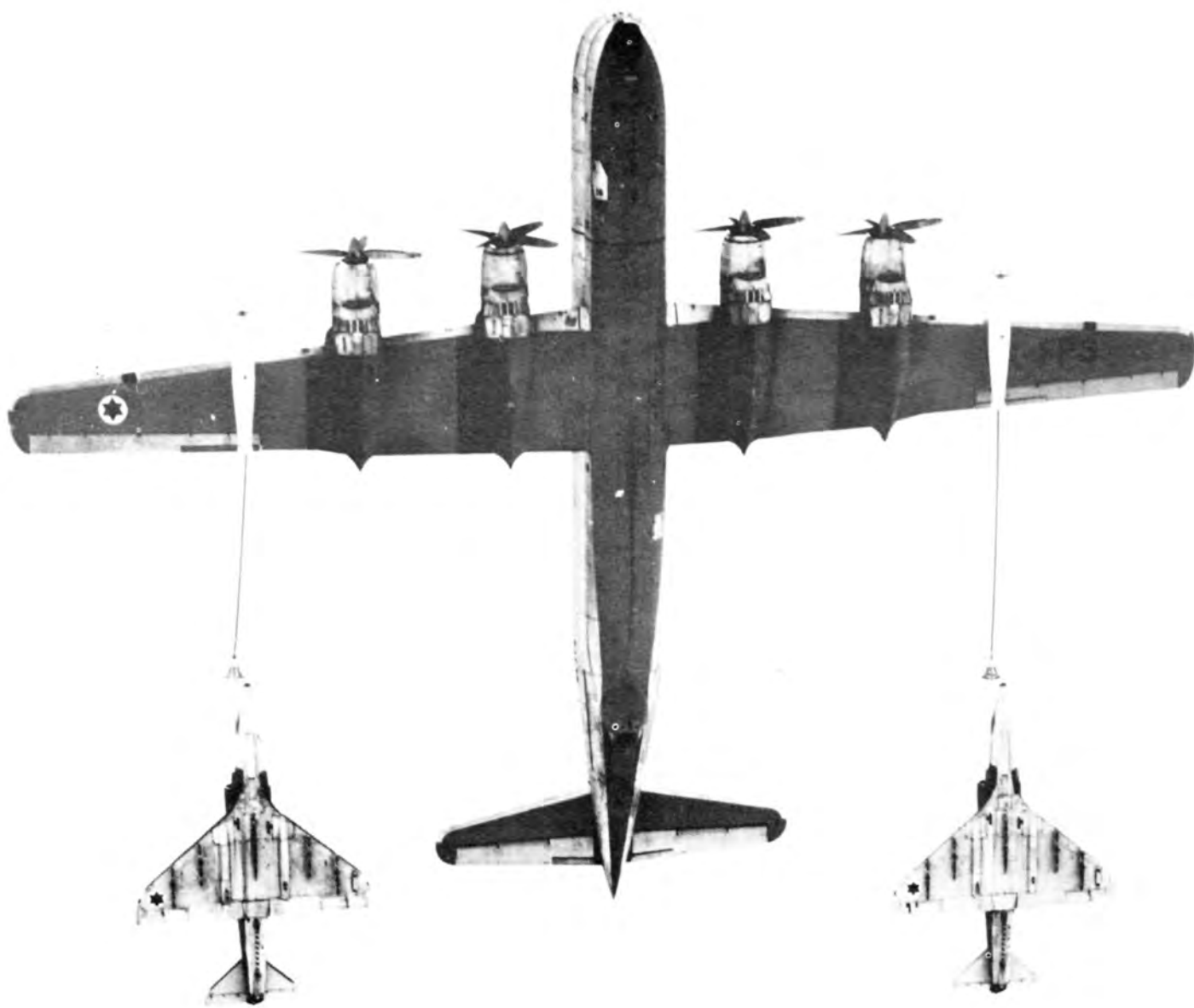




The Boeing Stratocruiser/Stratofreighter in Israeli Service

by Noam Hartoch

The serious historian studying the formation and development of the Israeli Air Force (IDFAF) always remains puzzled at the ways and means by which this force acquired its equipment. This is particularly true of the first 20 years or so of the IDFAF's existence where very few official and legal sources were available from which equipment could be procured according to need (not just because it was available and so purchased and put into service). One such example is the Boeing *Stratocruiser/Stratofreighter* in Israeli service.

Before continuing with this story, one comment must be made as to the authentic definition of the aircraft within the IDFAF. Although the majority of the 14 Stratos in service were pure *Stratofreighters*, the name *Stratocruiser* was

Two Israeli Air Force A-4H *Skyhawks* being refueled in the air from KC-97G 4X-FPS/037. This aircraft was destroyed in a ground collision on 11-30-70. (Author's Collection)

adopted from the beginning, no doubt due to the fact that the first five aircraft were indeed model B-377 *Stratocruisers* retaining their basic civil configuration throughout their service careers. None was modified to C-97 standards, although none remained purely civilian. The modified 377 was redesignated 377M and incorporated several C-97 features. Still there was a distinct difference between the first five aircraft, and the nine examples which followed later on. The latter were all KC-97s of USAF origin and thus should not have been known as "Stratocruisers." Nevertheless, this



name was widely used among aircrews and mechanics to describe both versions, and thus throughout this article a compromise designation is used, simply "Strato."

One could trace the requirement for a large, long-range transport aircraft for the IDFAF in the aftermath of the 1956 Sinai campaigns, the result of two major military operations: the Anglo-French "Operation Musketeer" and the Israeli "Operation Kadesh." On the eve of the 29th of October 1956, 16 IDFAF C-47s, almost the entire inventory of the force's single transport squadron, dropped 395 paratroopers of the No. 202 Parachute Brigade near Parker's Memorial in the Mitla pass, deep in the Sinai peninsula, 156 miles from the Israeli/Egyptian border. Most of the paratroopers came from the No. 890 Parachute Battalion, which back in the early fifties had practiced several joint operations with the air force. But the Israeli army never repeated such a large-scale paraprop, and it remained a milestone in its history.

The transport squadron of October 1956 consisted of two aircraft types, the Douglas C-47/DC-3 of which there were 22 on strength, including 10 on loan from the French Armée-de-l'Air, and the newly acquired Nord N-2501IS *Noratlases*, three of which were delivered in 1955/56 out of a total of eight on order. Apart from the 10 leased *Dakotas*, the squadron had 15 aircraft on charge with 31 pilots, 24 captains, and just seven copilots, the latter including Lt. Yael Finkelstein, the first and only woman pilot to have served with the squadron. The unit was based at the Ekron air base under the command of Maj. Yehuda Arbel.

Immediately before the 1956 war the IDF made use of air force planes to transport ammunition and spare parts from abroad, the main source for arms being France. It was not uncommon for the slow *Dakota* to cover the distance between Israel and Paris in almost a day, with intermediate stops usually at Rome, sometimes at Nicosia or Athens. The arrival

An early view of 4X-FPS showing its former USAF serial on the tail. The photo was taken at Shannon where it landed for refueling on its delivery flight.
(Author's Collection via M. Nason)

of the *Noratlases* relieved the C-47 fleet from its international missions; however the small number of aircraft and lack of trained aircrews still made the *Dakota* an important part of the international operations, mainly as backup aircraft. In the days preceding the 29th of October, many resupply missions were flown by French *Noratlases* to ease the pressure from the Israelis. However it was evident that the C-47/N-2501 fleet was better used as tactical transports within the area, and that a truly long-range, high-volume transport aircraft was badly needed. The IDFAF command wanted an aircraft in the DC-6/Constellation class, because the latter was extensively used by the national airline El-Al. In 1957, El-Al began a reequipment program which resulted in a gradual phase-out of its L-049/149 aircraft in favor of modern Bristol *Britannia* 313 turboprops. By 1959/60, the *Constellation* operated the short runs to Nicosia, Athens and Istanbul as well as the weekly service to Munich via Vienna, and by early 1961 the remaining four aircraft (two -049s and two -149s) were placed in storage at the Bedek Overhaul Depot (the aircraft overhaul and maintenance element of Israel Aircraft Industries—IAI).

In 1962 joint discussions began between IDFAF officers and IAI officials for a possible *Constellation* modification program. El-Al had in the meantime sold its aircraft to a British charter carrier, Euravia, and a search was made for other aircraft. In the UK, c/n 2036 (G-ARHK) was purchased by IAI after a sale to Trans European Aviation Ltd. fell through. It was delivered directly from Canada in July 1962 to be followed by two ex-SAA examples, c/n 2623 (ZS-DBR) and c/n 2631 (ZS-DBT), which never arrived as the deal was canceled shortly after the arrival of 4X-AOK, the ex-TEA aircraft. The reason for canceling the *Constellation* deal was

the approach made by Mr. Al Schwimmer, director general of IAI, to Maj. Gen. Ezer Weizman, Commander-in-Chief of the IDFAF. Mr. Schwimmer had just learned that a U.S. charter airline had asked his firm to overhaul two C-97s (one of these was apparently a YC-97 pre-production aircraft, although the author failed to trace the identity of both and cannot confirm this fact). However, the airline went bankrupt before the work was completed. This gave IAI an excellent opportunity to study the C-97 and recommend its purchase by the IDFAF in a deal which seemed, at that time, a better solution to the IDFAF requirements than the *Constellation* modification. Obviously, the C-97 had improved military capabilities over the civil *Connies* and was cheaper, being quite unattractive on the civil markets of the early sixties.

Maj. Gen. Weizman was not happy about Schwimmer's proposal. He already had thoughts of a possible purchase of Lockheed C-130B *Hercules* aircraft and was not interested in old, outdated piston aircraft which might pose some heavy serviceability problems, resulting in the need for a larger number of aircraft. Mr. Schwimmer did not give up on his idea and while Maj. Gen. Weizman placed before the Ministry of Defence his request for two C-130Bs, Schwimmer approached the ministry with his proposal of modifying surplus *Stratos*. Having carefully studied both proposals, the Ministry of Defence came to the obvious conclusion that IAI's offer was the most attractive of both. It promised work for IAI's engineers in a major project and saved the country many millions of U.S. dollars by accepting IAI's program of surplus ex-U.S. aircraft purchase for a few thousand dollars, over a costly C-130 acquisition. The first phase of the program involved the delivery of five civil B-377 *Stratocruisers* from Pan-American World Airways, these being c/n 15963 N90947 "Clipper Queen of the Pacific," c/n 15925 N1025V "Clipper Celestial," c/n 15962 N90946 "Clipper Queen of the Skies," c/n 15930 N1030V "Clipper Reindeer" and c/n 15964 N90948 "Clipper Mandarin." All had served with PAA from 1949/50 until 1961 when placed in storage at San Francisco. The delivery flights of the five were a hair-raising experience, as was told by one of the ferry pilots, Hugo Marom:¹

"Bad weather, altimeter calibration problems and an error on behalf of the air traffic controller over France almost made me ditch the aircraft [4X-AOI, ex-N90948] in the Mediterranean. With only a few drops of fuel in the tanks I finally made it and landed at Bordeaux. While taxiing, the two inner engines cut off due to fuel starvation."

The five aircraft had all arrived at Lod International Airport by July 1962 and were immediately towed into the IAI hangars to start the massive modification process. Meanwhile the transport squadron was split. While the former unit retained its mix of *Dakota* and *Noratlases* aircraft, a few *Dakotas* were transferred to the second transport squadron which was to receive the *Stratos* in early 1964. Pilots were drawn from the existing unit and under the supervision of Captain Adams, a veteran U.S. pilot seconded from Pan-Am plus two flight engineers, also of PAA origin, the training program started. At the IAI engineering division, a team of skilled engineers, headed by Moshe Ahrens, chief of the division, sat down to implement the list of operational and design specifications laid down by the IDFAF:

1. Installation of JATO rockets to gain some STOL capability.
2. Replacement of the Pratt & Whitney R-4360 piston radials with Allison 501-D13 turboprops.
3. Fitting of larger flap assemblies.
4. Fitting of a swing-tail with clamshell doors to enable loading of bulky cargo and vehicles.
5. Addition of braking chutes.
6. Installation of a small crane, to be mounted near the cargo door with a capacity of up to 3500 lbs. of freight.
7. Installation of an Auxiliary Power Unit (APU).
8. The ability to carry up to 135 troops plus 35,000 lbs. of cargo.

These ambitious demands were soon reduced to a more realistic level. If the IDFAF wanted to stay by its planned introduction into service of the modified aircraft in two years' time, it had to drop many of its original conceptions, and thus it was decided to fit a swing-tail with clamshell doors as the main feature of the modification with the addition of a small cargo door in the forward fuselage section. The project was a complicated one, engineering-wise, as it involved precise strength calculations necessary to ensure that the fuselage did not bear excessive pressures and stress when opening the swing-tail and loading of jeeps, command cars and other heavy pieces of cargo. Two aircraft had this modification done, and during test flights it was soon learned that this modification posed too many design problems unless a severe restriction was imposed on the aircraft's performance and this was something the IDFAF rejected immediately. Thus only the first two aircraft had the swing-tail, the others



Stratocruiser 4X-FPZ/96 on one of its many overseas visits, here at London Gatwick. The "0" prefix to the serial was added in the early seventies when the IDFAF adopted a three-digit serialing system.

(Author's Collection via J.M.G. Gradidge)



Another visitor to London Gatwick is 4X-FPO shown on delivery in October 1971. Note the crude black paint applied over the former USAF insignia and serial.

being fitted just with clamshell doors and side loading cargo doors.

To enable the fitting of whole tail sections already equipped with clamshell doors, rather than design such doors on the civil B-377 model, a team of IAI mechanics went to Tucson, Arizona, to search for C-97 tails and components. It also had the task of locating suitable KC-97 aircraft which were taken out of service by the USAF for refurbishing and conversion to flyable condition. By the early sixties the U.S. government imposed a strict embargo on arms sale to Israel and no KC-97s could be exported. This, however, did not include the acquisition of aircraft parts, so that IAI could easily buy tails to fit on the civil B-377s, but was banned from acquiring complete airframes. When the U.S. finally released arms to Israel in two important deals (*Hawk Sams* in 1964, and *A-4 Sky hawks* in 1965), it opened the way to unrestricted purchase of military transport aircraft as well.

In February 1964, the first three aircraft were taken on charge by the air force (4X-FPX, FPY and FPZ), followed in January and May 1965 by the two swing-tail aircraft (4X-FPV and FPW). The latter now had C-97 tails on them (one of the tails belonged to c/n 15961, the former N90945) operated by single hydraulic actuators enabling the opening of the tails 92 degrees to starboard. The total cost of the swing-tail conversion was \$500,000 (the aircraft were bought from Pan-Am for approximately \$5,000 each).

In late 1966, a group of IAI mechanics went once more to Tucson to search for KC-97s, now that such aircraft were cleared for sale to Israel. Their mission was described by the U.S. media²: "About a year ago, the government of Israel sent three slightly built mechanics to National Aircraft's salvage yard on a seemingly impossible mission. From scrap, reclaimed parts and stripped-down carcasses, these mechanics were to build four huge cargo planes for the Israeli Air Force." Apart from overhauling the airframes, the mechanics were to collect a sizable amount of spare parts and engines which they did in a colorful manner and sometimes in a very unorthodox way. Again the papers told their story²: "Hard-pressed for engines, the Israelis find a C-97 donated by the

Federal Aviation Agency to the Tucson Fire Department. They are allowed to remove the engines, but must return the fuselage, which the firemen promptly burn."

A readily available source for engines was found at Aero Spacelines' California base where several C-97s were being converted to "Guppy" turboprops. Spare propellers were bought in the secondhand market, some actually made for civil DC-7s. Being nine inches longer than customary, they were fitted on the C-97s without any problems.

By October 1967 the four KC-97s arrived in Israel, ferried by American crews with IAI mechanics on board. The delivery flight took them from Tucson to Lod in Israel via Tulsa, New York, Gander, Shannon, overflying France, Italy and Greece. Additional KC-97s were bought between 1967 and 1973, some of which were fitted with aerial refueling systems bought from the U.S. in 1969. These became operational as Israel's first air tankers in 1970 making initial air-to-air refueling trials with *A-4 Skyhawks*.

With the delivery of the first B-377Ms the transport squadron, which by July 1964 included four *C-47 Dakotas*, was now set to take upon itself the missions for which it was established: long-haul transportation of military goods, ammunition, spare parts, etc. In September 1965 the two swing-tail *Stratos*, 4X-FPV and -FPW, flew four round trips to France from where the IDFAF had bought 13 Bell 47G helicopters for use as ab-initio helicopter trainers and for liaison duties (a task fulfilled by the Bell 47G in the 1967 war). Three helicopters were flown in each of the *Stratos*. Frequent flights were made to the plants of Avions Marcel Dassault, suppliers of most of the combat aircraft used by the IDFAF in the mid- and late-sixties as well as certain types of helicopters and transport aircraft. European airports, equipped with Instrument Landing Systems (ILS) such as London-Gatwick, Amsterdam, Copenhagen and Frankfurt, gave opportunity to Israeli aircrews to acquire more instrument rating experience and the *Stratos* became familiar sights at these locations, also at NATO air bases such as Mildenhall and Upper Heyford in the UK, Rhein-Main in Germany and others scattered around Western Europe and the Mediterranean.

Probably the most difficult of all routings was the flight of 4X-FPY across the continent of Africa in the summer of 1966. Israel's Prime Minister, Mr. Levi Eshkol, was invited to several African countries to highlight the flourishing relations Israel had at that time with most of the black African countries. For the first time it was decided that the flight should be operated by a military aircraft rather than the customary El-Al Boeing jet. It was, in fact, the first time that an IDFAF aircraft was officially used in VIP configuration. The aircraft chosen was 4X-FPY "Massada," formerly Pan-Am's "Queen of the Pacific," piloted by Maj. Aryeh Ozz, commander of the transport squadron, and carrying a crew of 12 including three stewards seconded from El-Al. The "Massada" covered 25,000 kilometers in 58.5 flying hours visiting Kenya, Uganda, Madagascar, Congo-Kinshasa, Liberia, Senegal and the Ivory Coast. During these flights, lasting from May 27 to June 17, no problems whatsoever were encountered by the aircraft or its crew, the *Strato* giving excellent performance on the many African flights which followed in support of IDF missions stationed in countries like Uganda, Ghana and Tanzania, providing these countries with military training



A wide-angle view of 4X-FPX showing the side loading door fitted to all the B-377s in IDFAF service, and enabling a close look at the squadron's insignia. (Author's Collection)



Aircraft No. 15 (4X-FPW) has its name *Betar* painted in Hebrew and English beneath the cockpit windows. (Author's Collection)

and build-up. *Stratos* flew regularly, almost weekly, to such destinations as Addis-Ababa, Entebbe, Bangui, Fort Lamy or Nairobi, hauling thousands of tons of freight and hundreds of Israeli officers and military advisors across the huge continent. In one instance, the IDFAF was instructed to deliver nine tons of ammunition to Entebbe in Uganda where IDFAF officers set up an air force and pilot academy. This was exceeding the maximum allowable payload (which was in the 6-7 ton range). However, by removing all unnecessary interior items it was possible to accomplish the mission, much to the amazement of the loadmasters!

The *Stratos* numbered seven operational aircraft when the "Six-Day War" broke out on June 5, 1967. The initial tasks of the squadron were to drop fuel barrels to the advancing Israeli armor units in the Sinai desert, particularly to the armor division led by Maj. Gen. Tal, into El-Arisch in the northwest part of the peninsula. Also dropped were food supplies and water tanks. Immediately after their capture, Sinai air bases were used by the *Stratos* as forward logistics bases from which flights were regularly operated to the main base at Lod airport. The squadron was now commanded by Maj. Yizchak Biran, a veteran *Dakota* pilot and one of the first pilots to have been trained on the *Strato* back in the mid-sixties.

When the hostilities were over, the *Stratos* were deployed once more to international destinations. Several flights were made to France, from where the IDFAF bought CM-170R *Magister* armed trainers to compensate for those lost during the Six-Day War. Further flights were made to the AMD plants which supplied spare parts for the *Ouragans*, *Mysteres*, *Super-Mysteres*, *Vautours* and *Mirages*, the French aircraft which still formed the nucleus of the IDFAF's combat force.

Despite mechanical problems which became all too common in the early seventies, none of the 14 aircraft on strength ever suffered any accident resulting from aircraft

malfunction or pilot error. However, the safety record could not be kept completely clean as, due to unforeseen circumstances, the squadron lost two of its aircraft in less than a year. On the night between the 29th and 30th of November 1970, a dispersal maneuver took place at Lod airport during which several *Dakotas* and *Stratos* were towed along the runways and parking ramps to take shelter from a simulated air attack on the field. At about 0200 local time, aircraft 4X-FPS, one of the first *Stratos* to have been modified as an aerial tanker, was being towed by a tractor on runway 12/30 without any lights displayed on either the tractor or the aircraft. Minutes later the tower cleared TWA flight TW-691, a scheduled all-cargo service to Kansas City via Frankfurt flown by Boeing 707-331C N790TW, to take off from runway 30. Unaware of the *Strato* still in tow, the captain ordered his first officer to start the takeoff roll. When reaching about two-thirds of the



A close view of 4X-FPV's swing-tail conversion with a tractor being unloaded. This modification was the first and only done on the B-377. Parked next to it is aircraft No. 15 (4X-FPW), the second swing-tail conversion. (Author's Collection)



runway length, the 707's numbers 1 and 2 engines struck the *Strato's* tail undersurfaces and the left wingtip severed part of the tail structure. The TWA jetliner, loaded with some 30 tons of cargo, mainly furniture pieces and flowers for export, caught fire which quickly spread to the *Strato*. Both aircraft were completely destroyed. Luckily, the three TWA crew members escaped unhurt, but two of the tractor drivers, and a mechanic who occupied the *Strato* cockpit to assist steering, were killed instantly.

The second tragedy occurred on September 17, 1971, this time involving 4X-FPR which flew from south to north, about 22 kilometers from the Suez Canal north of Ismailiya. At 1410 local time, two V-750VK (SAM-2) missiles, code named "Guideline" by NATO, were launched against the *Strato* which had eight crew members on board and was

An early view of 4X-FPU, the only KC-97F in the fleet, at the squadron's Lod air base ramp. This was one of the first ex-USAF C-97s purchased to supplement the civil B-377s bought from Pan Am three years earlier.

(Author's Collection)

returning to its base at Lod having completed another routine flight along the cease-fire line. The missiles exploded in the air and caused severe damage to the aircraft, which was crippled and lost height rapidly. One crew member bailed out and landed safely, the other seven lost their lives. The *Strato* struck the ground and was destroyed by the impact, its remains scattered over a large area.

By early October 1973, the squadron had 10 aircraft on strength. The *Dakotas*, which shared the unit with the *Stratos*, were now grouped into a different squadron. Aircraft 4X-FPR and FPS were lost in accidents and 4X-FPV and FPZ were taken out of service having exceeded their permissible lifetime. 4X-FPV was used as a spares source to its sister ship 4X-FPW, and 4X-FPZ was awaiting a similar fate. Since November 1971, the squadron had operated two Lockheed C-130H *Hercules* aircraft which if everything went as planned, were destined to replace the *Stratos* as the IDFAF's prime tactical long-range transport aircraft. Things, however, did not go according to plan. On October 6, 1973, at exactly 1400 local time, the Egyptian and Syrian armies started the "Yom Kippur War" against Israel. Despite what was widely thought, the war did not come upon the IDF as a total surprise. It was known a few days before October 6th that some sort of hostilities were being coordinated by Egypt and Syria, only the exact timing was miscalculated. For the *Strato* unit, things became clear a day before it all started. On October 5th, the squadron was ordered to fly two fully equipped infantry regiments from Central Command to Northern Command to strengthen the confrontation line in anticipation of a massive Syrian armored attack a day later. From their



Massada was the one and only *Strato* to have been converted as a VIP aircraft for Israel's Prime Minister's tour of Africa in 1966. It was also the only time a *Strato* had the Israeli flag painted on top of the tail and the title "Israel Air Force" painted along the fuselage in Hebrew and English. (Author's Collection)

base at Lod, the *Strato* flew to Ramat-David air base in the north discharging their load and awaiting further instructions. These, however, came 24 hours later when fierce Egyptian artillery and air attacks necessitated the evacuation of the town of Ophira in southeast Sinai. For this purpose two *Hercules* and one *Strato* were flown to the Ophira air base from which in a matter of hours the entire civil population was taken back to Israel. In the night between October 12th and 13th, the U.S. started a massive airlift resupply mission known as "Operation Nickel Grass." This involved several flights by C-130, C-141 and C-5A transport aircraft which were supplemented by IDFAF C-130, *Strato* and Boeing 707 flights. The latter were hastily purchased from IAI, being former TWA aircraft, and integrated into the *Strato/Hercules* unit. Two days later several ex-USAF C-130Es were delivered to the IDFAF and the role of the *Stratos* now became secondary. By mid-October the IDFAF GHQ relegated the *Stratos* to internal shuttle flights, thus abruptly ending nine long years of international flights. In a matter of days, the C-130 and B-707 became front-line, long-range transport aircraft, leaving the *Stratos* behind. On October 24th, one of the *Stratos* landed for the first time at IDFAF air base Nachshon, the former Egyptian air force base Fayid on the western bank of the Suez Canal, now captured by the IDF and quickly made available to the advancing Israeli troops. Most of the shuttle flights between Fayid and Lod were undertaken by the *Stratos*, supplemented by the veteran *Noratlans*.

By the end of 1975 only four aircraft remained in service. These were no longer used as transports, but were still kept as aerial tankers and for special duties. Since no longer flying on

international airways, the airplane's call signs were removed from the fuselage and replaced by a combination of the nationality marks 4X and the aircraft's serial number. 4X-FPP, which was now 4X-030 and the best tanker in the fleet, had to go in December 1975 leaving just one aircraft, 4X-FPU, in serviceable condition. To ease the pressure, the entire refueling system was removed from 4X-FPP and installed on 4X-FPO, which together with 4X-FPU soldiered on for a few weeks before 4X-FPU was struck off charge as well, leaving 4X-FPO the last operational air tanker in the IDFAF. After the delivery of two KC-130H tankers in April 1976, 4X-FPO stayed on as backup aircraft until April 1978, when it finally landed at Lod air base and was towed to the ramp for the last time.

Before Israel returned the Sinai peninsula to Egypt as part of the Camp David peace agreement, several *Stratos* were made airworthy for their last journey, a ferry flight to Sinai where some were left in derelict condition to rot away in the hot desert sun. At least four aircraft were left at Ophira AB, which now reverted to its original name Sharm El Sheikh/Ras-Nassrani, and others were deserted at the air bases of EL-Arisch and Refidim/Bir-Gafgafa. Two aircraft were destined for preservation, 4X-FPY to Hatzetim AB to serve as an officers club, and 4X-FPN, the last airworthy example, was flown in 1978 to the same air base to form part of the newly established IDFAF museum. This, and a few others which arrived too late to serve with the squadron, did not have individual names. All the others were given names of famous Jewish settlements from the Roman Empire era and of mountains which made history in Jewish tradition.



The only airworthy *Strato* is preserved at the IDFAF museum at Hatzetim Air Base in the Negev. This shot was taken in the summer of 1983.
(Author's Collection)



4X-FPX/98 showing its clamshell doors in the open position.
(Author's Collection via J.M.G. Gradidge)



N90946, one of the five ex-Pan Am B-377s purchased by the IDFAF in 1962. This photo was taken at Oakland where the aircraft was stored in cocooned condition in 1961.
(Author's Collection via J.M.G. Gradidge)



A rare shot of 4X-FOF still showing traces of its former Pan Am colors and carrying the name *Clipper Celestial* on the cheatline beneath the cockpit.
(Author's Collection via J.M.G. Gradidge)

BOEING B.377M STRATOCRUISER/KC-97 STRATOFREIGHTER FLEET LIST

AIRCRAFT TYPE	C/N	SERIAL NO.	CALLSIGN	PREVIOUSLY	REMARKS
B.377M (B.377-10-26)	15930	010	4X-FPV	4X-A0H; N1030V	Used call sign 4X-FOH 1962-65. Delivered 3.62, TOC 1.6.65, named "Arbel," cvtd. to swing-tail conf. SOC 1.9.72.
B.377M (B.377-10-26)	15925	015	4X-FPW	4X-ASA; 4X-AOF; N1025V	Used call sign 4X-FOF 1962-65. Delivered 3.62, TOC 16.5.65, named "Beitar," cvtd. to swing-tail conf. SOC 1.12.75.
KC.97G	16645	030	4X-FPP	52-2614	Delivered 14.10.67, TOC 13.8.70, named "Miron," cvtd. to three-point aerial refueler, SOC 1.12.75.
KC.97G	16643	031	4X-FPT	52-2612	Delivered 18.8.67, TOC 2.3.69, named "Tabor," derelict at Ophira AB. SOC 2.1.1.77.
KC.97G	16654	032	4X-FPQ	52-2623	TOC 15.9.70, SOC 19.12.76.
KC.97G	16714	033	4X-FPR	52-2683	Delivered 26.5.67, TOC 10.1.71, shot down over Sinai by two Egyptian SAM-2 missiles 17.9.71.
KC.97G	16830	035	4X-FPO	52-2799	Delivered 15.10.71, TOC 1.7.72, cvtd. to three-point aerial refueler, SOC 3.4.78.
KC.97G	16658	037	4X-FPS	52-2627	Delivered .65, TOC 24.6.67, named "Carmel," cvtd. to two-point aerial refueler, collided with B707 N790TW at Lod airport 30.11.70.
KC.97F	16446	038	4X-FPU	51-0378	Delivered 13.11.65, TOC 21.11.68, named "Megiddo," SOC 1.12.75.
KC.97G	16767	039	4X-FPN	52-2736	Delivered 12.8.73, TOC 14.8.73, SOC 19.12.76, preserved at Hatzerim AB since 1978.
KC.97G	17147	040	4X-FPM	53-0365	Delivered 6.73, TOC 3.7.73, SOC 1.12.75.
B.377M (B.377-1 0-29)	15962	096	4X-FPZ	4X-AOG; N90946	Used callsign 4X-FOD 1962-64, delivered 3.62, TOC 1.2.64, named "Yodfat," SOC 1.10.73.
B.377M (B.377-10-29)	15964	097	4X-FPY	4X-AOI; N90948	Used call sign 4X-FOI 1962-64, delivered 6.5.62, TOC 1.2.64, named "Massada," cvtd. to VIP configuration 1966, SOC 16.10.75, preserved at Hatzerim AB as an officers club.
B.377M (B.377-10-29)	15963	098	4X-FPX	4X-AOD; N90947	Used call sign 4X-FOG 1962-64, delivered 25.3.62, TOC 1.2.64, named "Zipori," SOC 1.9.75.

REGISTRATION/CONSTRUCTOR'S NUMBERS
CROSS REFERENCE

N1025V (15925)	4X-ASA (15925)	4X-FPQ (16654)
N1030V (15930)	4X-FOD (15962)	4X-FPR (16714)
N90946 (15962)	4X-FOF (15925)	4X-FPS (16658)
N90947 (15963)	4X-FOG (15963)	4X-FPT (16643)
N90948 (15964)	4X-FOH (15930)	4X-FPU (16446)
4X-AOD (15963)	4X-FOI (15964)	4X-FPV (15930)
4X-AOF (15925)	4X-FPM (17147)	4X-FPW (15925)
4X-AOG (15962)	4X-FPN (16767)	4X-FPX (15963)
4X-AOH (15930)	4X-FPO (16830)	4X-FPY (15964)
4X-AOI (15964)	4X-FPP (16645)	4X-FPZ (15962)

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SERIAL NUMBER (MILITARY)/CONSTRUCTOR'S NUMBERS
CROSS REFERENCE

USAF	52-2799 (16830)	033 (16714)
51-0378 (16446)	53-0365 (17147)	035 (16830)
52-2612 (16643)		037 (16658)
52-2614 (16645)	IDFAF	038 (16446)
52-2623 (16654)	010 (15930)	039 (16767)
52-2627 (16658)	015 (15925)	040 (17147)
52-2683 (16714)	030 (16645)	096 (15962)
52-2736 (16767)	031 (16643)	097 (15964)
	032 (16654)	098 (15963)

INDIVIDUAL AIRCRAFT NAMES/CONSTRUCTOR'S NUMBERS
CROSS REFERENCE

U.S.		Flagship Scotland (15964)
Clipper America	15925	Flagship Sweden (15962)
Clipper Celestial	15925	Israeli
Clipper Eclipse	15964	Arbel (15930)
Clipper Good Hope	15963	Betar (15925)
Clipper Mandarin	15964	Carmel (16658)
Clipper Queen of the Pacific	15963	Massada (15964)
Clipper Queen of the Skies	15962	Megiddo (16446)
Clipper Rainbow	15925	Miron (16645)
Clipper Reindeer	15930	Tabor (16643)
Clipper Southern Cross	15930	Yodfat (15962)
Flagship Denmark	15963	Zipori (15963)