On 11 August 1952, Headquarters Atlantic Division initiated correspondence to Headquarters, Military Air Transport Service requesting that the 1605th Air Base Group at Lajes be permitted to enlarge to wing status. The justification for this was that the group organization was unrealistic and
inadequate to effectively accomplish the mission of the Azores Air Transport Station (as Lajes was referred to). Headquarters Atlantic Division believed that the location of the group in a foreign country involved problems of liaison with local government and military activities and that the prestige of the command would be greatly enhanced by the establishment of a wing. Permission was granted and on 1 February 1953, the 1605th Air Base Group was redesignated as the 1605th Air Base Wing.

This was not the only change in U.S. military leadership in the Azores. On 16 March 1953, the Commander-in-Chief, U.S. Atlantic Command organized a subordinate unified command in the Azores in U.S. Forces Azores (USFORAZ) and assigned the 1605th Air Base Wing commander over all U.S. Forces Azores (COMUSFORAZ). A small staff of Navy, Army and Air Force personnel comprised the joint staff of USFORAZ. The command was responsible for contingency planning, and, as the local representative for the U.S. Ambassador to Portugal, COMUSFORAZ was the liaison between the U.S. and the Portuguese in the Azores. The command’s mission was to support allied forces in the area, to assist in local defense, if requested, and to protect and evacuate U.S. citizens from the Azores, Europe, Africa, and Southwest Asia, or other areas of the world. COMUSFORAZ assumed operational control of all assigned U.S. military forces in the Azores region until the command was inactivated in 2004.

The U.S. Air Force was not the only military organization established at Lajes during the 1950s. A U.S. Army Port Battalion assumed control over the loading and unloading of supplies in Praia Bay in 1952 that today constitutes the Terminal Transportation Unit (TTU). During this period two U.S. Navy units also came aboard. The Naval Security Group Activity (NSGA), activated in 1954, provided high frequency communications to all Department of Defense forces operating throughout the Azores area. The Naval Air Facility, established in 1957, supported naval aviation operations through the Azores operational area. While these naval units went away in the 1990s, the Resident Officer In Charge of Construction (ROICC) remained on the island until December 2009.

The Yom Kippur War ended with a cease fire between the warring nations while Operation NICKEL GRASS sustained Israel and outperformed the Soviet's supply effort to Egypt and Syria. Soviet transport aircraft (AN-12s and AN-22s) moved barely 15,000 tons of cargo even though they only had to cover a distance of 1,700 miles. This airlift had a two-fold effect on the future of the U.S. Air Force. First, the Air Force modified the C-141 fleet for mid-air refueling and renewed interest in the C-5s aerial refueling capability. The second lesson confirmed the importance of the Air Force maintaining basing facilities at Lajes. In January 1974, the Department of Defense reconsidered the U.S. Navy command at Lajes Field. The 1605th Air Base Wing earned the Air Force Outstanding Unit Award for its effort during Operation NICKEL GRASS and retained control over Lajes Field. This same year also brought even more high-profile attention to Lajes when the Commander-in-Chief, President Richard M. Nixon, visited the island for the second time.

On 1 January 1980, an earthquake measuring 7.0 on the Richter scale struck Terceira Island. Damage to Lajes Field was minimal, however there was extensive destruction to Portuguese
communities throughout the island. Military personnel responded to the local crisis with food, shelter, equipment and manpower. The 1605th Air Base Wing Crisis Action Team became the focus for disaster relief operations by all U.S. forces and a coordination point with Portuguese military and civil authorities. Teams of U.S. Air Force, Army, Navy, civilian and dependent personnel were organized and dispatched into the communities hardest hit by the quake. These teams were engaged in clearing roads, digging through rubble and helping Portuguese families move their belongings to protected shelters. The base set up the gymnasium as a reception point for displaced Portuguese and American families. Dining facilities went on a 24-hour schedule feeding earthquake victims and emergency relief volunteers. Temporary housing was provided on base in dormitories. By 15 January, 150 families were housed in base facilities. Heavy equipment was used extensively by Civil Engineers to supplement the Portuguese machines that were clearing roads, moving rubble, toppling dangerous structures and in other ways facilitating the emergency operations. Base civil engineers provided generators to restore power to the Angra hospital, Angra bakery, and the Praia telephone system. For two weeks, U.S. forces assisted disaster recovery until Portuguese agencies could effectively take over the relief efforts.

The 1980 earthquake was just one of the many relief efforts made by American personnel in the history of Lajes Field. In 1963, six weeks of severe wind prevented Portuguese supply ships from reaching Santa Maria Island. The 1605th Air Base Wing coordinated to divert a C-124 to Lajes where it was loaded with five tons of food. The C-124 then airdropped the food to Santa Maria helping the residents survive until the next shipment arrived. In 1964, a series of earthquakes struck the island of Sao Jorge destroying homes and leaving thousands of people homeless. Many Sao Jorge residents made their way to Terceira Island. The 1605th Air Base Wing provided blankets, mattresses, pillows, and sheets to Terceira’s hospitals and relief centers. Other Military Air Transport Service (MATS) and Air National Guard (ANG) units flew in clothing from California to Lajes. The clothing was loaded onto U.S. Army port landing craft that delivered the clothing to Sao Jorge. In addition, housing for 200 Portuguese families from Sao Jorge was provided by the USFORAZ through a People-to-People project. The housing was in the form of 100 Quonset huts provided by the U.S. Navy. Since that time USFORAZ invited a Marine unit to deploy to the Azores for training to repair flood damage on the island of Sao Miguel in 1998. The 65th Airbase Wing also stepped up to assist flooding victims in local communities across the island following the damaging rain and wind storms that struck the island in December 2009.

It was not only in times of trouble that the U.S. personnel at Lajes assisted the local community. The People-to-People program was a foreign aid program initiated by President Dwight D. Eisenhower in 1956 made up of civic leaders and businessmen. U.S. Forces Azores command coordinated many of the People-to-People projects throughout the Azores Island. Some of the projects included constructing local water wells, stocking trout in Furnas Lake on Sao Miguel Island, and airlifting different breeds of livestock to the island. The Lajes Chapel Base Charitable Organization has collected foodstuff and items for delivery to local families in need. In 1998, a Marine construction unit deployed to Lajes to construct a fire-training tower for local civil protection authorities. The U.S. military has always tried to be a good neighbor with our Portuguese hosts in good times and in times of trouble. In 1998 a precedent was establish when Lajes Field conducted an exercise (Strong Partner I) with Portuguese military and civic authorities to practice relief efforts for an earthquake. As seen with the 1980 earthquake, it was an all too real situation and one in which preparedness could make the difference.
As Lajes entered the 1980s, a change in the organizational structure of the Wing took place. On 1 January 1982, the 1605th Air Base Wing was redesignated the 1605th Military Airlift Support Wing. The major change involved reassigning the Air Terminal Operations section, formerly under the 1605th Transportation Squadron, and the Wing Command Post and Station Operations sections to Aircraft Maintenance Squadron and redesignating that squadron the 1605th Military Airlift Support Squadron. This move would also take Lajes away from being an en route aircraft maintenance facility to an en route support facility. However, station air traffic continued along at a steady rate. Transiting aircraft, crews and personnel participating in exercises such as Bright Star and the annual REFORGER (Return of Forces to Germany) were still making their way through Lajes.

The 1980s were also marked with a high construction growth. A new addition was placed on the gymnasium and a new commissary was built. In addition, many of those 1950s-era facilities were refurbished. The construction of Beira Mar housing and new dormitories made life at Lajes more comfortable for Airmen and their families.

Lajes supported the massive airlift during the Gulf war. On the first day of the deployment over 90 aircraft transited Lajes. Strategic Air Command staged a provisional tanker wing at Lajes to support the airlift. At the height of the operation a peak of 33 tanker aircraft and 600 troops deployed to Lajes. At one point during Operation DESERT SHIELD there was a maximum of 56 aircraft on the ramp – which included SAC, MAC, Guard, Reserve, Marine, Navy, and several fighter aircraft drop-ins. Despite having the airfield close to capacity, not one aircraft was refused landing or service. During the entire Gulf War, Lajes provided quality en route support for over 12,000 aircraft operations. Military Airlift Support Squadron personnel handled over 15,000 tons of essential cargo needed for the war effort. With the second largest fuel disbursement facility in the Air Force, Lajes pumped five times the normal amount of fuel. Fuels personnel issued over 40 million gallons of petroleum products without a major safety incident or delay in aircraft departures. Throughout the campaign, civil engineering personnel worked over 9,450 man-hours to maintain an antiquated, 35-year-old hydrant refueling system. Throughout this period over 75,000 personnel passed through Lajes Field. Over 10,000 of them were billeted during both operations. To accommodate them all, the base gymnasium was converted into a 330-bed overflow facility. Services personnel ensured all transitory aircrews and troop movements bound for the Gulf region had a clean and comfortable place to sleep. The in-flight kitchen prepared over 18,000 flight meals and set up a 24-hour dining service operation for crews on call. The 600 deployed personnel at Lajes were treated as part of Team Lajes. The challenges of Operations DESERT/STORM were met head on with determination and pride that far exceeded expectations. The 1605th Military Airlift Support Wing received the Air Force Outstanding Unit Award for its support of operations during the Gulf War.

Soon after the Gulf War ended, the Air Force underwent a massive reorganization. The strategic and tactical assets of SAC and TAC were combined to form Air Combat Command (ACC). MACs airlift operations and SACs refueling capabilities were shaped into Air Mobility Command (AMC). The Air Force was moving from composite wings to the whole wing concept. Lajes Field underwent a significant change as a result. The Lajes U.S. base command changed from the 1605th Military Airlift Support Wing to the 65th Support Wing in January 1992. The Wing remained
under Air Mobility Command, however plans were made to transfer the Wing to Air Combat Command. On 1 October 1993, the transition from AMC to ACC took place. Since the Americans first arrived at Lajes in January 1944, Lajes had been under the leadership of an airlift major command (ATC, MATS, MAC, and AMC). The Wing under ACC formed a more natural chain of command. The commander of U.S. Forces Azores reported to U.S. Atlantic Command, and ACC was a component of U.S. Atlantic Command. Along with the change in command, the 65th Support Wing was redesignated the 65th Air Base Wing (65 ABW), the designation of the unit today. AMC still kept a support squadron at Lajes to coordinate AMC flights. The unit is the largest tenant unit at Lajes and is designated the 729th Air Mobility Support Squadron.