

Pavesmart Technology Rehabilitates Runway at SW Florida Int'l Airport

A major runway rehab project has been in the spotlight at the Southwest Florida International Airport.

By Steve Hudson -- Dixie Contractor, 4/16/2007

Asphalt paving jobs come in all shapes and sizes — but for sheer complexity, tight specs and critical timing, it's hard to top an airport paving job.

Just ask the folks at Ajax Paving Industries in Fort Myers, Fla. Ajax Paving recently served as the pavement rehab and asphalt paving contractor on a major taxiway and runway rehab project at the Southwest Florida International Airport in Fort Myers, Fla., known to frequent travelers as RSW.

The airport was born in the early 1970s when it became clear that Page Field, the airport then serving the Fort Myers area, was not going to be able to handle new aircraft and the expected increase in traffic. A site near Interstate 75 (which was then under construction) was eventually chosen for a new airport. Ground was broken in 1980, and the new airport — then known as Southwest Florida Regional Airport — opened on May 13, 1983. In 1993 the airport was renamed the Southwest Florida International Airport; that same year, the runway was lengthened to 12,000 feet. To meet increasing traffic demands, a new Midfield Terminal Complex was opened in 2005. And in the future, as usage continues to increase, plans call for a second runway to open in 2010.

But that second runway is still several years down the road. Meanwhile, the airport has been in upgrade mode ever since the new terminal opened in 2005 — and part of that upgrading is the recent rehabilitation of the facility's existing runway.

Conversion of Taxiway A into a temporary runway was approved by the Federal Aviation Administration and the Florida Department of Transportation in 2004. Plans called for runway renovation to take place following construction of the new terminal, since the terminal project included construction of an additional taxiway (Taxiway F) to serve the new terminal. That taxiway, located south of the runway, has been in use since the new terminal opened and served as the taxiway while runway rehab work was going on.

Typically, the average life of a runway is about 20 years before resurfacing is required, and Southwest Florida International Airport's runway had been in service for 23 years. But rehabbing the runway at a single-runway international airport is no small task. Planners benefited from the experiences of other airports (including Memphis, Oakland and Atlanta) which had experience in converting taxiways to temporary runways. Preliminary planning, design and coordination with the FAA, FDOT, various airlines, the Port Authority staff, and consultants required about four years.

The plan that finally emerged allows for rehabbing the runway with a minimal amount of disruption to airport operations. Owen-Ames-Kimball Co. was named as the construction manager to oversee the overall project, with Leo Smith as project manager.

Ajax Paving was chosen to handle the asphalt work. Key Ajax personnel involved with the project include Dennis Breuer, area manager; Mike Graf, project manager; Jim Mann, project superintendent; and Robert Peterson, paving superintendent.

The overall plan called for first converting an adjacent taxiway (Taxiway A, located on the north side of the existing runway) to a temporary runway with a length of 10,000 feet and a width of 150 feet. Following the conversion, landings and take-offs would be moved to that temporary runway while rehab work on the existing runway was completed.

The first step was to convert Taxiway A into a temporary runway. That portion of the work required not only widening the taxiway to 150 feet but also leveling, resurfacing and cross-slope grade adjustment. The 400-foot-long connectors on each end had to be milled, leveled and paved as well; the connector work had to be completed within a very short five-hour window. Various other crossovers also had to be reconstructed.

The work began with [milling](#) and was handled in thirds, starting on the west end of the runway. Turtle Southeast, Tampa, worked as a subcontractor to Ajax paving to handle the milling operation, removing an average of 2.5 inches of material with some cuts being as deep as 3 inches to 4 inches. These millings, as well as all subsequent millings at the site, were recycled at Ajax plants for use on other projects.

With milling complete, Ajax crews then began placing new virgin asphalt atop the milled surface. The first ton of mix was placed March 1, 2006, using a paving spread which included a Blaw Knox 3200 paving machine, a pair of Sakai 850 double-drum vibratory rollers, a Bomag seven-tire rubber-tired roller, and a Hypac steel drum finish roller. A Roadtec SB2500 Shuttle Buggy was also utilized during much of the project. During paving, the shuttle buggy was offset to keep asphalt trucks from running on the tacked surface.

Besides providing a smooth surface for take-offs and landings, a major goal of the paving operation was to correct the cross slope from 1.5 percent to 1 percent.

"That doesn't sound like a lot until you take it across the entire 150-foot width," notes Mann, adding that in some areas as many as seven 1.5-inch lifts were required to yield the desired surface.

The team utilized Pavesmart technology to eliminate the need for staking and string during the paving operation.

After a 30-day cure period, Cardinal International Grooving took care of grooving the 10,000-foot-long temporary runway. Working 24/7, grooving required about seven days to complete.

The taxiway-turned-runway was turned over to the airport on Sept. 16. Immediately, the numbers on the old runway were blacked out and new markings were applied to the temporary runway to eliminate any risk of confusion over the correct place to land.

Meanwhile, electrical work was going on along the old runway — and as it was completed, milling followed close behind.

During the runway phase of the work, Ajax Paving utilized the same approach as during the taxiway conversion. First, milling removed an average of 2.5 inches of material. Then, as milling was completed, new asphalt was placed using the Pavesmart system. Finally grooving added the desired surface texture.

The first third of the runway rehabilitation was completed by Christmas, with rehab and repaving totally finished by late January.

Overall, about 100,000 tons of mix was required to complete this project. About 59,000 tons of mix was utilized during conversion of the taxiway to a temporary runway; another 41,000 tons was required during rehab of the old runway. The mix was manufactured in two Ajax plants — the company's Cook-Brown Road Plant and also the plant on Alico Road.

In addition to the asphalt paving, a 3/8-inch-thick slurry seal surface treatment was applied to the shoulders.

Mixed on-site, the seal was applied using a small paving machine.

Grooving of the rehabilitated runway, with its length of 12,000 feet, took about 10 days.

As soon as runway rehab paving was complete, attention turned immediately to applying lettering and striping to the new runway while blacking out the marking on the temporary runway in order to eliminate any chance of pilot confusion. All agree that this short window is one of the most critical parts of the project, as incoming pilots are faced with two new-looking runways located side by side. Thus, quick attention to pavement marking was critical.

It's no surprise that a project such as this brings its own unique set of challenges. As on many paving projects, traffic control was certainly an issue — but the traffic in this case was airplanes, not cars. The reason had to do with the layout of the site. The original Taxiway A, which would become that temporary runway, was located to the north of the existing runway (the one to be refurbished). Taxiway F, the new taxiway which would remain in service, was located to the south of the original runway. In other words, once take-offs and landings were shifted to Taxiway A to allow runway rehab to begin, every single commercial aircraft using the airport would have to cross the old runway to get from the terminal and Taxiway F to the temporary runway — all while rehab construction was going on.

Another challenge, particularly during the hotter seasons, was the simple matter of heat.

"We completed the Taxiway A conversion during the heat of summer," Breuer says, "and on a runway like this there is no shade at all. There is literally nowhere to go to get out of the sun, and the guys working out there earned every penny they made."