

PROJECT SPOTLIGHT 

PHOENIX SKY HARBOR INTERNATIONAL AIRPORT REPLACES HUGE ESCALATORS

by Terri Wagner

Photos by Tom Story

Courtesy: Phoenix Sky Harbor International Airport



Indicates an Online Feature

The Phoenix Sky Harbor International Airport, the fifth busiest airport in the world, is located three miles southeast of the downtown Phoenix area. In 2003, the airport served a record number of 37.4 million passengers. On July 16, 1935, the city bought the "Farm" (285 acres of land), as it was then called for US\$100,000 from the Acme Investment Co. Terminal 1 opened on October 13, 1952, with a price tag of US\$835,000. The airport was used by American, TWA, Frontier and Western airlines. The typical airplanes were the DC-3, the DC-6 and the Super Constellation. The air traffic control tower was constructed out of welded underground fuel storage tanks one on top of each other with a three-and-a-half-foot-wide pipe running up the center of the tower with all the radio, telephone and lighting wiring. The future landmark tower's only access then was a 129-step spiral staircase. In 1990, Terminal 1 was demolished and the other terminals never re-numbered, so you might say Terminal 1 was retired.

Terminal 3 opened in October 1979 with four 90-foot-long escalators installed by Montgomery, the largest in Arizona at the time. The US\$35-million terminal increased passenger traffic to seven million. Terminal 3 contains 880,000 square feet of space with 23 airline gates on two concourses. Its two level core building contains airline ticket counters, baggage claim and car rental counters on the ground level and shops, restaurants and gate access on the second level. The US\$13-million six-level parking garage is easily accessible via elevators between the terminal and the garage. A fourth terminal was added in 1990.

This year the airport approved a plan to replace the four escalators in Terminal 3 with some interesting challenges. The budget would be US\$1.7 million, it had to start after spring break in April and be finished by the November holidays. With 400,000 passengers in June, the airport could not afford to have the escalators completely shutdown. And if that weren't enough, the US\$1-million art wall project had to be preserved. The walls have been designed to look like the Grand Canyon, a mere 227 miles from the airport.

"This is probably the first time that escalators of this size and magnitude have been replaced in an open, operating airport," noted James Schroeder, Aviation Superintendent for Facilities and Services at Sky Harbor. In talking with EW, Schroeder mentioned that a special framing rig was designed to remove the four

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*NOTE: This test will continue to be based on the 2000 edition of the *Elevator Industry Field Employees' Handbook* until 1/1/05 when the 2005 edition becomes effective.



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PHOENIX SKY HARBOR Continued

Montgomery units and replace them with ThyssenKrupp Elevator Victoria models. Air-driven chain hoists suspended from the rigging structure were used to lift out large portions of the old escalators. Hoisting and welding were done between the hours of 10 p.m. and 6 a.m. The rise is 35.6 feet at the original 90-foot length. Gannett Fleming served as the vertical transportation consultant.

The escalators were removed one at a time. Each one first cut into three pieces. Those pieces were lifted with steel chains, then lowered to the ground and transported out of the terminal. Workers, suspended by lifeline cables, assisted in guiding the large pieces as they were lowered to the floor. To minimize the impact on travelers, the four escalators were removed and replaced in phases so two units (up and down) were running at all times. Ironically, the man that oversaw the project for ThyssenKrupp, Ron Wood, is the son of Vic Wood, the man that oversaw the installation of the escalators in 1979 for Montgomery Elevator.

The project was completed ahead of schedule and on budget. The new units have bronze glass with lighted handrails. The escalator replacement project was imperative since the west side of Terminal 3, where the units are located, only has two public and one service elevators. The east side has 16 elevators. ThyssenKrupp has a six-year maintenance contract with four one-year options. 

