Egypt had taken the famous Bar Lev line, a series of about 30 sand, steel, and concrete bunkers strung across the Sinai to slow an attack until Israeli armor could be brought into play. Egyptian commandos ranged behind Israeli lines, causing havoc. In the north, things looked equally bad. The Syrian attack had not been halted until Oct. 10.

Grievously heavy on both sides were the losses in armored vehicles and combat aircraft. Israeli airpower was hard hit by a combination of mobile SA-6 and the man-portable SA-7 air-defense missiles expertly wielded by the Arabs. The attacking forces were also plentifully supplied with radar-controlled ZSU-23-4 anti-aircraft guns. Israeli estimates of consumption of ammunition and fuel were seen to be totally inadequate. However, it was the high casualty rate that stunned Israel, shocking not only Meir but also the legendary Gen. Moshe Dayan, minister of defense.

The shock was accompanied by sheer disbelief at America's failure to comprehend that the situation was critical. Voracious consumption of ammunition and huge losses in tanks and aircraft brought Israel to the brink of defeat, forcing the Israelis to think the formerly unthinkable as they pondered their options.

Half a world away, the United States was in a funk, unable or unwilling to act decisively. Washington was in the throes of not only post–Vietnam moralizing on Capitol Hill but also

the agony of Watergate, both of which impaired the leadership of President Richard M. Nixon. Four days into the war, Washington was blindsided again by another political disaster—the forced resignation of Vice President Spiro T. Agnew.

Not surprisingly, the initial US reaction to the invasion was one of confusion and contradiction. Leaders tried to strike a balance of the traditional US support of Israel with the need to maintain a still-tenuous superpower détente with the Soviet Union and a desire to avoid a threatened Arab embargo of oil shipments to the West.

Shifting Scenarios

The many shifts in US military planning to aid Israel are well-documented, notably in *Flight to Israel,* Kenneth L. Patchin's official MAC history of Operation Nickel Grass. Nixon, in response to a personal plea from Meir, had made the crucial decision Oct. 9 to re-supply Israel. However, four days would pass before the executive office could make a final decision on how the re-supply would be executed.

Initially, planners proposed that Israel be given the responsibility for carrying out the entire airlift. (Israel did use eight of its El Al commercial airliners to carry 5,500 tons of materiel from the US to Israel.) Israel attempted to elicit interest from US commercial carriers, but they refused to enlist in the effort, concerned as they were about the adverse effects Arab reaction would have upon their businesses. MAC's inquiries with commercial carriers received the same negative response. Then, it was suggested that MAC assist the Israeli flag carrier by flying the material to Lajes, the base on the Portuguese Azores islands in the Atlantic, where it could be picked up by Israeli transports.

The US dithered in this fashion for four days. Then, on Oct. 12, Nixon personally decided that MAC would handle the entire airlift. Tel Aviv's Lod/Ben-Gurion air complex would be the off-load point.

"Send everything that can fly," he ordered.

USAF had been preparing right along to take on the challenge. Gen. George S. Brown, USAF Chief of Staff, telephoned Gen. Paul K. Carlton, MAC commander, to begin loading MAC aircraft with materiel but to hold them within the US pending release of a formal order sending them onward. Carlton put his commanders on alert and contacted the heads of other involved commands, including Gen. Jack J. Catton of Air Force Logistics Command. AFLC accorded the same high priority to Nickel Grass, and the results showed immediately. More than 20 sites in the United States were designated to be cargo pick-up points where the US military would assemble materiel for shipment to Israel. Equipment, some directly from war-reserve stocks, began pouring into these sites.

Less than nine hours after Nixon's decision, MAC had C-141s and C-5s ready to depart. There would be some initial delays, and they would encounter some difficulties en route, but they would be the first of a flood of aircraft into Israel.

The complex nature of Nickel Grass required a flexible chain of command. Within MAC, 21st Air Force, commanded by Maj. Gen. Lester T. Kearney Jr., was designated as the controlling Air Force. The vice commander of 21st, Brig. Gen. Kelton M. Farris, was named MAC mission commander. The prime airlift director was Col. Edward J. Nash.

We'll Hold Your Coat

The threat of an oil embargo frightened US allies. With a single exception, they all denied landing and overflight rights to the emergency MAC flights. The exception was Portugal, which, after hard bargaining, essentially agreed to look the other way as traffic mushroomed at Lajes Field. Daily departure flights grew from one to 40 over a few days. This was a crucial agreement for MAC, which could not have conducted the airlift the way it did without staging through Lajes.

When Nixon flashed the decision Oct. 12, top American officials instantly applied pressure for immediate results. MAC's complex machinery sprang into action, but it took some hours to establish a steady, regulated flow of aircraft and crews. Initial flights were delayed because of high winds at Lajes, generating White House fury that supplies had not magically reached Israel.

Adm. Thomas H. Moorer, Chairman of the Joint Chiefs of Staff, called Carlton about this, saying, "We'll have to get them moving, or we'll lose our jobs."

Carlton knew the airlift business. He knew that he had an adequate number of aircraft, crews, and required equipment. The fleet consisted of 268 C-141s and 77 C-5As, and Carlton knew that he could sustain a steady flow of three C-141s every two hours and four C-5s every four hours—indefinitely. He also knew that MAC could orchestrate the operation, establishing a rational flow of aircraft matching the cargo to be carried with off-loading equipment

The Air Force initially set the daily flow of airlifters at 12 C-141s and four C-5s, then raised it to 17 and six, respectively, until Oct. 30. The pace was rough on aircrews and support personnel alike.

at the destination. In his plan, MAC would essentially become a conduit through which materiel would flow in a well-adjusted stream.

At first, however, he could not convey either his concept or his confidence to the White House, State Department, or Pentagon.

Carlton had already begun to expedite things, taking extraordinary actions in the interest of saving time. These steps included waiving crew rest requirements, weight limitations, daily utilization restrictions, and routine maintenance demands. He had to fight a continuing change of orders streaming out of the White House and State and Defense departments. There was continuing pressure to enlist the help of commercial airlines, despite their universal reluctance. At one point, late in the game, officials threatened to remove MAC entirely from the operation.

Even so, Carlton was confident he could establish a flow that not only would let MAC handle the initial requirement of 4,000 tons of materiel but also continue to handle all of MAC's other assignments. He asked for patience, stating that "once this flow starts, it [the materiel] is going to come like a bushel basket of oranges just being dumped."

The average distance from US departure points to Lajes was 3,297 miles. It was another 3,163 miles from Lajes to Lod/Ben-Gurion. The route varied from eastern departure points (McGuire AFB, N.J.; Dover AFB, Del.; and Charleston AFB, S.C.) to Lajes, but from Lajes onward it was precise. Aircraft flew to Gibraltar at the southern tip of Spain and then followed a narrow path over the Mediterranean to Tel Aviv.

The route was deliberately placed along the center of the Mediterranean Sea on the Flight Information Region boundary line dividing the airspace of the hostile African states to the south and that of the "friendly" European states to the north.

Fighters All the Way

The threat of Arab interception was real, and the US Navy's Sixth Fleet acted as protector until the transports came within about 200 miles of Israel. There Israeli air force fighters took over. Although threats were made by radio, and several unidentified fighters were seen, no overt hostile action was taken.

Neither Lajes nor Lod possessed adequate aerial port facilities. Carlton called for establishment of Airlift Control Elements at both places, accurately estimating the number of personnel and the equipment that each would require. (More than 1,300 people would work at Lajes, seriously taxing all the facilities.) Other ALCEs were established at points within the US where aerial port facilities were not sufficient to handle the rush.

The initial missions to Israel were delayed as a result of 50-knot crosswinds at Lajes. Scheduled to be the first aircraft at Lod was a C-5 carrying the ALCE team, headed by Col. Donald R. Strobaugh. However, it encountered engine trouble and had to return to Lajes, where Strobaugh and his team transferred to a C-141.

The first C-5 (Tail No. 00461) to land at Lod touched down at 22:01 Zulu. It carried 97 tons of 105 mm howitzer shells, and it arrived at a time when Israeli forces were down to their last supplies of ammunition. Another 829 tons would be delivered in the next 24 hours. Even as Israeli workers unloaded those first cargo airplanes, huge formations of Israeli and Egyptian armor, maneuvering just 100 miles to the southwest, were locked in a desperate tank battle that would prove to be the largest clash of armor since the World War II Battle of Kursk.

Carlton was only too aware of the C-5's vulnerability to ground attack. Whenever possible, the Air Force would have only a single C-5 on the ground at any one time.

The first C-141 (Tail No. 60177) to arrive at Lod landed at 23:16 Zulu. The aircraft carried more ammunition but, more importantly, it delivered Strobaugh and his ALCE crew. The group ultimately numbered 55, all of whom worked 12 hours a day, seven days a week. They were given three 40K loaders as well as locally improvised unloading gear.

The arriving MAC airplanes were greeted ecstatically by the Israelis. The crews received red-carpet treatment. Israel put in place a system to expedite cargo handling; materiel unloaded from the transports usually were at the front in Syria in about three hours and in the Sinai in less than 10 hours.

The original 4,000-ton airlift requirement grew daily. After the first day, USAF set the daily flow requirement at four C-5s and 12 C-141s. After Oct. 21, it raised the aircraft flow level to six C-5s and 17 C-141s and maintained it there until Oct. 30, when the demand began to drop.

The continuous flow of aircraft on the long flights was tough on the aircrews, but MAC was judicious in its positioning of relief crews for the C-141 and using augmented crews on the C-5. A special pool of navigators was created for the

Supplies airlifted into Lod kept aircraft like this Israeli air force A-4 flying. From Nickel Grass USAF learned the importance of an overseas staging base such as Lajes and the requirement for aerial refueling of airlifters.

vital but tedious task of navigating the Mediterranean.

To the Offensive

Because it eliminated the need to husband ammunition and other consumable items, the continuous flood of US war materiel enabled Israeli forces to go on the offensive in the latter stages of the war. In the north, Israel's ground forces recovered all territory that had been lost and began to march on Damascus. In the Sinai, tank forces led by Maj. Gen. Ariel Sharon smashed back across the Suez, encircled the Egyptian Third Army on the western side of the canal, and threatened Ismailia, Suez City, and even Cairo itself.

Egypt and Syria, which had previously rejected the idea of a negotiated settlement, now felt compelled on Oct. 22 to agree to the arrangement hammered out by Washington and Moscow with the goal of preventing the total destruction of the trapped Egyptian army. Israel was reluctant to comply immediately, wishing to gain as much as possible before a cease-fire.

The Soviet Union, faced with Israel's continuing offensive, raised the stakes. Moscow declared to the United States that, if the US could not bring Israel to heel, it would take unilateral action to dictate a settlement. On Oct. 24, the United States, in order to intensify the image of risk in Soviet minds and keep Soviet forces out of the crisis, responded by taking its armed forces to a worldwide DEFCON III alert, implying readiness for nuclear operations, if necessary.

Fortunately, after several abortive efforts, an effective cease-fire finally took hold Oct. 28.

Israel suffered 10,800 killed and wounded—a traumatic loss for a nation of some 3 million persons—plus 100 aircraft and 800 tanks. The Arab nations suffered 17,000 killed or wounded and 8,000 prisoners, and lost 500 aircraft and 1,800 tanks.

The airlift officially ended Nov. 14. By then, the Air Force had delivered 22,395 tons of cargo—145 missions by C-5 Galaxy and 422 missions by C-141 Starlifter. The C-5s delivered about 48 percent of the tonnage but consumed 24 percent less fuel than the C-141s. Included in the gross cargo tonnage was a total of 2,264.5 tons of "outsize" materiel, equipment that could be delivered only by a C-5. Among these items were M-60 tanks, 155 mm howitzers, ground radar systems, mobile tractor units, CH-53 helicopters, and A-4E components.

Wide World Photo

The largest tank battle since World War II took place during the 1973 Arab–Israeli War. Airlifters not only resupplied the Israelis with M-60s but also brought in new anti-tank weapons and electronic countermeasures equipment.

The airlift had been a key to the victory. It had not only brought about the timely resupply of the flagging Israeli force but also provided a series of deadly new weapons put to good use in the latter part of the war. These included Maverick and TOW anti-tank weapons and extensive new electronic countermeasures equipment that warded off successful attacks on Israeli fighters. Reflecting on the operation's vital contribution to the war effort, *Reader's Digest* would call it "The Airlift That Saved Israel."

Both US transport types distinguished themselves by performing reliably and economically. The C-5A had an 81 percent reliability while the C-141 registered a 93 percent reliability. No accidents occurred. The abort rate of all planned flights came in under 2 percent.

The airlift taught the Air Force many lessons, large and small. One was that Lajes was a godsend—one that the US best not take for granted in a future emergency. The Air Force established an immediate requirement for aerial refueling to become standard practice in MAC so that its airlifters could operate without forward bases, if necessary. Another lesson was that commercial airlines, on their own, could not be expected to volunteer their services and aircraft. This meant that access to commercial lift in the future would have to be met by activating the Civil Reserve Air Fleet, as in fact it was during the Gulf War. Nickel Grass also led to the consolidation of all airlift aircraft under Military Airlift Command and its designation as a specified command Feb. 1, 1977.

Finally, the C-5 proved to be the finest military airlift aircraft in history, not the expensive military mistake as it had been portrayed in the media. Its ability to carry huge amounts of cargo economically, carry outsize pieces of equipment, and refuel in flight fully justified the expense of the program.

"For generations to come," said Golda Meir not long after the war's end, "all will be told of the miracle of the immense planes from the United States bringing in the material that meant life for our people." ▪

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