

Start-up nears airport Aircraft Towing System tests

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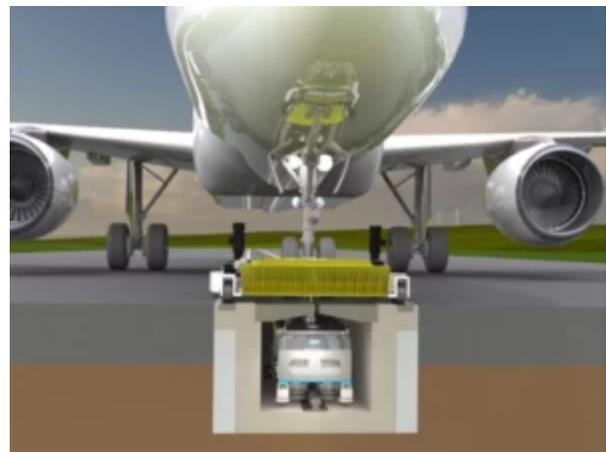
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By Scott Hamilton

May 16, 2022, © Leeham News: A start-up company is 60-90 days away from landing a contract with a US airport to install a prototype system that will pull airplanes around the field, eliminating taxiing with engines or tugs.

ATS Worldwide (for Aircraft Towing System) proposes a network of trench-like guides equipped with a flexible tow mechanism that captures the nose gear to tow airplanes from the regional jet to the Airbus A380. It's all done with automation. No new equipment, other than a nose camera, is added to the airplane. This eliminates added weight and complexity, or the need for a Supplemental Type Certificate, proposed by Wheel Tug. No external tug, like Taxibot, takes the airplane to the end of the runway. This eliminates airfield conflicts, ATS said during the *Aviation Week MRO Americas* conference last month in Dallas.



The ATS airport channel system. Source: ATS.

But constructing a network of towing trenches from the gate, across the ramp, to the taxiways and the runways, presents its own challenges. Constructing the network won't be inexpensive. Funding sources must be identified. The Federal Aviation Administration and other regulators must be convinced that the system will be safe. Regulatory standards must be prepared.

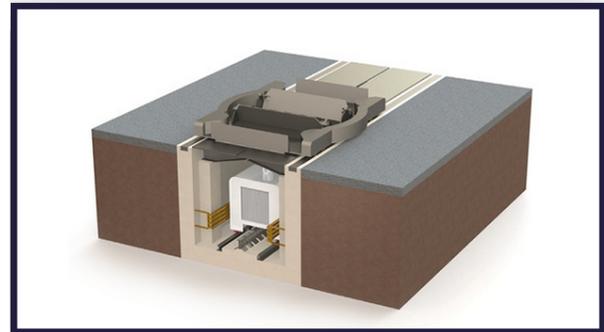
And the elephant in the room will be the reaction from unions whose ground handlers, wing walkers, etc., face losing jobs or fewer jobs.

The big advantages: eliminating the need for hundreds of tugs at an airport. Reduction in fuel required to taxi airplanes, major cost savings for the airlines. A reduction in emissions, a growing goal, especially in Europe and the USA. Finally, there can be lower headcounts by the airlines and airports, another cost savings.

Implementation, if all goes well, is years away. But a prototype system for proof-of-concept is expected to be activated at the Ardmore (OK) airport in 60-90 days. At least three major hub airports are reviewing proposals for initial demonstration projects as well, ATS says.

Installing infrastructure

“The taxiway channel consists of 15 to 17 meters, or 50- to 60 feet in length modules built into the airport taxiway at approximately 80 cm, or 2- to 6-foot deep and 120 cm or 3- to 4-foot wide,” ATS writes on its website. “Steel plates cover the channel, and it will use a brushes or rubber-seal system to close the 5 cm or 2-in gap between the steel plates. This reduces potential Foreign Object Damage (FOD) down in the channel. The channels are designed with a drainage and heating system where needed to keep the system operating during all weather conditions, such as rain, snow, and ice.”



**The ATS pullcar nose wheel equipment.
Source: ATS.**

Installing this system at a big hub airport will cost an estimated \$150m-\$170m, says Vince Howie, vice president and CEO of ATS. This is about \$1,000 per linear foot. The pull car sets cost about \$250,000 each. One per gate plus 10% more is needed for an airport. Leasing is another option.

Funding could come through the Airport Improvement Program (federal funding), Passenger Facility Charges (PFC) (per-ticket fees) or bond financing. Baltimore-Washington International Airport, which is mulling a proposal from ATS, indicated it may go the PFC route, Howie says.

FAA approval

The FAA must create standards for airport operation and connecting to airliners. Safety, installation, testing, and redundancy must be considered, and standards created. The system will be automated with software programs controlling the process. The adjustable pull cars can accommodate aircraft from regional jets to A380s. ATS offers different sizes for airports that, for example, only have small or single-aisle jets at the airport may acquire “small” or “medium” pull cars.

Mitigates workforce shortage—but costs jobs, too

Howie notes that the current workforce shortage in the US may be mitigated by the ATS system. Eliminating the need for marshallers and wing walkers may be a good thing in a labor shortage. But labor unions are likely to object if jobs are eliminated. Howie said one airline noted it can take up to 16 employees to reposition an airplane from the ramp to the

maintenance hangars, while only one would be needed using the ATS. ATSD published an estimate that the Frankfurt airport could eliminate 400 jobs. Labor unions are unlikely to take these reductions in stride.

Competition

ATS believes it has advantages over its prime competitors, Wheel Tug and Taxibot. Wheel Tug has been in development since at least 2005, 17 years ago. A 300 lb mechanism is installed on the nose wheel of the Boeing 737 and Airbus A320. Powered by the APU, Wheel Tug eliminates the need for a ground tug but not large reductions in ground personnel. The installation needs FAA approval and a Supplemental Type Certificate. After 17+ years, Wheel Tug still hasn't received an STC.

News articles quote Wheel Tug's CEO saying that neither Airbus nor Boeing support installation because doing so makes older airplanes viable longer, suppressing sales. However, Boeing is understood to believe the concept has not really taken off in the marketplace and it doesn't offer significant and consistent savings across a wide enough customer base. Further, Boeing is understood to believe that the systems are difficult and expensive to retrofit onto existing planes and the benefits have diminished over time as operators have gone to single-engine taxi.

Taxibot tows an airplane to the runway. It's slow and upon detaching from the airplane, the Taxibot is now on the airport, creating potential conflict with airplanes.

All the systems tout emissions reductions, in addition to fuel, workforce, and potentially time savings. Each calculates savings and emissions reductions.