

Runway Rehabilitation at Cobb County- McCollum Airport

Portland cement concrete whitetopping was used recently during runway rehabilitation on the 6,305-foot-long Runway 9-27 at McCollum Airport in Georgia's Cobb County.

By Roy Keck

General aviation runway repairs and maintenance typically represent a significant cost item in an airport's operating budget. Recognizing this, Cobb County recently advertised a runway rehabilitation project that also included an option for use of portland cement concrete whitetopping to remediate the 6,305-foot-long Runway 9-27 at the county's McCollum Airport.

McCollum's runway was extended in 2006 to accommodate light commercial jets, and runway shutdowns are a serious consideration. The high takeoff count now demands high-quality, long-lasting materials to minimize downtime for repairs, and a long-lasting concrete alternative was included in the bidding.

Concrete was chosen for the rehab based on the bid results, and the project would not only rehabilitate the runway surface but would widen the runway by 25 feet as well. Upon reopening, the rehabilitated runway would be 100 feet wide, up from its previous width of 75 feet.

"One hundred feet is the standard width for new runways," said Karl



Von Hagel, airport manager for Cobb County, "and the concrete should last longer than the asphalt. The asphalt was repaved about 20 years ago, but the concrete should last at least 30."

Opened in 1960, the airport is named for the late Herbert McCollum, who served as the one-man commission of Cobb County from 1957 to 1963. With more than 119,600 takeoffs and landings in 2007, McCollum is the fourth-busiest airport in the state – and the improved runway will likely make the airport even busier.

What Is Whitetopping?

Whitetopping is a portland cement concrete overlay placed over existing

asphalt pavement. It can be used as a paving surface course when traditional materials have failed due to general deterioration or even rutting.

Whitetopping can be placed at depths ranging from 2 to 8 inches, depending on the application. Whitetopping does not rut or washboard and works with milling so that the grade can be maintained. Additionally, concrete pavement surfaces have high albedo and can be used in LEED projects to reduce heat island effect. Whitetopping is typically price competitive with other

asphalt pavement. It can be used as a paving surface course when traditional materials have failed due to general deterioration or even rutting.

resurfacing materials and is considered a good option for many pavement rehabilitation projects.

The concrete option was within 3 percent of the asphalt bid, and the construction schedule was set to allow a 21-day closure for the runway, beginning Nov. 10 and reopening Dec. 1.

The runway was closed at night for two months prior to paving as crews did grading work in preparation for the concrete work.

More Than 70,000 Square Yards Of Concrete

During the rehabilitation project, Michigan-based paving contractor Six-S Inc. placed more than 70,000 square yards of P-501 concrete at a thickness of 7 inches and at a rate of 1,800 cubic yards of slip-formed mix each day. This was the first project for



Above and below: A GOMACO 2800 paver placed concrete during the McCollum Airport runway rehabilitation project at a rate of 1,800 cubic yards of concrete per day.



McCullum Airport

Six-S outside of Michigan, where they have been handling concrete paving projects for more than 25 years.

The widening operation took place entirely from the south side of the runway and required shifting the centerline crown and overlay along the entire runway length.

According to Project Manager Mike Evangelista, cold weather was the most difficult aspect of his operations. However, cold conditions were easily handled through the use of heated batch water and an alternate concrete mix design. The concrete achieved the desired 550-psi flexural strength in three days and achieved the ultimate design of 650-psi flex at 28 days. Traditional flexural testing beams were made for quality control checks.

A total of 10 dump trucks and two agitating hopper trucks were used for placing the concrete in front of a GOMACO GHP 2800 paver. Control joints, with corresponding dowel bar baskets, were cut every 12.5 feet.

Concrete was placed in strips 25 feet wide, leaving a space between parallel strips for subsequent pours. Evangelista stated the 21-day schedule was a challenge, too, but added that it proved to be the best plan for everyone to place the 15,000 cubic yards of concrete.

Unique Concrete Conveyor Aided Fast Construction

The McCollum runway rehabilitation project benefited from the use of a specialized concrete conveyor system designed by Mike Evangelista, project

manager for Six-S. He designed the conveyor specifically to increase the placement rate on high-production paving projects, and it was well suited for use on the McCollum job.

On this project, the 20-foot-long patent-pending transfer belt worked in tandem with a Volvo loader, hooking up to the auxiliary attachment system to get hydraulic power for its self-contained motor.

The conveyor folds in half and fits within the path of the loader when being moved around. When transported between project sites, it fits within an 8.5-foot-wide path, thus eliminating the need for oversize load permits. Additionally, says Evangelista, because of its portability and use as an attachment to the loader, it offers economic savings.

Inset: Mike Evangelista, project manager for Six-S, Inc., the concrete contractor on the McCollum project, designed the unique concrete conveyor used to place the low slump paving mix. The conveyor, working here in conjunction with a Volvo loader, was specifically designed to aid placement rates on high-production paving on projects such as this one.



Open House Spotlights McCullum Whitetopping

An open house was held during the construction process to showcase the project while concrete was actually being placed. Speakers at the open house and demonstration included Karl Van Hagel, airport manager; Michael Reiter, designer, The LPA Group; and Mike Evangelista, project manager, and John Wood, quality control manager, both with concrete paving contractor Six-S, Inc.

“More than 50 airport designers, contractors, suppliers, and government officials attended the open house, hosted by Van Hagel and McCollum-Cobb County Airport,” said Greg Dean, ACPA-SE airport programs director, who went on to describe the project as an “outstanding example” of how whitetopping can be used for runway rehabilitation.

“Speed of construction, exceptional life cycle cost, contractor availability



The McCollum runway rehabilitation project benefited from the use of a specialized concrete conveyor system.

Guests at the open house check out the pavement project. Pavement was placed in 25-foot-wide strips, with subsequent in-filling between.

and support – all of these goals have been achieved,” Dean said. “The businesses that rely upon this airport will receive benefits from this decision for decades into the future.” ■

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