AIRFIELDS

The First End-Around is a Success All the Way Around

It is the first of its kind on an American airport. In fact, there is only one other like it in the world on a major airport, and it's in Frankfurt, Germany. It's called an end-around, and work has just been completed on one at Hartsfield-Jackson International Airport in Atlanta, Georgia.

Taxiway Victor (V) is the nation's first Federal Aviation Administration (FAA) approved end-around taxiway. Before Taxiway V opened, the approximately 700 airplanes a day that landed on the airport's northern most runway, Runway 8L/26R, had to wait in line for clearance to taxi across the other active runway, Runway 8R/26L, to get to taxiways Echo (E) and Foxtrot (F) or to the terminal gates.

Now, when the planes land on Runway 8L/26R, they just travel to the end of the runway and turn onto the new 4200 feet (1280 m) long Taxiway V. The taxiway dips 30 feet (9.1 m) below the level of the adjacent runway before emerging at the gate area. The dip in the taxiway allows planes to keep taking off from the runway without any interruptions.

FAA studies have predicted a 30 percent improvement in overall runway efficiency because of the new end-around. Airlines are hoping to save an estimated $26 to $30 million per year, because their airplanes won't be sitting on the runway as long waiting to take off or waiting to taxi. It also means less delays for travellers and a safer travelling experience. Taxiway V eliminates the need for aircraft to cross an active runway.

Archer Western Contractors, based out of Atlanta, won the bid for the end-around at the airport. A tight company imposed deadline of 30 days or less to complete the 50,000 square yards (41,805 m2) of concrete paving was given for the project. The company mobilized their GOMACO paving equipment and went to work on the unique project.

Concrete was supplied by LaFarge, and Archer Western worked closely with them to develop a durable mix that could stand up while being slipformed and meet the project's required flexural strengths. "We had some problems with the initial mix design and some of the super plasticizers and other exotic ingredients in it," Don Cowan, Paving Coordinator for Archer Western, said. "We worked together to simplify the mix, but still meet the project requirements. It had to meet flexural requirements of 650 psi (45 MPa) at 28 days. The final result was a wonderful mix design that stood up well and left a really nice finish."

Security on the airport created some delays in concrete delivery, as the trucks passed through a main check point. To compensate, more end-dump trucks were utilized, averaging 15 to 18 trucks on the project. The trucks carried nine cubic yard (6.9 m3) loads of concrete and dumped into a 9500 placer working in front of the GOMACO GHP-2800 two-track paver.

"For placing concrete on this project, we preferred using a 9500, because we don't have to worry about getting on the reinforcing steel or baskets or anything like that," Cowan said. "It also puts down concrete very fast and effectively. We've had production of 250 cubic yards (191 m3) an hour and that's very good, especially when you're considering traffic, working in a secured area, and other factors that can slow down production."

The end-around taxiway is 130 feet (39.6 m) wide and 4200 feet (1280 m) long. It was slipformed in four paving passes with the GHP-2800 paving 25 feet (7.6 m) wide, 20 inch (508 mm) thick jointed concrete with 26 inch (660 mm) thickened edges on the slab. A Commander III slipformed 15 feet (4.6 m) wide shoulders over continuous steel reinforcing to complete the new taxiway.
"Both of the pavers on the project were very well suited to the kind of work they did," Cowan said. "The GHP-2800 is the right machine to do dual-lane paving and it handled the thick concrete very well. We were working both pavers hard and they produced a beautiful slab."

A T/C-600 texture/cure machine followed behind the pavers applying a burlap drag and light broom finish.

"It was definitely an interesting project for us," Cowan said. "It was challenging in several aspects. We were pouring on a cement-treated base and we had to watch the cure times on that. It was a relatively cut up job and the sequencing of the work and dealing with the variable factors was challenging.
"Overall though, the project and the smoothness we achieved on it has passed everyone's expectations with flying colors. I heard secondhand that the pilots are having to put on their brakes as they go around the end-around taxiway because it's so smooth. The concrete guru, who is also the airport's owner, is extremely pleased with the project. If he's pleased, then we know we did a good job."

It was a successful project for the company all the way around. They beat their company imposed deadline and finished the project in just 24 days. Concrete paving production averaged 1200 to 1500 cubic yards (917 to 1147 m3) per pour.
With work complete on the new taxiway, Archer Western started on another project at the airport. They're currently at work on a 20-phase apron replacement project and are using their brand new two-track GHP-2800 paver.

"The guys are loving our new paver and it's doing a really good job for us," Cowan said. "I'm very pleased with all of our GOMACO equipment and the support they provide is superior. I can call any number of people at GOMACO or their Georgia distributor, Tractor and Equipment Company, and get the answers I need. There has never been an issue that we haven't been able to resolve, and that means a lot to us in the field."

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